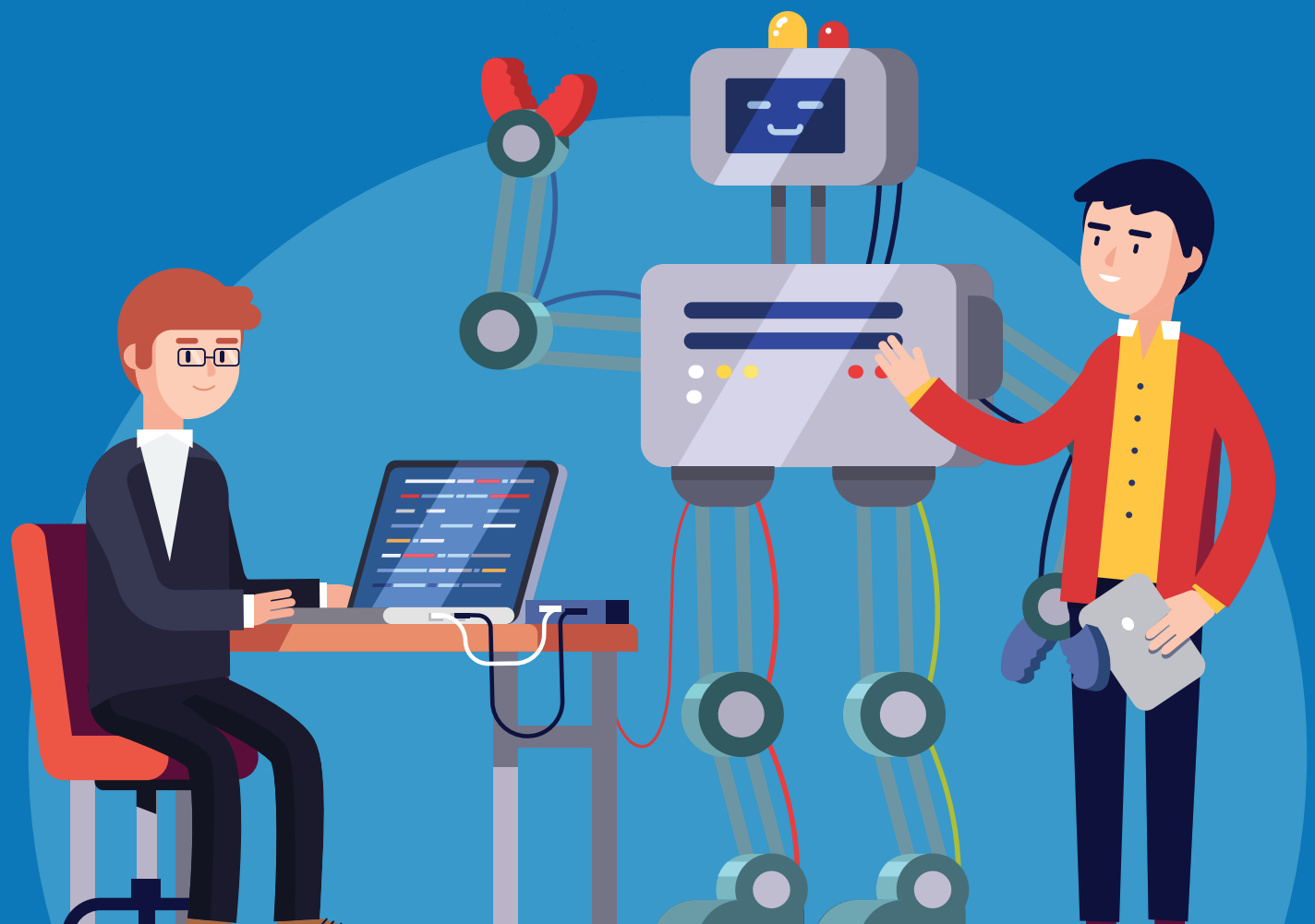
NITI Aayog | AIM ATAL INNOVATION MISSION

Top 100 ATL Marathon 2022-2023



Top 100 ATL Marathon

2022-2023

MESSAGE FROM **MISSION DIRECTOR**

Dr. Chintan Vaishnav

Mission Director, Atal Innovation Mission,
NITI Aayog

Our future generations will be the drivers of innovation and discovery and will set India's pace as a global powerhouse. Atal Tinkering Lab is Atal Innovation Mission (AIM), NITI Aayog's flagship initiative to promote innovation and creativity. ATLs are innovation maker spaces where young minds give shape to their ideas through hands-on do-it-yourself mode. The program has become a national movement that is revolutionising the Education Ecosystem of India. When I meet students from different quarters of the country who come up with innovations regardless of how remote and resource-constrained they may be, I am filled with much hope for the future of our country.

We are overjoyed by the tremendous reaction that the ATL and non-ATL schools around the nation have given the ATL Marathon 2022–2023. The theme for this edition of ATL Marathon was "India's G20 Presidency". The themes & problem statements were inspired by the various working groups of the G20. Every team came up with incredible concepts and prototypes, utilising technologies like virtual reality, robotics, and artificial intelligence to solve relevant difficulties in this field.

The ATL Marathon stands as a testament to the immense creativity, problem-solving skills, and dedication of young innovators across India. Each project featured in this Coffee Table Book represents not only a unique solution to pressing issues but also the culmination of countless hours of teamwork, research, and experimentation. The involvement of ATL In-Charges and Mentors of Change has been instrumental in shaping these ideas into functional working prototypes, demonstrating the power of teamwork and collaboration in fostering innovation. This initiative is more than just a competition—it is a platform for nurturing the next generation of thought leaders and changemakers. As we celebrate these achievements, we also look forward to how these innovations will evolve and contribute to the nation's broader goals of sustainable development, technological advancement, and social progress.

Preface

Ms Deepali Upadhay

Program Director, Atal Tinkering Labs

Atal Innovation Mission, NITI Aayog

Under the aegis of the Atal Innovation Mission, Atal Tinkering Labs were set up to inspire a generation of neoteric innovators and entrepreneurs in India. The underlying philosophy of ATLs has been to equip the young minds of India with all the knowledge and skills necessary to thrive in the 21st century. The idea is to allow children to explore the world of research and innovation and contribute towards national development by developing innovative and disruptive solutions to India's biggest community problems. Atal Innovation Mission has established 10,000 Atal Tinkering Labs across India. Today over 1.1 crore students in India get to learn in these ATLs.

With the tools they need to comprehend STEM principles (science, technology, engineering, and maths), students can shape ideas through practical activities. The goal of AIM is to inspire kids to innovate. The best ideas that the students and their teachers developed are presented in this Coffee Table Book. They will further become a part of the Student Innovator Program (SIP). Through SIP, our partners mentor these innovations for refining their projects, and the most promising and innovative teams go ahead with the Student Entrepreneurship Program.

Without the support of the children's parents, teachers, and mentors, this wonderful journey would not have been possible. Your unceasing efforts, mentoring, and advice have been a real motivator.

I sincerely thank Vice-Chairman of NITI Aayog, Shri Suman Bery, CEO Shri BVR Subrahmanyam and Dr. Chintan Vaishnav, the Mission Director of Atal Innovation Mission for their outstanding leadership in enabling ATL to grow into a movement that is affecting the entire country of India. I would also like to extend my heartfelt appreciation to every member of the Mission High-Level Committee (MHLC) for their enthusiastic leadership and unwavering assistance to the Atal Tinkering Labs. Lastly, I would like to express my gratitude to my team, without whose dedication, perseverance, and imagination this book would never have been published. Mr. Shubham Gupta, Mr. Prateek Deshmukh, Ms Ridhi Jain and Mr. Suman Pandit have been of great assistance in the writing and editing of this work. My particular gratitude and commendation to them.


Theme:
safety

ATL UID - 17658788

ATL MARATHON 2022 REGISTRATION ID - 111623744

NAME OF THE SCHOOL - Devangar Girls Higher Secondary School, Aruppukottai

NAME OF THE TEAM - Flying Fighters

TEAM MEMBERS - S. Rajeshwari, K. Kavinaya and S.Geethapriya

ATL IN-CHARGE - K. Indhumathi and S. Manonmani

INNOVATION TITLE - Conslacing System

DISTRICT- Aruppukottai

STATE - Tamilnadu

The rainy season was both a blessing and a curse. While the rains brought much-needed water for crops and filled the local reservoir, they posed a significant danger. Broken transformer wires frequently electrified puddles and flooded streets, leading to several accidents and even fatalities over the years. A group of students witnessed an incident involving a 15-year-old girl and her mother that highlighted the critical need for a preventive tool to detect and mitigate the risk of electricity in standing water. To combat this, a dynamic trio, S. Rajeshwari, K. Kavinaya, and S. Geethapriya, from Devangar Girls Higher Secondary School, Aruppukottai, passionate about electronics and public safety, decided to tackle this issue head-on. Their Innovation, aptly named "Conslacing System," aimed to protect their community from the hidden hazards of electrified water. They worked on this innovation step by step.

Firstly, they created a public warning system. They installed visible and audible alerts at every transformer in the city. These alerts included bright, flashing lights and loud alarms that would activate if a transformer wire broke. This system was designed to notify the public immediately of any potential electrical hazards in the area. The students collaborated with local authorities and engineers to ensure these alerts were effective and unobtrusive, causing minimal disruption during normal conditions but impossible to ignore in emergencies.

Next, the students focused on creating a centralized monitoring system at the Electricity Board (EB) office. They equipped each transformer with sensors and assigned unique IDs to them. When a transformer experienced a fault or shut down, the corresponding ID would trigger distinctive lights and buzzers at the EB office. Finally, the students developed an immediate response protocol. They conducted training sessions for EB workers and taught them how to swiftly respond to alerts.

Leveraging the appreciation from the EB office, S. Rajeshwari, K. Kavinaya and S. Geethapriya, envisioned their solution to have widespread applicability. They proposed solutions such as building a strong foundation for customer outreach by employing strategic approaches. The resources offered by Atal Tinkering Labs, coupled with the invaluable guidance and support provided by their ATL In-charge, K. Indumathi, and S. Manonmani were pivotal in transforming their ideas into tangible solutions.

ATL UID - 19891609
ATL MARATHON 2022 REGISTRATION ID- 111359654
NAME OF THE SCHOOL - Ansar English School, Perumpilavua
NAME OF THE TEAM - Soul Celestia
TEAM MEMBERS - Nashmiya Ashraf, Fathima Afreen Kariyat, Aysha Misna
ATL IN-CHARGE - Ms. Sukaina Abubakar
INNOVATION TITLE - Smart Safe
DISTRICT - Perumpilavu
STATE - Kerala

Recognizing the ubiquity of smartphones, Nashmiya Ashraf, Fathima Afreen Kariyat, and Aysha Misna from Ansar English School, Perumpilavu, developed Smart Safe, an advanced locker system for secure storage. Guided by Ms. Sukaina Abubakar, the team created this innovation after a friend's theft highlighted the limitations of traditional lockers.

Smart Safe uses mobile hotspot connectivity for identity verification, linking the locker's access to the user's mobile device. This dynamic security method prevents unauthorized access by requiring proximity to the authenticated mobile hotspot and operates without an internet connection.

The locker integrates a mobile app for biometric authentication, adding a layer of security with fingerprint or facial recognition. It also secures digital documents using blockchain technology, ensuring tamper-proof storage. Nodemcu enables wireless communication, triggering alerts and buzzers for unauthorized attempts.

This group also adopted some key strategies for scaling Smart Safe including expanding into public and commercial spaces, integrating with smart city initiatives, partnering with security firms, and adapting to international markets.

Smart Safe, a compact chip installable in any locker, merges modern technology with user-centric design, setting a new standard for secure storage solutions. Nashmiya, Fathima, and Aysha's project exemplifies the future of personal storage by addressing current security challenges and anticipating tech-savvy users' needs.

ATL UID - 28429691
ATL MARATHON 2022 REGISTRATION ID- 1111367984
NAME OF THE SCHOOL - Amrita Vidyalayam Puthhiyakavu
NAME OF THE TEAM - Master Brain
TEAM MEMBERS - Nivedh R Praveen, Akash S, Vinayak B
ATL IN-CHARGE - Ms. Deepika Praveen
INNOVATION TITLE - Ampoule Opener
STATE - Kerala

Three enterprising students, Nivedh R Praveen, Akash S, and Vinayak B from Amrita Vidyalayam Puthhiyakavu, have developed an innovative solution to a critical problem in operation theaters: the ampoule opener. Under the guidance of their Atal Tinkering Lab in- charge, Ms. Deepika Praveen, they created a device that enhances safety and efficiency for healthcare professionals.

The idea stemmed from a conversation with a doctor friend of their mentor, who highlighted the frequent breakage of ampoules in operation theaters. This not only results in financial losses but also poses a risk of injury. To understand the issue better, the team visited hospitals and found that 90.3% of nurses reported injuries while opening ampoules, with 36.7% experiencing repeated incidents. These insights drove the students to design a product that could mitigate these risks.

Their ampoule opener features a cylindrical design that encases the ampoule, protecting nurses from potential injuries. A built-in blade ensures a clean break, minimizing the risk of glass particles contaminating the medicine. The device also includes an adjustable spring mechanism to accommodate ampoules of different heights and a sponge insert for a snug fit, preventing movement during the cutting process.

The impact of this device could be significant. Reducing the incidence of injuries among healthcare professionals promotes a safer working environment and lowers healthcare costs associated with treating such injuries. Additionally, it preserves the integrity of medicines by preventing contamination and improving patient treatment outcomes.

The students have ambitious plans to scale up their innovation. They aim to form partnerships with healthcare institutions, conduct training sessions for professionals, and optimize production costs through bulk manufacturing. By integrating their device with medical supply chains, they hope to reach a wider market and make a meaningful difference in the healthcare industry.

ATL UID - 69fc2368
ATL MARATHON 2022 REGISTRATION ID- 111626984
NAME OF THE SCHOOL - DAV Model School, IIT Kharagpur
NAME OF THE TEAM - Technologeeks
TEAM MEMBERS - Devadeep Misra and Shreyan Paul
ATL IN-CHARGE - G Lily Jebamalar
INNOVATION TITLE - Shock Alarm Band
STATE - West Bengal

According to a report by the Times of India, electrocution claims nearly 30 lives in India every day and accidents involving electrical equipment and installations are often due to faulty appliances or improper protective gear, particularly affecting electricians handling power grids and high-voltage wires, as well as novice operators after reading this report a group of three students, recognized the urgent need for a user-friendly, contactless device to detect electrical shocks swiftly therefore, Devadeep Misra and Shreyan Paul, students from DAV Model School, IIT Kharagpur, invented the Shock Alarm Band.

The Shock Alarm Band is a wearable device designed to prevent electrocution mishaps. It alerts users to the presence of exposed wires that could lead to severe accidents. The band's core component is an antenna that receives electromagnetic signals from electric currents in exposed wires. These signals pass through three stages of transistor amplification, ultimately activating an LED and a buzzer if the signal is strong enough. The LED glows, and the buzzer beeps, providing a clear warning to the user.

The device operates on the principle of the Darlington pair, which uses a small current to control a larger load, enhancing current gain. To operate this you just need to power on the device, place your wrist near the suspected exposed electric wire and the LED gloves and the buzzer beeps if the wire is live.

They received guidance and support from their ATL in - charge G Lily Jebamalar. Devadeep Misra and Shreyan Paul's innovative Shock Alarm Band represents a significant leap forward in preventing electrical accidents, potentially saving numerous lives across India.

ATL UID - 31407551
ATL MARATHON 2022 REGISTRATION ID- 111440254
NAME OF THE SCHOOL - ZPHS Dharmavaram
NAME OF THE TEAM - ATL DVM 2022 - 23
TEAM MEMBERS - V Yasaswini, M Madhuri and V Varaprasad
ATL IN-CHARGE - Mr. V Ramesh
INNOVATION TITLE - Paper and plastic free packaging
STATE - Andhra Pradesh

In a remarkable feat of innovation and environmental consciousness, V Yasaswini, M Madhuri, and V Varaprasad from ZPHS Dharmavaram have developed a groundbreaking alternative to traditional paper and plastic packaging. With guidance from their ATL in-charge, Mr. V Ramesh, these young minds created sustainable packaging solutions using banana plant stems, an abundant bio-waste.

Yasaswini shared her inspiration, saying, "In my 8th class, I participated in a painting competition on pollution. Researching the topic, I was shocked to learn that plastic could surpass fish in the oceans by 2030. This, coupled with the rapid decline in forest areas due to paper production, highlighted the urgent need for alternatives. I initially developed a digital paper app on the MIT App Inventor platform to reduce paper usage. Later, I focused on replacing paper and plastic in the packaging industry with bio-waste."

Their innovative solution involves creating corrugated sheets from banana plant stems, which are strong, lightweight, durable, and flexible. Unlike traditional methods, which often leave banana stems as agricultural waste, this novel technology converts them into valuable materials for packaging boxes and cardboard sheets.

The potential impact of this innovation is significant. As per the secondary research by the team, the Indian corrugated box market, valued at $6.5 billion in 2022, is expected to nearly double by 2028. The banana bio-fiber corrugated boxes are not only more affordable, costing 30% less than paper-based counterparts, but also offer a sustainable alternative that addresses both deforestation and plastic pollution.

Their venture, Matty Se, was incubated in the Andhra Pradesh Innovation Society in 2023 and showcased at the National Technology Day exhibition in New Delhi. These young innovators are poised to make a substantial impact on the packaging industry and the environment.

ATL UID - 10515180
ATL MARATHON 2022 REGISTRATION ID- 111513494
NAME OF THE SCHOOL - Jaigopal Garodia Hindu Vidyalaya Matric Hr. Sec School
NAME OF THE TEAM - Nambi Narayanan
TEAM MEMBERS - R.Varsha, T.N.Ananya and N.Roshini
ATL IN-CHARGE - Mrs.Vinethra
INNOVATION TITLE - Arduino Based Child Rescue System from Borewell
STATE - Tamil Nadu

The frequent news of children falling into deep bore wells and the resulting anguish for their parents deeply impacted R. Varsha, T. N. Ananya, and N. Roshini from Jaigopal Garodia Hindu Vidyalaya Matric HR. Sec. School. Driven by these tragedies, they sought a solution, leading to their innovative project, "The Arduino-Based Child Rescue System from Borewell."

This system uses simple components from the Atal Tinkering Lab (ATL), including an Arduino board, a touch sensor, a DC motor, and a servo-controlled hand mechanism, to create a safe and child-friendly borewell rescue operation. The working model features a touch sensor attached to the bottom of a hand mechanism, which is lowered into the bore well using a DC motor. Upon detecting a child, the sensor triggers a buzzer, alerting rescuers immediately, while the motor halts to prevent further descent. The servo-controlled hand mechanism then carefully grasps the child, and the motor reverses its direction, lifting the child out safely.

This practical and technological solution ensures wide adoption and easy maintenance. The system aims to minimize risks and provide a swift, effective response in such emergencies, offering peace of mind to communities and caregivers. To achieve mass production and affordability, the team plans to partner with companies for manufacturing and distribution. Enhancements such as advanced sensors and wireless communication could improve effectiveness. Training sessions and awareness campaigns will educate rescue teams and the public, while continuous research and development, along with collaborations with tech companies and safety organizations, will drive further improvements.

Mrs. Vinethra, the ATL incharge, emphasizes, "This innovation addresses a critical safety issue and showcases the potential of young minds to create impactful solutions." Their project exemplifies how blending technology with compassion can lead to life-saving innovations.

ATL UID - 102010519
ATL MARATHON 2022 REGISTRATION ID - 111680574
NAME OF THE SCHOOL - P.A.C.R. Ammani Ammal's Girls' Higher Secondary School
NAME OF THE TEAM - Spice girls
TEAM MEMBERS - M Darani, K Jesica Sherin
ATL IN-CHARGE - R Saranya
INNOVATION TITLE - Safety System In Industries And Helmet
STATE - Tamil Nadu

In the bustling industrial landscape, where natural hazards and unforeseen accidents pose constant threats, two visionary students from P.A.C.R. Ammani Ammal's Girls' Higher Secondary School, Tamilnadu have emerged as pioneers of change. M Darani and K Jesica Sherin, guided by R Saranya, have developed a groundbreaking Safety System for Industries and Helmets, setting new standards for worker safety and operational resilience.

Natural hazards such as floods, landslides, and gas explosions cast long shadows over industries like mining and construction, jeopardizing both lives and livelihoods. The moral imperative to protect workers and surrounding communities from such dangers demands innovative solutions and unwavering commitment.

Darani and Jesica's innovative system ensures rigorous adherence to safety protocols by monitoring helmet usage in real-time. Immediate alerts are triggered if a worker removes their helmet, ensuring prompt reinforcement of safe practices. Additionally, the system includes an integrated emergency button, allowing swift responses to accidents or emergencies. Notifications enable managers and rescue teams to intervene rapidly, potentially saving lives.

The system also features GPS tracking, facilitating precise identification of worker locations during rescue operations. This capability significantly reduces response times and enhances the overall safety and well-being of the workforce.

By fostering a culture of safety awareness and leveraging advanced technology, this innovative system prioritizes worker protection and operational continuity. Darani and Jesica's invention stands at the forefront of industry standards, safeguarding workers' welfare and ensuring a safer work environment. Their achievement underscores the importance of innovative solutions in addressing industrial safety challenges.

ATL UID - 6c038225

ATL MARATHON 2022 REGISTRATION ID - 111394554

NAME OF THE SCHOOL - Basaveshwara International Public School (BIPS), Vidyagiri, Bagalkot

NAME OF THE TEAM - ShriTech Solutions

TEAM MEMBERS - Abhay S. Pharsiyawar, Akshat S. Bharamagoudar, Sangamesh M. Shettar

ATL IN-CHARGE - Tanuja Bai J. M.

INNOVATION TITLE - Bridge Safety Management System (BSMS) - Safer Bridges with State-of-the-Art Solutions

STATE - Karnataka

Inspired by the haunting memory of the Morbi bridge collapse in Gujarat, which tragically claimed over 140 lives, Abhay S. Pharsiyawar, Akshat S. Bharamagoudar, and Sangamesh M. Shettar from Basaveshwara International Public School (BIPS), Vidyagiri, Bagalkote, Karnataka sought to prevent such disasters from ever happening again. Guided by ATL incharge Tanuja Bai J. M., they developed the Bridge Safety Management System (BSMS), a revolutionary solution designed to safeguard the integrity and safety of bridges.

The BSMS employs sensors and automatic gates to regulate the flow of people and vehicles, ensuring uninterrupted and safe bridge operations. Integrating IoT and AI, the system provides real-time monitoring and predictive maintenance. Key features include automated gates to prevent overloading, weight sensors for precise load data, and a centralized control system for real-time visibility and quick emergency response. Surveillance is enhanced by CCTV cameras for incident investigation and security monitoring.

BSMS significantly improves infrastructure resilience, reducing bridge collapse risks, safeguarding lives and assets, and minimizing transportation disruptions. To scale up, the team plans to extend BSMS to at-risk regions, integrate with smart city projects, and develop mobile applications for instant notifications. Partnerships with governmental bodies and private companies, along with continuous R&D and operator training, will enhance the system's effectiveness and reach.

ATL UID - 216614264
ATL MARATHON 2022 REGISTRATION ID - 111329144
NAME OF THE SCHOOL - Appar Higher Secondary School
NAME OF THE TEAM - DPS Girls
TEAM MEMBERS - Dharani K, Pradeepa S and Sivasakthi S
ATL IN-CHARGE - Seenivasan R
INNOVATION TITLE - Nonstop Ambulance
STATE - Tamil Nadu

In the heart of bustling traffic, where every second counts, three young innovators from Appar Higher Secondary School, Tamilnadu have developed a groundbreaking solution to save lives. Dharani K, Pradeepa S, and Sivasakthi S, under the guidance of ATL in-charge Seenivasan R, have invented the Nonstop Ambulance, designed to eliminate critical delays faced by emergency vehicles at traffic signals.

"Watching an ambulance wait for signal clearance made me realize how many lives are at risk," Dharani shared. This observation inspired the creation of a system ensuring ambulances and other emergency vehicles can navigate traffic without stopping at red lights.

Human life is invaluable, and every moment is crucial during emergencies. Traffic congestion often hinders the timely arrival of ambulances and fire-fighting vehicles. To address this, Pradeepa, Dharani, and Sivasakthi designed a Nonstop Ambulance system aimed at eliminating these delays.

The prototype includes a signal simulation and an ambulance detection system. An RFID reader installed 300 meters ahead of traffic signals detects emergency vehicles and changes the signal from red to green, allowing seamless passage. This proactive measure also alerts other vehicles to the approaching emergency.

Components such as the RFID reader/writer MFRC-522, Arduino UNO, signal lights, and wiring were meticulously integrated. The result is an efficient solution ensuring emergency vehicles can perform their life-saving missions without interruption.

The Nonstop Ambulance exemplifies the brilliance and humanitarian spirit of Pradeepa, Dharani, and Sivasakthi, promising to make a significant impact by ensuring help reaches those in need without unnecessary delays.

ATL UID - 4f8112431
ATL MARATHON 2022 REGISTRATION ID - 111333944
NAME OF THE SCHOOL - DPS, Greater Faridabad
NAME OF THE TEAM - Fog Fighter Technology
TEAM MEMBERS - Pritish Khatri, Aadit Singla and Suyash Srivastava
ATL IN-CHARGE - Ms Geetika Mehta
INNOVATION TITLE - Fog Fighter
STATE - Haryana

In a fog-laden dawn where the world seems wrapped in a blanket of mystery, the perils of driving become all too real. Inspired by the urgent need to reduce accidents caused by poor visibility, Pritish Khatri, Aadit Singla, and Suyash Srivastava from DPS Greater Faridabad have developed a groundbreaking solution: the Fog Fighter. Under the expert guidance of ATL in charge Ms. Geetika Mehta, these young innovators are leading the charge for safer roads.

The Fog Fighter uses AI and IoT to analyze real-time camera images, adjusting vehicle parameters based on fog density. In dense fog, it reduces speed and optimizes fog light intensity. In lighter fog, it allows moderate speed increases while adjusting lights. In clear weather, it enhances speed and turns off fog lights to save energy.

This innovative system integrates Arduino hardware and PictoBlox software for precise control, prioritizing driver safety. The Fog Fighter aims to improve safety, efficiency, and sustainability.

For scaling up this innovation the team is also planning to include integrating Fog Fighter with speed governors, partnering with automotive manufacturers, and wants to collaborate with government bodies for regulatory support because public awareness campaigns will educate drivers about its benefits, and align with international safety standards will facilitate global market entry.

Pritish, Aadit, and Suyash's Fog Fighter is a groundbreaking solution, that aims to reduce accidents and ensure safer journeys during foggy weather.

ATL UID - 14462480
ATL MARATHON 2022 REGISTRATION ID - 111500694
NAME OF THE SCHOOL - Vijaya Vittala Vidyashala
NAME OF THE TEAM - Safe Alarm
TEAM MEMBERS - Ankith K, Varun Patel U S and Mayur K S
ATL IN-CHARGE - Ms. Vidyashree
INNOVATION TITLE - Safety Beam
STATE - Delhi

In a bid to combat the rising threat of thefts, Ankith K, Varun Patel U S, and Mayur K S from Vijaya Vittala Vidyashala, Delhi have developed Safety Beam, an innovative solution that promises to revolutionize security for cash drawers and jewelry displays.

Motivated by a local jewelry shop robbery, the trio, under the expert guidance of ATL in charge Ms. Vidyashree, sought to create a device that could prevent such incidents. Safety Beam features a two-part cash drawer system: an upper compartment with a secure lock and a hidden lower compartment for emergencies. When an authorized card is used, the lock opens and displays a confirmation message on an LCD screen. If a wrong card is inserted or tampering is detected, the cash drops into a secure basement box, ensuring the valuables remain safe.

They have designed it in a versatile way, making it suitable for various applications including jewelry shops, malls, and banks. With features like customizable designs and advanced mechanical systems, Safety Beam offers a robust, adaptable solution to safeguard cash and jewelry from theft.

Ankith, Varun, and Mayur's invention stands as a testament to their ingenuity and commitment to enhancing security in everyday environments.

ATL UID - 15663639
ATL MARATHON 2022 REGISTRATION ID - 111339824
NAME OF THE SCHOOL - Kendriya Vidyalaya No.1, Bokaro Steel City
NAME OF THE TEAM - Route Rangers
TEAM MEMBERS - Mantresh and Shivam Kumar
ATL IN-CHARGE - Mr. Girijesh Kumar
INNOVATION TITLE - Direction Barrier Alert System
STATE - Jharkhand

In a commendable effort to address road safety, Mantresh and Shivam Kumar from Kendriya Vidyalaya No.1, Bokaro Steel City, Jharkhand, have developed an innovative solution named the "Directional Barrier Alert System." Under the guidance and support of ATL in-charge Mr. Girijesh Kumar, these young minds have created a project aimed at preventing accidents caused by vehicles entering the wrong lane.

As per the secondary research by the students, road safety remains a significant concern in India, with around 4 lakh road accidents recorded in 2022 and 1,60,000 fatalities reported. While various initiatives are in place to reduce these numbers, Mantresh and Shivam's solution offers a novel approach to enhancing road safety.

The Directional Barrier Alert System uses an Arduino Uno, a Servo motor, and an ultrasonic sensor to detect and respond to vehicles driving in the wrong lane. The ultrasonic sensor is strategically placed on the side of the road to monitor traffic. When a vehicle is detected entering the wrong lane, the system activates a barrier 200 meters ahead, blocking the vehicle's path and compelling the driver to return to the correct lane. Additionally, a blinking red light and alarm alert nearby drivers, further enhancing safety.

This innovative system not only forces drivers to correct their lanes but also raises awareness among other motorists, reducing the potential for accidents. By integrating technology with road safety measures, Mantresh and Shivam have demonstrated how practical solutions can address real-world problems and save lives.

The successful implementation of the Directional Barrier Alert System has the potential to significantly reduce road accidents and fatalities. However, support from industries and additional efforts are required for widespread adoption. This project exemplifies the impact of youthful innovation and the importance of technological advancements in improving road safety for all.

ATL UID - 31414842
ATL MARATHON 2022 REGISTRATION ID - 31414842
NAME OF THE SCHOOL - PM SHRI KENDRIYA VIDYALAYA JAMALPUR
NAME OF THE TEAM - Transport developer
TEAM MEMBERS - Suraj Kumar,Mayank Patel,Rushil Kumar
ATL IN-CHARGE - Rupesh Roshan
INNOVATION TITLE - Transport developer
STATE - BIHAR

Suraj Kumar, Mayank Patel, and Rushil Kumar were driven to create their groundbreaking safety solutions by observing frequent accidents at zebra crossings, the inefficient use of street lighting, and the lack of adequate warning systems at railway tracks. Their concern for public safety and their desire to address these pressing issues motivated them to develop a project that would improve road safety, enhance energy efficiency, and prevent accidents caused by signal failures. Their goal was to devise a solution that could protect lives and optimize resources effectively.

Utilizing an IR sensor, the system detects the presence of vehicles on the road. When a vehicle is detected, the street lights automatically illuminate, and when no vehicle is present, the lights switch off. This approach significantly reduces energy wastage and optimizes street lighting based on real-time needs.

To address the issue of vehicles jumping red lights at zebra crossings, the project incorporates a servo motor, Arduino, and two barriers. The barriers control the flow of traffic and pedestrians, allowing either vehicles or walkers to proceed safely. This mechanism helps manage pedestrian and vehicle movement more effectively, reducing the risk of accidents.

By leveraging components such as Arduino, ultrasonic sensors, servo motors, LED lights, and RFID sensors from their school's ATL lab, Suraj Kumar, Mayank Patel, and Rushil Kumar have developed a multifaceted solution that addresses critical safety and efficiency issues. Their project not only aims to protect lives but also to promote smarter and more sustainable use of resources.

Scaling up this project could have a transformative impact on public safety and resource management. By implementing their solutions on a larger scale, cities and towns could see a reduction in accidents, optimized street lighting, and improved railway safety. The technology's adaptability allows it to be customized for various environments, from urban areas to rural settings. As the project expands, further refinement and integration with advanced technologies could enhance its effectiveness and affordability, leading to widespread adoption and significant improvements in road and railway safety.

ATL UID - 24357659
ATL MARATHON 2022 REGISTRATION ID - 111385564
NAME OF THE SCHOOL - Telangana Model School Imampet
NAME OF THE TEAM - TSMS Rainbow
TEAM MEMBERS - Likhitha and Harini
ATL IN-CHARGE - Mr Lingiah
INNOVATION TITLE - Drainage cleaning device
STATE - Telangana

In a remarkable leap forward for public health and sanitation, Likhitha and Harini from Telangana Model School, Imampet, have invented a groundbreaking drainage cleaning device. This innovation, developed under the expert guidance and support of Mr. Lingiah, the Atal Tinkering Lab (ATL) in charge, promises to revolutionize how we approach underground drainage maintenance, safeguarding the lives of countless sanitation workers.

Sanitation workers often face severe health hazards, sometimes even life-threatening, when cleaning underground drainage pipelines. The harsh and toxic environment within these pipes exposes them to dangerous pathogens and hazardous materials. Recognizing this dire issue, Likhitha and Harini set out to create a solution to eliminate the need for human entry into these difficult conditions.

The students' innovative device is designed to save the lives of municipal workers, sanitation workers, and plumbers by preventing their entry into underground drainage pipelines for cleaning. Utilizing a combination of trained personnel, a power supply, DC motors, a gripper, a cutting tool, and a scopic camera, the device efficiently monitors and addresses blockages in the drainage system.

The device operates on a principle akin to the human digestive system, breaking down large chunks of waste into smaller, more manageable pieces. This automated process includes monitoring blockages, cutting obstructive waste, and plucking the waste with a gripper, all while providing real-time visual feedback via the scopic camera.

This innovative solution is not only beneficial for household drainages but also holds immense potential for schools, towns, and municipalities. By replacing the need for manual cleaning, it ensures a safer and more efficient maintenance process.

Likhitha and Harini's invention stands as a testament to the power of youthful innovation and the transformative impact of dedicated mentorship. Their work is poised to make a significant difference in public sanitation and worker safety, exemplifying the potential of the next generation to solve critical societal challenges.

Theme: natural disaster

ATL UID - 43a06887
ATL MARATHON 2022 REGISTRATION ID - 111758764
NAME OF THE SCHOOL - Delhi Public School, Meerut Road, Gaziabad
NAME OF THE TEAM - Disruptive Doers, Thinkerpreneurs
TEAM MEMBERS - Shivansh Kulshrestha, Parth Garg and Parjanya Panda
ATL IN-CHARGE - Ms. Anita Kachroo
INNOVATION TITLE - Distend Deck
STATE - Uttar Pradesh

A team of enterprising students from Delhi Public School Meerut Road, Ghaziabad, comprising Shivansh Kulshrestha, Parth Garg, and Parjanya Panda, have developed an innovative solution to combat natural disasters. Their creation, the Distend Deck, promises to revolutionize disaster preparedness and response, particularly in flood-prone areas.

The trio was motivated to work on the Distend Deck project due to the significant threat that flood-related disasters pose to life and property, Witnessing the devastating impact of floods on communities and the frequent loss of life due to inadequate warning systems and escape mechanisms inspired them to create a reliable, automated solution.

The Distend Deck is a revolutionary sensor-based smart device designed to mitigate flood-related disasters and enhance overall household safety. The device is ingeniously engineered to attach to beds, serving as both a vigilant sentinel and a life-saving mechanism. Its primary function is to detect rising water levels, but it also addresses safety concerns related to earthquakes and gas leaks, making it a comprehensive disaster mitigation tool. Upon detecting an imminent flood, the Distend Deck triggers a loud alarm to alert occupants. Simultaneously, it automatically inflates the bed into a raft, providing a quick and effective means of escape. This automated response is crucial, as it ensures swift and precise action even when occupants are unaware or unable to react immediately. The transformation of a bed into a raft is particularly innovative.

In addition to flood detection, the Distend Deck is equipped with sensors that can detect seismic activity and gas leaks. In the event of an earthquake, the device can alert occupants, providing them with critical time to seek shelter. Similarly, if a gas leak is detected, the alarm system warns occupants, helping to prevent potential poisoning or explosions.

Since their prototype had been tested and worked well, they decided to submit it to the ATL Marathon 2022. It was a great moment of satisfaction when their project was selected in the top 100!

This innovative project was undertaken under the guidance of Ms. Anita Kachroo, the Atal Tinkering Lab in charge. Her mentorship and support played a crucial role in the successful development of the Distend Deck.

Theme: Education

ATL UID - 950b1248
ATL MARATHON 2022 REGISTRATION ID-111388284
NAME OF THE SCHOOL - Amity International School, Sector - 6, Vasundhara
NAME OF THE TEAM - Blazing Duo
TEAM MEMBERS - Kapeesh Jain and Naysha Singh
ATL IN-CHARGE - Sonia Kalra
INNOVATION TITLE - Ghar Ghar Ki Pathshala
STATE - Uttar Pradesh

Kapeesh Jain and Naysha Singh, two young students from Amity International School, have unveiled their groundbreaking initiative, "Ghar Ghar Ki Pathshala". This initiative aimed to revolutionize access to education for underprivileged children during the pandemic and beyond.

During the stringent lockdowns of the pandemic, while most students adapted to online learning seamlessly, Kapeesh and Naysha noticed a stark contrast in the experience of their maid's son. Initially gleeful, the young boy soon grew despondent due to the lack of academic support at home and in his school. This poignant observation ignited a spark within Kapeesh and Naysha to do something meaningful to support children like him.

Their brainchild, "Ghar Ghar Ki Pathshala", is a free educational website aimed at providing comprehensive learning resources tailored for students from economically disadvantaged backgrounds. Initially focusing on subjects crucial for secondary education—Science, Mathematics, Social Studies, English, and Hindi—the platform intends to expand to primary and senior secondary levels. It promises a curriculum designed not just for learning but to foster practical skills and vocational education, such as Financial Literacy and Artificial Intelligence.

Unlike many educational apps and websites that come with a price tag, "Ghar Ghar Ki Pathshala" is completely free to use. It features backup courses ensuring that every child can learn at their own pace without any financial burden. Moreover, the initiative plans to distribute donated books from previous years to further support learning among children without access to physical educational materials. They envision partnerships with local authorities and NGOs to maximize outreach and support.

In a world where educational disparities have widened, "Ghar Ghar Ki Pathshala" stands as a beacon of hope. It not only addresses immediate educational needs but also empowers children with the skills necessary for a brighter future. Kapeesh and Naysha's dedication to inclusivity and empowerment through education serves as an inspiring example for young innovators worldwide.

ATL UID - ccd44504
ATL MARATHON 2022 REGISTRATION ID - 111621004
NAME OF THE SCHOOL - Amrita Vidyalam Thalassery
NAME OF THE TEAM - Tactic Techs
TEAM MEMBERS - Nandana Subhash and Vaishnavi Prabha
ATL IN-CHARGE - Ms. Nimisha AP
INNOVATION TITLE - Breaking the Gap Between Farmers and Kids
STATE - Kerala

Nandana Subhash and Vaishnavi Prabha from Amrita Vidyalam Thalassery, Kerala, have launched a pioneering initiative, "Breaking the Gap Between Farmers and Kids," under the guidance of ATL in-charge Ms. Nimisha AP. Their innovative platform, Littlefarmers.com, aims to connect farmers and children through immersive, hands-on farm experiences.

Littlefarmers.com is designed to bring youngsters face-to-face with the world of agriculture, offering them real-life insights into farming practices. By engaging directly with the farming process, children develop a deeper appreciation for the work that goes into producing their food. Meanwhile, farmers benefit from increased understanding and support from the younger generation, fostering a more informed and supportive community.

This unique platform not only enhances educational opportunities but also supports farmers by promoting sustainable practices and improving agricultural productivity. Littlefarmers.com bridges the gap between two crucial parts of society, enriching the lives of both farmers and children.

In essence, Littlefarmers.com is a step toward building a more connected and empathetic world, where future generations can appreciate the essential role of farming and contribute to a more sustainable and equitable society.

Theme: Health

ATL UID - 19891609
ATL MARATHON 2022 REGISTRATION ID - 111358304
NAME OF THE SCHOOL - Ansar English School, Perumpilavu
NAME OF THE TEAM - The Solution Squad
TEAM MEMBERS - Hisham Hamza, Ajmal Abdul Rasheed, Anas V A
ATL IN-CHARGE - Ms.Sukaina Abubakar
INNOVATION TITLE - CareTaker Glove
STATE - Kerala

In a remarkable fusion of compassion and technology, Hisham Hamza, Ajmal Abdul Rasheed, and Anas V A from Ansar English School, Perumpilavu have unveiled their groundbreaking invention 'The CareTaker Glove'. Designed to enhance the quality of life for bedridden and paraplegic patients, this innovation promises to revolutionize how individuals with limited mobility communicate their needs.

In a world where accidents and medical conditions often leave individuals bedridden or paralyzed, the emotional toll of dependency on caregivers can be overwhelming. Hisham, Ajmal, and Anas were deeply moved by witnessing firsthand the challenges faced by such patients. They recognized the profound need for a solution that not only aids in physical care but also preserves the dignity and independence of the patients.

The CareTaker Glove operates on a simple yet ingenious principle: a patient can summon assistance by bending a finger. This action triggers a discreet buzzer that alerts caregivers, ensuring prompt attention to the patient's needs without requiring significant physical exertion. The glove's sensitivity can be adjusted to accommodate individual capabilities and minimize false alarms.

Understanding the importance of hygiene and comfort, the glove is crafted from hypoallergenic materials that are easy to clean and gentle on the skin. Its ergonomic design ensures a secure yet comfortable fit, allowing patients to wear it for extended periods without discomfort.

Looking ahead, the team envisions several enhancements to further elevate the CareTaker Glove's functionality, and connecting the glove to a GSM module could enable SMS alerts to caregivers and family members during emergencies, enhancing safety and responsiveness. The potential integration of a smartphone app holds promise for advanced data collection and analysis such an app could predict when specific needs are likely to arise, notifying caregivers proactively.

Hisham, Ajmal, and Anas embody a spirit of empathy and innovation with the CareTaker Glove, offering not just a product but a lifeline for those in need. Mentor Sukaina Abubakar provided invaluable guidance to Hisham Hamza, Ajmal Abdul Rasheed, and Anas V A, helping them refine the CareTaker Glove to ensure it truly meets the nuanced needs of bedridden and paraplegic patients.

The CareTaker Glove is not merely a testament to technological advancement but a beacon of hope for a more inclusive and caring society, where every individual's dignity and well-being are prioritized.

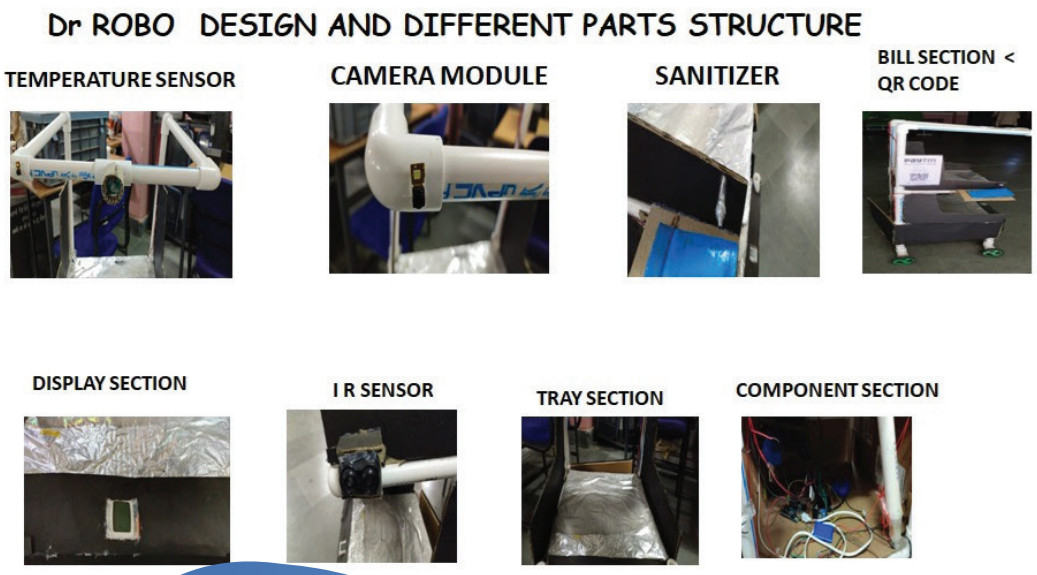
ATL UID - 23146248
ATL MARATHON 2022 REGISTRATION ID - 111723564
NAME OF THE SCHOOL - Kongu Matriculation Higher Secondary School
NAME OF THE TEAM - Powerful Girls
TEAM MEMBERS - B Dharshini and R Hemavardhini
ATL IN-CHARGE - N Manochithra
INNOVATION TITLE - Breathe Free
STATE - Tamil Nadu

According to a recent World Health Organization (WHO) report, air pollution is the single largest environmental health risk globally, responsible for nearly 7 million fatalities in 2022. The WHO also highlights the strong connection between air pollution exposure and respiratory illnesses, cancer, and cardiovascular disorders. To combat this problem B Dharshini and R Hemavardhini from Kongu Matriculation Higher Secondary School have developed 'Breathe Free', an innovative air purifier, to address the severe air pollution impacting their hometown, Tiruppur. Supported by ATL in charge N Manochithra, this project aims to provide cleaner air and alleviate respiratory health issues caused by pollution.

Tiruppur, known for its bustling garment factories, suffers from significant air pollution due to industrial emissions and vehicular exhaust. Dharshini and Hemavardhini were motivated to create 'Breathe Free' after witnessing their father's severe breathing problems caused by the polluted air.

'Breathe Free' is a solar-powered air purifier divided into two sections. The first section features a multi-layer filtration system. HEPA Filter captures pollen, dust mites, and tobacco smoke, The Carbon Filter and the second section include a mobile bot that allows the purifier to move throughout the room, ensuring comprehensive air cleaning. This voice-controlled device is especially beneficial for the handicapped and elderly. Made from biodegradable and reusable materials, 'Breathe Free' is chemical-free and ozone-free.

'Breathe Free' promises a cleaner, healthier environment, transforming how we combat air pollution.



PHYSICAL STRUCTURE OF DR ROBO

ATL UID - cbd03014
ATL MARATHON 2022 REGISTRATION ID - 111183144
NAME OF THE SCHOOL - Swami Atmanand Govt Multipurpose Hr Sec School
NAME OF THE TEAM - Dr Kalam Science Club
TEAM MEMBERS - Tarun Mishra, Atulya Anand and Mohnish Dhruv
ATL IN-CHARGE - Dr Dhananjay Pandey
INNOVATION TITLE - Dr Robo
STATE - Chhattisgarh

During the COVID-19 pandemic, the world witnessed the invaluable role of healthcare professionals and the dire risks they faced. Motivated by the loss of doctors who are truly national treasures, three students from Swami Atmanand Govt Multipurpose Hr Sec School—Tarun Maitry, Pankaj Kewat, and Mohnish Dhruv—developed an innovative solution -

Dr Robo with the support and guidance of their ATL in-charge Dr. Dhananjay Pandey, this project aims to protect doctors from communicable diseases during patient diagnosis and care.

Dr Robo is a cutting-edge device designed to operate remotely, allowing doctors to interact with patients from a safe distance of at least 10 meters using electronic gadgets. It is equipped to take patient vitals, thus minimizing direct contact and reducing the risk of infection for medical professionals.

The primary objective of Dr Robo is to support doctors working in high-risk areas. For doctors, it offers significant benefits by ensuring their safety from communicable diseases and alleviating the need to take vitals manually. Hospital staff also benefit as Dr Robo can deliver medicine and food to patients without direct contact, reducing the risk of spreading infections within the facility.

Patients, on the other hand, gain peace of mind knowing they are not contributing to the spread of the virus. They can communicate with medical staff and report their problems easily, without the need for physical contact, which enhances their overall sense of safety and well-being.

The potential for scaling Dr Robo into a widely-used product is substantial. It presents a valuable proposition for enhancing healthcare delivery, especially in times of pandemics or in high-risk environments. Tarun, Pankaj, and Mohnish's Dr Robo is a testament to the innovative spirit and dedication to solving real-world problems, providing a safer and more efficient healthcare experience for all.

ATL UID - c5d66899
ATL MARATHON 2022 REGISTRATION ID - 111135774
NAME OF THE SCHOOL - Lakshmipat Singhania Academy
NAME OF THE TEAM - Oushadh
TEAM MEMBERS - Vishwesh Kumar, Yuvraj Chandak, Devansh P Saraogi
ATL IN-CHARGE - Dipankar Pal
INNOVATION TITLE - Oushadh
STATE - West Bengal

Three years ago, the global impact of Covid-19 highlighted the critical need for efficient oxygen supply. Current methods, though essential, pose financial challenges with prolonged dependency and increased costs. Vishwesh Kumar, Yuvraj Chandak, and Devansh P Saraogi from Lakshmipat Singhania Academy, under the guidance of ATL incharge Mr. Dipankar Pal, have responded to this challenge with their innovative creation, 'Oushadh'.

Their invention is a groundbreaking integration of modern technology and traditional Ayurvedic medicine to address a range of health conditions more effectively. They have developed an advanced Oxygen Concentrator that not only delivers pure oxygen but also significantly enhances its therapeutic benefits by infusing it with Ayurvedic Inhalation Medicines. This unique combination boosts the oxygen's effectiveness by 70%-80%, promoting faster recovery and improving overall health outcomes.

Oushadh ensures the delivery of pure oxygen to patients, crucial for treating various respiratory conditions and improving overall well-being. Integrating traditional Ayurvedic medicinal practices, infuses the oxygen flow with specially formulated inhalation medicines known for their healing properties, which work synergistically with the oxygen to enhance its therapeutic effects. This innovative approach leads to a more efficient and speedy recovery process, benefiting patients by alleviating symptoms and promoting healing. Additionally, the solution minimizes the usage of oxygen and electricity, making it a sustainable and cost-effective option for healthcare providers and patients alike. Ayurvedic medicine is administered using syringes housed in a specially designed holder, allowing caregivers to easily adjust the dosage by rotating a dial for precise control based on the patient's specific health condition and needs.

In summary, Oushadh seamlessly blends modern medical technology with the ancient wisdom of Ayurveda, providing a holistic and efficient solution for patient care. This integration not only enhances the quality and effectiveness of oxygen therapy but also ensures a sustainable and customizable approach to healing. By leveraging the best of both worlds, Oushadh offers a path to recovery that is both scientifically advanced and deeply rooted in traditional medicinal practices. This innovation promises to improve patient outcomes, reduce costs, promote sustainable healthcare, and encourage the broader acceptance of integrative medicine.

ATL UID - 22812700
ATL MARATHON 2022 REGISTRATION ID - 111434614
NAME OF THE SCHOOL - APSWR JR College
NAME OF THE TEAM - Abdul Kalam
TEAM MEMBERS - S Anusha and Pydi Saswatha Ganga
ATL IN-CHARGE - G V Chellamma
INNOVATION TITLE - Patient Health Monitoring System
STATE - Andhra Pradesh

S. Anusha and Pydi Saswatha Ganga from APSWR School were deeply affected by the tragic loss of lives during the COVID-19 pandemic. Many people succumbed to heart-related complications and high fevers, unable to reach hospitals due to the overwhelming number of corona patients. This inspired them to create a solution to monitor vital health parameters remotely, ensuring timely medical intervention.

Under the guidance of their ATL in-charge G.V. Chellamma, they developed a Patient Health Monitoring System. This innovative device tracks essential health metrics such as heart rate and body temperature, providing real-time data to both patients and healthcare providers. The goal was to offer a lifeline to those in remote areas who might lack immediate access to medical facilities.

Their research revealed a significant gap in awareness about such monitoring systems among rural populations. They found that many people were unaware of the existence and benefits of health monitoring technology. Anusha and Ganga conducted surveys to understand the readiness of these communities to invest in such devices, considering the psychological and behavioral factors influencing their decision-making.

The Patient Health Monitoring System they designed is user-friendly and affordable, aiming to bridge the gap between rural patients and healthcare services. By empowering individuals to monitor their health at home, this system can prevent critical conditions from escalating, potentially saving countless lives.

Anusha and Ganga's invention not only addresses an urgent need highlighted by the pandemic but also fosters a culture of proactive health management in underserved areas, ensuring better health outcomes.

ATL UID - 21197221

ATL MARATHON 2022 REGISTRATION ID - 111312554

NAME OF THE SCHOOL - Bharatiya Vidya Bhavan's R K Sarda Vidya Mandir

NAME OF THE TEAM - BVB Falcons

TEAM MEMBERS - Manya Patel and Stuti Jhawar

ATL IN-CHARGE - Mr. Tej Pratap Singh

INNOVATION TITLE - TB ST Kit

STATE - Chhattisgarh

Amid the global struggle against tuberculosis (TB), Manya Patel and Stuti Jhawar from Bharatiya Vidya Bhavan's R K Sarda Vidya Mandir tackled a critical challenge: early and accessible TB detection. Under the guidance of Mr. Tej Pratap Singh, they invented the TB-ST-KIT, a groundbreaking home testing solution.

TB claims over 1,400 lives daily, often undetected until it's too late. Traditional diagnostics, like sputum microscopy and GeneXpert, are costly and time-consuming. To address this, the TB-ST-KIT offers a user-friendly, reliable, and non-invasive alternative.

Here's how it works: users place 2-3 drops of saliva into a designated hole on the strip. Within minutes, the display area indicates the results—a red color for positive, and no change for negative. This simplicity and speed make TB-ST-KIT an ideal tool for widespread use.

The key features include ease of use, rapid results, and non-invasive testing. This portable solution is perfect for remote or underserved areas, ensuring early detection and reducing the spread of TB. Additionally, it eliminates the need for medical appointments or lab visits, making TB testing more accessible and cost-effective.

To scale up this innovation, Manya and Stuti plan strategic steps: understanding health needs, securing funding, building partnerships, and empowering local health workers. They'll start with pilot programs to refine their approach, ensuring continuous data collection and community engagement.

Their vision is to revolutionize TB testing, contributing to global public health and making a significant impact in the fight against tuberculosis. This innovative project promises to transform TB diagnostics and improve health outcomes worldwide.

ATL UID - 1980955
ATL MARATHON 2022 REGISTRATION ID - 111439614
NAME OF THE SCHOOL - APSWR Centre of Excellence (Mdhurawada, Visakhapatnam)
NAME OF THE TEAM - Global Makers
TEAM MEMBERS - S.Soujanya, K. Amrutha Varshini, R. Pravalika
ATL IN-CHARGE - Dr.T. Rambabu
INNOVATION TITLE - Smart Health Shirt
STATE - Andhra Pradesh

Imagine being a doctor during a pandemic, facing the challenge of monitoring countless patients with limited resources. For S. Soujanya, K. Amrutha Varshini, and R. Pravalika from APSWR Centre of Excellence, this daunting reality sparked a brilliant idea. They were deeply moved by the struggles faced by healthcare professionals and families during the COVID-19 pandemic, especially witnessing how patients, particularly the elderly, suffered from a lack of continuous care.

The trio, guided by their mentor Dr. T. Rambabu, were driven by a simple yet profound belief: "Every problem has a solution; it sometimes just needs another perspective." Inspired by personal experiences, including the discomfort of watching her grandfather's health deteriorate when left unmonitored, Soujanya shared this insight with her friends. They decided to transform their empathy into action by creating a solution that would bridge the gap in patient care.

Their innovation, the Smart Health Shirt, is a groundbreaking garment designed to make patient monitoring easier and more effective. This high-tech shirt is embedded with sensors that track vital signs such as heart rate, pulse rate, oxygen levels, temperature, and even the humidity of the surroundings. This information is sent in real-time to doctors, nurses, and family members via a mobile app, ensuring constant, reliable monitoring.

The shirt's versatility extends beyond patient comfort. It includes a detachable device that can be fitted into any outfit, making it adaptable for various situations. Additionally, future upgrades will integrate AI technology for advanced health monitoring and a louder buzzer for critical alerts.

Soujanya, Amrutha, and Pravalika turned their vision into reality, this invention offers both convenience and innovation for patient care.

ATL UID - d1c18674
ATL MARATHON 2022 REGISTRATION ID - 111736504
NAME OF THE SCHOOL - D.A.V. Public School, Vasant Kunj, New Delhi
NAME OF THE TEAM - Team Nexus
TEAM MEMBERS - Harsh Jha, Sabal Kumar Prasad
ATL IN-CHARGE - Ms Vandana Deepak
INNOVATION TITLE - B.E.N.D. (Belt to Ease Nexus Difficulties)
STATE - Delhi

In the heart of New Delhi, two young innovators, Harsh Jha and Sabal Kumar Prasad from D.A.V. Public School, Vasant Kunj, has set out to revolutionize the way we address joint pain. Their journey began at home, inspired by the struggles of their own grandparents with osteoarthritis. Determined to make a difference, they developed B.E.N.D. (Belt to Ease Nexus Difficulties), a device aimed at alleviating joint discomfort and improving mobility.

With guidance from theirATL in-charge, Ms. Vandana Deepak, and the support of the Atal Tinkering Lab, Harsh and Sabal embarked on an intensive research and development process. They designed and refined their prototype, incorporating feedback from mentors and volunteer testers. Their dedication led them to the ATL Marathon 2022-23, where they showcased their invention at the Amity Incubation Center in Noida, earning a spot among the top 100 teams in India.

B.E.N.D. is now a fully functional prototype. Harsh and Sabal plan to patent their innovation and make it available for rent in hospitals, ensuring affordable access to effective treatment. Their success story, fueled by empathy and innovation, serves as an inspiration to future generations of problem solvers.

ATL UID - d1c18674
ATL MARATHON 2022 REGISTRATION ID - 111736504
NAME OF THE SCHOOL - D.A.V. Public School, Vasant Kunj, New Delhi
NAME OF THE TEAM - Team Creators
TEAM MEMBERS - Gaurav Gupta, Sarthak Rai, Jatin Pradhan
ATL IN-CHARGE - Mrs.Vandana Deepak
INNOVATION TITLE - Seed - Providing Nutrients
STATE - New Delhi

In a remarkable display of ingenuity, Gaurav Gupta, Sarthak Rai, and Jatin Pradhan from D.A.V. Public School, Vasant Kunj, New Delhi, have developed "Seed - Providing Nutrients." Guided by their ATL incharge, Ms. Vandana Deepak, the trio created an innovative machine to tackle seed wastage.

"Our team noticed that students often discard fruit seeds, which are rich in nutrients, because they find them hard to peel," the students explained. Inspired by this, they researched and discovered widespread nutrient deficiencies globally. This revelation fueled their determination to find a practical solution.

Their machine features a fruit seed input unit, washing unit, peeling unit, grinding unit, and flavor addition buttons. It processes seeds into a nutrient-rich powder, which can be mixed with milk for a protein shake or used directly. This promotes sustainability and reduces waste.

Looking ahead, the team plans to partner with the food industry to integrate seed powder into products like nutrition bars and cereals. They also aim to expand into new markets and develop larger versions of the machine for commercial use.

Currently a working prototype, their invention is set for future scaling and commercialization. Gaurav, Sarthak, and Jatin's dedication exemplifies how young minds can create impactful solutions for global challenges.

ATL UID - 90169356
ATL MARATHON 2022 REGISTRATION ID - 111563904
NAME OF THE SCHOOL - DAV Public School, Sector 49, Gurugram, Haryana 122018
NAME OF THE TEAM - Pet-Fit Collar
TEAM MEMBERS - Arin Chakrabarti, Naitik Bansal
ATL IN-CHARGE - Ashna Kaushik
INNOVATION TITLE - The Pet-FIt Collar
STATE - Haryana

In the fields of Haryana, where cattle health is paramount, Arin Chakrabarti and Naitik Bansal from DAV Public School, Sector 49, Gurugram, have emerged as trailblazers. Observing the critical issue of delayed disease diagnosis in cattle, they were inspired to create the Pet-Fit Collar, a cutting-edge health monitoring device, under the mentorship of ATL incharge Ashna Kaushik.

The Pet-Fit Collar is designed to detect early signs of disease, enabling timely preventive measures. This smart collar monitors temperature, heart rate, and mobility. It also features ultrasonic sensors that activate a buzzer to prevent healthy animals from coming too close to infected ones, curbing disease spread.

The collar's innovative features include reflectiveness for easy identification in the dark, solar power for continuous operation, waterproof durability, and a compact, detachable design. Data collected by the collar is accessible via a dedicated app and detailed information is available on their website, which also offers a 24/7 helpline and an active feedback form.

Arin and Naitik tested the Pet-Fit Collar on 30 cows, 8 goats, 5 dogs, and 1 cat, with promising results. They plan to scale up by attracting investors, emphasizing the high return on investment and product scalability. They highlight the durability of their database system, precision of their sensors, and strategic marketing plan.

The Pet-Fit Collar is set to transform cattle health monitoring, offering a reliable, innovative solution to a significant market need. Arin and Naitik's vision and determination are poised to make a lasting impact on the agricultural industry.

ATL UID - 62ab11172
ATL MARATHON 2022 REGISTRATION ID - 85879409
NAME OF THE SCHOOL - DAV Public School Unit-VIII, Bhubaneswar
NAME OF THE TEAM - DAV Innovators
TEAM MEMBERS - Sarthak Mishra and Biswabijayee Mahapatra
ATL IN-CHARGE - Mr. Tanmay Kumar Nayak
INNOVATION TITLE - System to Prevent Cattle from FMD with Health Monitoring
STATE - Odisha

In a remarkable breakthrough for animal husbandry, Sarthak Mishra and Biswabijayee Mahapatra from DAV Public School, Bhubaneswar have introduced an innovative solution to combat Foot and Mouth Disease (FMD) in cattle. Under the expert guidance of ATL in-charge Mr. Tanmay Kumar Nayak, these young inventors have developed a "System to Prevent Cattle from FMD with Health Monitoring."

In India, where 64% of the population relies on cattle for their livelihood, FMD poses a serious threat. This highly contagious viral disease can devastate herds and impact dairy production. Sarthak and Biswabijayee's ingenious system addresses this issue with a comprehensive health monitoring solution designed for large farms.

Their creation features a high-tech passageway where cattle are examined for signs of illness. As each cow passes through, an RFID reader identifies it, an infrared sensor measures body temperature, and weight sensors check its weight. A rotating brush cleans the cattle while disinfectants eliminate pathogens. Additionally, urine samples are collected for pH and color analysis, with data sent to an IoT database for real-time health monitoring.

This advanced system not only prevents FMD but also helps manage overall cattle health, offering a sustainable solution for the dairy industry. Sarthak and Biswabijayee's innovation is set to improve farm hygiene, reduce disease spread, and support farmers across the nation.

ATL UID - 19287044
ATL MARATHON 2022 REGISTRATION ID - 111571064
NAME OF THE SCHOOL - Gopi Krishna High School
NAME OF THE TEAM - Monitoring Team G
TEAM MEMBERS - Y Mokshitha Reddy, M Mahalakshmi and P Sai Hanshika
ATL IN-CHARGE - George Lavanya
INNOVATION TITLE - IOT Based Health Care Monitoring System for Rural Pregnant women
STATE - Andhra Pradesh

Y Mokshitha Reddy, M Mahalakshmi, and P Sai Hanshika, brilliant students from Gopi Krishna High School, have developed an IoT-based Health Care Monitoring System specifically designed to assist rural pregnant women. This groundbreaking invention, supported by ATL in-charge George Lavanya, addresses the critical issue of maternal mortality, which predominantly occurs at home in developing and underdeveloped countries.

Most studies of maternal mortality are hospital-based, but Mokshitha, Mahalakshmi, and Sai Hanshika recognized the urgent need for a solution that works in rural settings where medical facilities are scarce. They designed a compact, lightweight, and highly sensitive device that monitors vital parameters such as the temperature and blood pressure of pregnant women, as well as the heart rate of the fetus. Utilizing various sensors, this device ensures precise measurements even with the slightest movements, making it ideal for home use.

The key innovation lies in the device's ability to regularly monitor and transfer these vital parameters via IoT, providing timely health assistance. The data is easily accessible on mobile phones, ensuring quality healthcare for both mother and child. By enabling continuous monitoring, this device significantly reduces the risk of complications and infant mortality in rural areas.

This IoT-based HealthCare Monitoring System is poised to make a significant impact on maternal health, offering a practical and effective solution to a longstanding problem.

ATL UID - 25217100
ATL MARATHON 2022 REGISTRATION ID - 111485624
NAME OF THE SCHOOL - Dr. Kalmadi Shamarao High School, Ganesh Nagar, Pune
NAME OF THE TEAM - Shudh
TEAM MEMBERS - Anvay Sinkar and Pranav Bharam
ATL IN-CHARGE - Mr. Paresh Shinde
INNOVATION TITLE - Shudh UV purifying water bottle
STATE - Maharashtra

Anvay Sinkar and Pranav Bharam, students from Dr. Kalmadi Shamarao High School Ganesh Nagar, Pune, have tackled one of the world's most pressing health crises with their invention, the Shudh UV purifying water bottle. Supported by ATL in-charge Mr. Paresh Shinde, these young innovators addressed the dire need for clean drinking water, a necessity that millions of people globally still struggle to access.

Motivated by the critical issue of waterborne diseases—leading causes of illness and death in regions like the Indian subcontinent—Anvay and Pranav developed a solution aimed at providing safe drinking water for all. Traditional purification methods often fall short, making the need for a reliable, portable alternative more urgent than ever. The Shudh UV purifying bottle, combining advanced filtration technologies with powerful UV disinfection, answers this need.

The bottle employs UV-C LED technology, emitting a 275 nm wavelength light to deactivate harmful bacteria, viruses, and other microorganisms. The purification process begins with a filtration system that removes physical impurities and sediments. This is followed by UV-C purification, which neutralizes pathogens by destroying their DNA. This dual approach ensures comprehensive water purification, making it safe to drink anytime, anywhere.

Its compact design is perfect for travelers, outdoor enthusiasts, and individuals in both urban and rural areas with limited access to clean water. The rechargeable battery provides extended usage, and safety mechanisms ensure user protection.

Anvay and Pranav's creation promises a substantial impact, reducing the incidence of waterborne diseases and improving public health. To scale their project, they plan to continuously enhance the bottle's purification efficiency, battery life, and user experience. Furthermore, sustainability initiatives, such as eco-friendly practices and recycling programs, will attract environmentally conscious consumers.

The Shudh UV purifying bottle represents a significant leap forward in water purification technology, with the potential to revolutionize global water quality and public health. Through their innovation, Anvay Sinkar and Pranav Bharam exemplify the power of young minds in addressing critical global challenges.

ATL UID - 25998374
ATL MARATHON 2022 REGISTRATION ID - 111653444
NAME OF THE SCHOOL - St. George English Medium School, Chully
NAME OF THE TEAM - Craftee Crew
TEAM MEMBERS - Angela Maria Tijo, Ansona Benny and Krishnendhu Shiju
ATL IN-CHARGE - Shainy Suresh
INNOVATION TITLE - Proptcher
STATE - Telangana

Angela Maria Tijo, Ansona Benny, and Krishnendhu Shiju, students from Telangana Model School Imampet, Telangana have made a significant leap in medical technology with their invention, Proptcher. Under the astute guidance of ATL in-charge Shainy Suresh, the trio developed this multipurpose patient bed to address the prevalent challenges in patient transfer, particularly for those with spinal injuries and post-surgical conditions.

Proptcher is a versatile patient bed ingeniously divided into three sections. The middle part functions as a stretcher, while the sides serve as a bed. This design allows the central stretcher to move seamlessly from the bed to any required location, such as for X-rays or scanning, without causing discomfort or further injury to the patient. The ease of movement provided by Proptcher is particularly beneficial for bedridden patients and those requiring constant medical supervision.

Equipped with four caster wheels that rotate 360 degrees, Proptcher ensures smooth and effortless maneuverability. In cases of emergency, the stretcher can be swiftly unlocked from the bed and transported as needed. Fixed rails on either side of the bed offer additional security, preventing accidental falls.

For nursing assistants and caregivers, Proptcher is a game-changer. Traditional methods of lifting and transferring patients can be strenuous and hazardous, particularly for those with existing back problems. Proptcher eliminates this physical strain, allowing for the safe and efficient movement of patients with minimal effort, thus safeguarding the health of both patients and caregivers.

The innovative minds of Angela, Ansona, and Krishnendhu have paved the way for a safer, more effective approach to patient management, embodying the spirit of compassionate care and technological advancement.

ATL UID - 964911485
ATL MARATHON 2022 REGISTRATION ID - 111588694
NAME OF THE SCHOOL - Shree KG Dholakiya School
NAME OF THE TEAM - Electric Hand Gloves
TEAM MEMBERS - Sangani Shyama Rajeshbhai
ATL IN-CHARGE - Bhargav Ghadia
INNOVATION TITLE - Innovative Gloves For Hand Rehabilitation
STATE - Gujarat

Inspired by a family member's struggle with finger arthritis, Sangani Shyama Rajeshbhai guided by ATL Incharge Bhargav Ghadia from Shree KG Dholakiya School embarked on a mission to develop a solution that would make rehabilitation more accessible and effective. The student's personal experience with the challenges of physiotherapy and the desire to help others suffering from similar conditions drove this innovative project.

The student's invention, a specialized hand glove, is designed to assist with essential hand exercises, including hand grippers, finger extensors, Thera-putty, and Thera-band. By incorporating flexible, resistive materials, adjustable tension control, sensors for real-time feedback, and an ergonomic design, the glove provides a comprehensive rehabilitation tool.

The glove aims to address the limitations of traditional physiotherapy by offering a more convenient and personalized approach. It empowers patients to engage in effective hand exercises at home, reducing the need for frequent visits to healthcare facilities. By providing real-time feedback on progress, the glove enables patients to track their improvement and adjust their therapy accordingly.

With the support of organizations such as NITI Aayog, Atal Innovation Mission, Dell Technologies, and Learning Link Foundation, the student is working towards commercializing the hand glove. The goal is to make this innovative product widely available to individuals suffering from hand injuries or conditions, providing them with a more accessible and effective rehabilitation solution.

The hand glove's potential to revolutionize hand rehabilitation is significant. It offers a promising alternative to traditional therapies, with the potential to improve finger range of motion, enhance hand function, reduce rehabilitation time and costs, and provide personalized therapy.

ATL UID - 12036563
ATL MARATHON 2022 REGISTRATION ID - 111652234
NAME OF THE SCHOOL - New Horizon Public School
NAME OF THE TEAM - Radia AI
TEAM MEMBERS - Shindhoor R and Liya R
ATL IN-CHARGE - Niladri Purkayastha
INNOVATION TITLE - Radia AI
STATE - Karnataka

In the bustling city of Bangalore, amidst the vibrant campus of New Horizon Public School, two young minds, Shindhoor R and Liya R guided by ATL Incharge Niladri Purkayastha, were ignited by a desire to make a difference. Inspired by the global shortage of healthcare professionals and the challenges faced by individuals with disabilities, they embarked on a collaborative journey to harness the power of technology to improve lives.

Their innovation, Radia, was a groundbreaking AI system designed to revolutionize radiology. By analyzing radiographs with unparalleled speed and accuracy, Radia aimed to alleviate the burden on radiologists and improve patient outcomes. The system's ability to detect subtle abnormalities that human eyes might miss held the potential to transform diagnosis and treatment.

Beyond radiology, Shindhoor and Liya's passion extended to the field of biomedical engineering. Driven by a desire to assist those with hand tremors and disabilities, they developed innovative solutions. Their AI models could diagnose Parkinson's disease using voice-based biomarkers and tremor mapping, offering early detection and personalized treatment. They also created cost-effective assistive devices, such as a self-stabilizing spoon and a vibrotactile device, to improve quality of life for individuals with disabilities.

The potential impact of their innovations was immense. By addressing the shortage of healthcare professionals and providing accessible solutions for those with disabilities, they aimed to improve healthcare outcomes and enhance the lives of countless individuals.

As they continued to develop and refine their projects, Shindhoor and Liya envisioned a future where technology played a pivotal role in addressing global health challenges. Their journey was a testament to the power of innovation and the potential of young minds to make a lasting impact on the world.

Theme: Agriculture

ATL UID - 29427114
ATL MARATHON 2022 REGISTRATION ID - 111260014
NAME OF THE SCHOOL - Dass and Brown World School
NAME OF THE TEAM - Krishi Yantra
TEAM MEMBERS - Divyam Dhawan and Hunar Sikri
ATL IN-CHARGE - Er. Umesh Kumar Bajaj
INNOVATION TITLE - Krishi Yantra
STATE - Punjab

In a groundbreaking effort to address one of the most pressing challenges in modern agriculture, Divyam Dhawan and Hunar Sikri, two visionary students, have developed an ingenious solution: the “Krishi Yantra.” This innovative device is poised to revolutionize irrigation practices, helping farmers optimize water usage and enhance crop yields.

Water scarcity and wastage are significant problems in agriculture, where water is a vital resource for crop growth. Without adequate water, crops fail to develop properly, leading to reduced yield and quality. Conversely, over-irrigation can result in waterlogging and other detrimental effects. Farmers often struggle to determine the appropriate amount of water required for their crops due to a lack of accurate soil moisture measurements, leading to inefficient water usage.

Recognizing this critical issue, Divyam and Hunar embarked on a mission to create a solution that could empower farmers with precise irrigation management. The result of their dedication and innovation is the Krishi Yantra, a sophisticated blend of hardware and software designed to provide real-time data and control over irrigation systems.

The Krishi Yantra comprises two main modules, seamlessly integrated with the help of Wi-Fi technology. The first module is connected to the water pump and includes a NodeMCU, an LCD screen, and a water pump sensor. The second module features a NodeMCU, a soil moisture sensor, and another LCD screen. Farmers insert the sensor into the soil, which then measures the soil’s moisture level.

With Krishi Yantra, farmers can manage their irrigation systems from the comfort of their homes, ensuring optimal water usage.

Their mentor and ATL Incharge Er. Umesh Kumar Bajaj guided them throughout their process of developing the very first prototype to participate successfully in the ATL Marathon.

Krishi Yantra represents a significant leap forward in sustainable agriculture. Divyam Dhawan and Hunar Sikri’s remarkable invention not only addresses a critical problem but also exemplifies the power of youthful innovation and dedication to creating a better future for farmers and the environment.

ATL UID - cbd03014
ATL MARATHON 2022 REGISTRATION ID - 111273374
NAME OF THE SCHOOL - Swami Atmanand Govt Multipurpose Hr Sec School
NAME OF THE TEAM - Dr Kalam Science Club
TEAM MEMBERS - Tarun Mishra, Mohnish Dhruv, Atulya Anand
ATL IN-CHARGE - Dr Dhananjay Pandey
INNOVATION TITLE - Atal Flying Machine - The Drone
STATE - Chhattisgarh

In a bid to address pressing issues in agriculture, medical services, and surveillance, three innovative students from Swami Atmanand Govt Multipurpose Hr Sec School—Tarun Mishra, Mohnish Dhruv, and Atulya Anand have developed the Atal Flying Mission, a versatile drone. With the guidance of Dr. Dhananjay Pandey, this project aims to propel their community towards a smarter, more efficient future.

During a community visit, members highlighted persistent problems in agriculture, medical aid, and monitoring and recognized the need for technological intervention. The team focused on creating a cost-effective, accurate, and user-friendly solution. Their Atal Flying Mission, a hexacopter equipped with GPS mapping and pesticide spraying capabilities, emerged as the answer. Atal Flying Machine is Connected to a bottle in the downward section of the Drone. The Bottle is filled with the pesticide and as the drone flies it starts pesticiding the whole field. Afterwards with the help of the machine mapping of the whole area can also be obtained through the GPS module of the drone.

The drone's primary function is to enhance agricultural productivity. It addresses the challenge of spraying pesticides efficiently, preventing damage to users, and ensuring uniform fertilizer distribution across fields. Its GPS mapping feature is crucial for precise application, ensuring thorough coverage and minimizing waste. Additionally, the drone aids in detecting and managing herds of animals, such as elephants, which can devastate crops.

The Atal Flying Mission also offers potential applications beyond agriculture. It can sanitize areas, monitor traffic, enhance internal security, and even deliver medical supplies. Its multifunctionality, ease of operation, and cost-effectiveness make it a pioneering solution for developing smart and hybrid cities.

Tarun, Mohnish, and Atulya's innovative drone demonstrates the power of integrating technology to solve real-world problems, setting a benchmark for future advancements in various sectors.

ATL UID - b8b93905
ATL MARATHON 2022 REGISTRATION ID - 111798604
NAME OF THE SCHOOL - Delhi Public School, Gaya
NAME OF THE TEAM - Safe Rider
TEAM MEMBERS - Atharv Goenka, Rohit Kumar, Pratiksha Singh
ATL IN-CHARGE - Dr Devendra Singh
INNOVATION TITLE - New Gen Plantation
STATE - Bihar

In a groundbreaking initiative, Atharv Goenka, Rohit Kumar, and Pratiksha Singh from Zila School Gaya and DPS Gaya have introduced an innovative solution to transform agriculture. Under the mentorship of Dr. Devendra Singh, their project, "New Gen Plantation," leverages technological advancements to boost crop yields and enhance aquaculture.

Aquaponics, an age-old practice combining crop cultivation with pisciculture, inspired their idea. The trio witnessed the hardships of farmers facing crop failures, often left without alternative income sources. They realized that integrating fish farming with traditional agriculture could provide a vital safety net.

"Our model addresses critical issues in traditional farming, such as soil degradation, limited arable land, crop failures, and high water consumption," explained Atharv. "We aim to solve these problems by improving cropping patterns, enhancing soil nutrition, and increasing productivity per unit of land."

The New Gen Plantation model is scalable in two ways. Firstly, they developed portable aquaponics systems for homes, promoting a healthier lifestyle with chemical-free groceries. Secondly, they designed larger systems for farmers, enabling them to achieve higher yields and meet commercial demands affordably and accessibly.

This innovative approach not only mitigates risks for farmers but also promotes sustainable agriculture. By utilizing aquaponics, farmers can rely on fish farming during crop failures, ensuring a steady income. The model's portability and scalability make it adaptable for various users, from individual households to large-scale agricultural operations.

Atharv, Rohit, and Pratiksha's New Gen Plantation is poised to revolutionize farming, offering a sustainable and resilient solution for the future of agriculture.

ATL UID - 21932738
ATL MARATHON 2022 REGISTRATION ID - 111623204
NAME OF THE SCHOOL - Army Public School (MEERUT CANTT)
NAME OF THE TEAM - Green Warriors
TEAM MEMBERS - Chitransh Goliyan, Prince Kumar, Rakshit Singh
ATL IN-CHARGE - Erum Zaman Khan
INNOVATION TITLE - Locust Tranquiliser
STATE - Uttar Pradesh

When the locust swarms invaded India, devastating crops and causing widespread agricultural harm, Chitransh Goliyan, Prince Kumar, and Rakshit Singh from Army Public School (Meerut Cantt) decided to find a solution. Under the guidance of Erum Zaman Khan, they created the Locust Tranquilizer to address this persistent agricultural threat.

Desert locusts, among the most destructive pests, posed a severe risk to food security in regions like the Middle East, Africa, India, Pakistan, and China. Traditional methods, such as drones, chemical sprays, and biopesticides, had limited effectiveness. The students innovated by using technology to control the swarms.

Their invention involved an oscillator generating a 38 kHz frequency tone, programmed via an Arduino board and monitored with an oscilloscope. Drones equipped with this technology emitted the frequency in locust-infested areas, attracting the locusts to a specific spot. By increasing the frequency, they caused the locusts to converge and fall to the ground, neutralizing the threat.

Beyond pest control, the students recognized the nutritional value of locusts, which are 70% protein-rich. They proposed using locusts as poultry feed, inspired by a Pakistani scientist's idea, to improve egg and chicken quality and quantity. This could also benefit other carnivorous and omnivorous animals. Additionally, locusts have applications in bio-active products and chitin oil and are a traditional food source in over 65 countries.

The Locust Tranquilizer not only protects crops but also supports food security and animal nutrition. With Mr. Sachin Sharma's guidance, the students demonstrated their commitment to solving real-world challenges with innovative solutions.

ATL UID - 3b0110383
ATL MARATHON 2022 REGISTRATION ID - 111797314
NAME OF THE SCHOOL - Kulachi Hansraj Model School
NAME OF THE TEAM - TechDev
TEAM MEMBERS - Akshit Bansal and Abhinav Bansal
ATL IN-CHARGE - Ms. Tanu Sharma
INNOVATION TITLE - TechnoFlora
STATE - Delhi

Imagine a world where a single room can transform into a lush green farm, where crops grow faster and yield more, all while using less water and energy. This vision has been brought to life by Sarthak Mishra and Biswabijayee Mahapatra from Kulachi Hansraj Model School, Delhi with their innovative creation, TechnoFlora. Under the mentorship of ATL incharge Ms. Tanu Sharma, these young pioneers are setting new standards in sustainable agriculture.

In a country where 64% of the population relies on farming, and where traditional methods are failing to meet the growing food demands due to urbanization and land degradation, TechnoFlora emerges as a beacon of hope. This revolutionary system blends hydroponics, grow lights, and climate control technologies to create the perfect environment for plants to thrive—regardless of external conditions.

With TechnoFlora, farming is no longer limited by space or season. The system uses nutrient-rich water instead of soil, artificial lights to extend the growing season, and climate controls to perfect the growing environment. The result? Faster plant growth, increased yields, and efficient resource use.

Farmers in Sonepat, Haryana, have already praised TechnoFlora for its ability to boost productivity and reduce labor. Looking forward, Sarthak and Biswabijayee are planning a strategic outreach campaign through local farmer unions and digital media to spread the word.

Their goal is clear which is to transform farming from a labor-intensive struggle into a streamlined, efficient, and rewarding endeavor. TechnoFlora isn't just a project; it's a green revolution in the making.

ATL UID - d69f7304
ATL MARATHON 2022 REGISTRATION ID - 111436204
NAME OF THE SCHOOL - Rainbow International School
NAME OF THE TEAM - Science Jaguars
TEAM MEMBERS - Manvi Mishra and Harshita
ATL IN-CHARGE - Ms. Monika Sharma
INNOVATION TITLE - SATVA - A Step for Sustainability
STATE - Himachal Pradesh

Agricultural sustainability is under threat, with 33% of the world's arable land degraded and 60% of global soil experiencing moderate to severe erosion. Farmers often struggle with inefficient resource use, leading to a 20-40% yield reduction due to inadequate soil health and pest management. Motivated by these critical issues, Manvi Mishra and Harshita from Rainbow International School developed SATVA to support farmers with technology. Under the guidance of their ATL in-charge, Ms. Monika Sharma, SATVA is designed to support farmers in achieving sustainable agricultural practices.

SATVA is a comprehensive system that combines modern technology with eco-friendly solutions to address key challenges in farming. The core component of SATVA is a user-friendly app that provides real-time monitoring of field conditions, tracking vital parameters such as moisture levels, soil pH, temperature, and irrigation needs. By leveraging data analytics and machine learning, SATVA offers personalized crop recommendations based on specific field conditions. This helps farmers make informed decisions on which crops to plant, optimizing yields and ensuring better resource management.

Moreover, SATVA includes a unique feature for soil treatment advice, suggesting appropriate soil amendments and fertilizers tailored to selected crops, enhancing soil health and fertility over time. One of SATVA's standout innovations is its organic pest removal spray, formulated to be effective against pests while being safe for plants, humans, and beneficial insects. Packaged in sustainable bamboo containers, the spray aligns with the project's commitment to environmental responsibility.

Accessibility is a key aspect of SATVA. The app is available in all native languages, making it easy for farmers from diverse linguistic backgrounds to use and benefit from its features. This inclusivity ensures that SATVA can reach a wide audience and have a meaningful impact on farming communities.

To scale up their innovation the team is also planning to do strategic partnerships with agricultural institutions, NGOs, and governments to leverage expertise, funding, and distribution channels.

With SATVA, Manvi Mishra and Harshita are not just inventing technology; they are paving the way for a sustainable and prosperous future for agriculture, making a lasting impact on farming communities and the environment.

ATL UID - 1615959
ATL MARATHON 2022 REGISTRATION ID - 111285034
NAME OF THE SCHOOL - UCSKM Public School
NAME OF THE TEAM - Tech-Girls
TEAM MEMBERS - Savvy Ayur Patil and Saloni Kumari
ATL IN-CHARGE - Ms. Swati Patil
INNOVATION TITLE - IoT based Farm Optimizer
STATE - Rajasthan

Savvy Ayur Patil and Saloni Kumari, two brilliant minds from UCSKM Public School, Rajasthan have developed an innovative IoT-based Farm Optimizer to enhance agricultural processes in India, this breakthrough invention aims to modernize traditional farming practices and significantly boost crop yields.

The Farm Optimizer is an automated technology leveraging the Internet of Things (IoT) and the microcontroller NodeMCU. By integrating soil sensors, the system monitors soil humidity and temperature, ensuring optimal watering based on real-time readings. Additionally, the system features a motion-activated buzzer that alerts farmers to any disturbances, which can only be deactivated by the field owner. The Farm Optimizer also includes an automated lighting system for nighttime operations, further enhancing its utility.

This innovative solution addresses the challenges faced by traditional farming methods, which often result in low crop yields due to inefficient resource management. The Farm Optimizer's smart technologies promise to revolutionize agriculture by enabling precise control over various factors affecting crop growth.

The implications of this invention are profound. Agriculture, the cornerstone of India's economy, stands to benefit immensely from such advancements. By adopting smart technologies, farmers can increase productivity, reduce labor, and ensure more sustainable farming practices. The Farm Optimizer by Savvy Ayur Patil and Saloni Kumari represents a significant step towards a more efficient and productive agricultural sector in India, showcasing the incredible potential of IoT in transforming traditional industries.

With the guidance and support of Ms. Swati Patil, these young innovators have not only demonstrated the power of technology in agriculture but also highlighted the importance of fostering creativity and problem-solving skills in the next generation.

ATL UID - 134613318
ATL MARATHON 2022 REGISTRATION ID - 111336824
NAME OF THE SCHOOL - Sai Ram Matriculation Hr. Sec. School
NAME OF THE TEAM - The Tactical Three
TEAM MEMBERS - S.Madhan, S.Niranjan and R.Mugunthan
ATL IN-CHARGE - G.Sasireka
INNOVATION TITLE - IoT Powered Smart Greenhouse
STATE - Tamil Nadu

In the heart of Tamil Nadu, where agriculture is the lifeblood of the community, three visionary students from Sai Ram Matriculation Hr. Sec. School—S. Madhan, S. Niranjan, and R. Mugunthan—are transforming the future of farming with their groundbreaking invention, the IoT Powered Smart Greenhouse. Growing up in a region where climate volatility often jeopardizes crops, these young innovators sought to blend their technological expertise with their agricultural heritage to develop a solution that addresses the challenges faced by local farmers.

Their project, the Smart Greenhouse, is designed to create an optimal environment for plant growth regardless of external weather conditions. By harnessing the power of Internet of Things (IoT) technology, the Smart Greenhouse integrates advanced sensors and microcontrollers to monitor and regulate crucial parameters like temperature, humidity, light, and soil moisture. The real-time data collected by these sensors is used to automatically adjust conditions within the greenhouse, ensuring plants thrive throughout the year.

Under the guidance of ATL in-charge G. Sasireka, Madhan, Niranjan, and Mugunthan have developed a user-friendly smartphone app that allows farmers to remotely manage their greenhouse. This innovative feature makes it easier for farmers to oversee their crops from anywhere, enhancing efficiency and productivity.

The Smart Greenhouse not only promises increased crop yields and improved produce quality but also supports sustainable farming practices through energy-efficient systems and automated processes. Looking ahead, the team envisions scaling their project to reach more farmers across India, collaborating with agricultural organizations, and integrating advanced features like machine learning for predictive analysis.

By addressing critical agricultural challenges and advocating for sustainable practices, the Smart Greenhouse project stands as a testament to how technology can empower farmers and contribute to food security.

ATL UID - 26826380
ATL MARATHON 2022 REGISTRATION ID - 26826380
NAME OF THE SCHOOL - Pushpalata Vidya Mandir
NAME OF THE TEAM - PVM Krishi Raksha
TEAM MEMBERS - Ponnambalam A, M S Vignesh and Lohesh V B
ATL IN-CHARGE - Arivanandam
INNOVATION TITLE - Farm - Easy
STATE - Tamil Nadu

In a remarkable fusion of innovation and technology, Ponnambalam A, M S Vignesh, and Lohesh V B from Pushpalata Vidya Mandir, Tamil Nadu, have developed an ingenious solution named "Farm-Easy." Guided by ATL in-charge Arivanandam, these young innovators have created a system designed to revolutionize traditional farming practices by mitigating the climatic impact on crops and reducing the risk of crop failure due to pests, animals, and weeds.

Farm-Easy addresses a critical challenge faced by farmers which is the need to constantly monitor and protect their crops. In traditional farming, separate devices are used to check temperature, soil moisture, and other vital parameters. However, Farm-Easy integrates these devices into a cohesive system that provides 24/7 protection without requiring the farmer's constant attention. Special alarms connected to an app alert farmers to emergencies, ensuring timely intervention.

One of the standout features of Farm-Easy is its use of solar panels that tilt 360 degrees to maximize sunlight exposure, conserving energy and reducing costs for farmers. This is especially crucial given the anticipated decrease in cloudiness and subsequent impact on solar radiation due to rising greenhouse gases.

Farm-Easy also includes innovative animal and pest control measures. A frequency generator produces sounds that deter animals, while motion control devices monitor their presence. Additionally, the system's moisture tracker optimizes water usage by adjusting the water supply based on soil moisture levels. A wind speed tracker activates a shielding mechanism to protect crops from high winds, preventing uprooting and damage.

The project not only showcases the students' creativity but also their commitment to sustainable farming practices, setting a new standard for agricultural innovation.

With Farm-Easy, Ponnambalam, Vignesh, and Lohesh have paved the way for a future where technology empowers farmers, ensuring food security and sustainability. Their invention promises to make farming more efficient, resilient, and accessible, embodying the spirit of innovation and progress in agriculture.

ATL UID - 30847818
ATL MARATHON 2022 REGISTRATION ID - 111323444
NAME OF THE SCHOOL - City Pride School, Nigdi, Pune
NAME OF THE TEAM - Automated Grain Dryer System
TEAM MEMBERS - Ved Thite, Vasundhara Mahadik and Gargi Desai
ATL IN-CHARGE - Dr. Deepali Sawai
INNOVATION TITLE - Automated Grain Dryer System
STATE - Maharashtra

In the bustling city of Pune, India, at the prestigious City Pride School, Nigdi, a trio of young innovators, Ved Thite, Vasundhara Mahadik, and Gargi Desai, embarked on a mission to revolutionize the lives of farmers. Under the guidance of their mentor, Dr. Deepali Sawai, the students were determined to find a solution to the age-old problem of grain drying.

Traditional grain drying methods, often involving open-air drying or rudimentary structures, were fraught with inconsistencies and inefficiencies. This often led to significant losses for farmers, impacting their livelihoods and the overall agricultural economy. The trio's hearts went out to these hard working farmers, who were the backbone of their nation. They knew they had to do something.

Inspired by their passion and a desire to make a tangible difference, Ved, Vasundhara, and Gargi set out to create an automated grain dryer. Their innovation was a marvel of engineering, featuring a sophisticated rotary mechanism and advanced sensor technology. The rotary drums ensured even drying, preventing the grains from being damaged, while the sensors monitored temperature, humidity, and moisture levels, optimizing the drying process.

The automated grain dryer was a game-changer. It not only reduced the time and labor required for drying but also improved the quality of the grains. Farmers could now dry their produce more efficiently and with greater consistency, minimizing losses and maximizing profits. The project was a testament to the ingenuity and potential of young minds, proving that even students could make a significant impact on the world.

As the automated grain dryer gained recognition, the trio realized the potential for scaling up their innovation. They envisioned a future where these machines were used by farmers across the country, transforming the agricultural landscape. By expanding the physical size of the dryers, creating modular designs, and incorporating IoT technology, they believed they could make their invention even more accessible and effective.

Ved, Vasundhara, and Gargi's journey was a testament to the power of innovation and the importance of addressing real-world problems. Their automated grain dryer was more than just a machine; it was a symbol of hope for farmers and a beacon of inspiration for young minds everywhere.

ATL UID - 96762290
ATL MARATHON 2022 REGISTRATION ID - 111225564
NAME OF THE SCHOOL - Govt. Higher Secondary School, Kreeri
NAME OF THE TEAM - Apple Graders
TEAM MEMBERS - Adnan Mushtaq Ione, Shakir Ahmed and Furqan Ahmed
ATL IN-CHARGE - Javid Ahmad Dar
INNOVATION TITLE - Apple Grading Machine
STATE - Jammu & Kashmir

In the picturesque town of Kreeri, nestled amidst the lush orchards of Kashmir, three young innovators, Adnan Mushtaq Lone, Shakir Ahmed, and Furqan Ahmed, were deeply concerned about the challenges faced by apple growers in their region. Witnessing the laborious and time-consuming process of grading apples, they were determined to find a more efficient solution.

Inspired by their passion for technology and their desire to help the local community, the trio embarked on a journey to create an automated apple grading machine. Under the guidance of their mentor, Javid Ahmad Dar, they poured their hearts and minds into developing a system that would revolutionize the way apples were sorted and graded.

Their innovation, a sophisticated and portable machine, was designed to replace manual labor entirely. Equipped with advanced sensors and AI, the machine could accurately assess apples based on their color, size, and internal quality. The system was divided into four main sections: washing, drying, wiping, and grading, ensuring a thorough and efficient process.

The impact of the apple grading machine was profound. It significantly increased the productivity of apple growers, reducing the time and labor required for grading. The machine also improved the accuracy and consistency of the grading process, ensuring that only the highest-quality apples reached the market.

Recognizing the potential for scaling up their innovation, Adnan, Shakir, and Furqan envisioned a future where their machine was used by apple growers across the region and beyond. They believed that by increasing the capacity of the machine and making it more affordable, they could help to improve the livelihoods of countless farmers.

The apple grading machine was a testament to the ingenuity and determination of these young innovators. It was a beacon of hope for the apple growers of Kreeri, demonstrating the power of technology to address real-world challenges and improve the lives of people.

सत्यमेव जयते
NITI Aayog

ATAL INNOVATION MISSION

ATL UID - 00b710389
ATL MARATHON 2022 REGISTRATION ID - 111201924
NAME OF THE SCHOOL - Pranavananda Vidyamandir
NAME OF THE TEAM - Team Agriculture
TEAM MEMBERS - Suraj Debnath, Shreyangsu Paul, Debojyoti Ghosh
ATL IN-CHARGE - Sunita Biswas
INNOVATION TITLE - Automatic Smoke Detection System
STATE - Tripura

Suraj Debnath, Shreyangsu Paul, and Debojyoti Ghosh have always been deeply connected to the natural world. Growing up surrounded by forests, they were acutely aware of the devastating effects that wildfires can have on ecosystems. These fires, often starting from a single burning tree, can spread rapidly, destroying vast areas of forest and wildlife. This shared concern for nature, along with the growing frequency of forest fires around the world, inspired them to create an innovative solution: **The Automatic Smoke Detecting System.**

Their motivation for the project stemmed from a desire to prevent forest fires before they spread uncontrollably. The team realized that smoke is typically the first indicator of a fire, and if smoke can be detected early, it is possible to stop the fire before it escalates. This understanding drove their mission to develop a system that could detect smoke quickly and effectively in remote areas, helping to protect forests and the biodiversity within them. Their innovation focuses on using advanced technology to detect smoke and other potential hazards. At the heart of their project is the **RDNO sensor**, which detects carbon particles in the air—a key sign of smoke. Once these particles are detected, the system sends a signal through PND and GND jumper wires to activate a buzzer, providing an immediate alert. One of the key advancements in their project is that it is **portable**, meaning it can be moved easily to different areas in a forest or industrial setting, enhancing its usability across various environments.

The system also includes a coiled magnet and diaphragm that converts sound vibrations into electrical signals, allowing it to detect even low-frequency sounds, such as those made by small fires or early-stage combustion. This feature makes it valuable not only for smoke detection but also for use in industries where detecting dangerous gases like carbon monoxide or natural gas leaks is essential. Looking ahead, the team envisions scaling up their innovation to cover a broader range of environmental hazards. By integrating advanced sensors, the system could be used in industries, residential areas, and public spaces to provide early warnings for smoke, toxic gas leaks, and other fire-related risks. This early detection system has the potential to save lives by allowing for quick evacuation and reducing property damage.

Suraj, Shreyangsu, and Debojyoti's project is a perfect example of how technology can be leveraged to protect nature and prevent disasters. Their dedication to preserving the environment while ensuring human safety is the driving force behind their work. By creating an automatic smoke detection system that is portable, efficient, and capable of detecting multiple hazards, they have taken a significant step toward reducing the devastating impact of fires on both forests

and people.

सत्यमेव जयते
NITI Aayog

ATAL INNOVATION MISSION

ATL UID - 438F6989
ATL MARATHON 2022 REGISTRATION ID - 111347984
NAME OF THE SCHOOL - Pratibha Niketan Vidyalaya Murum
NAME OF THE TEAM - Team Pratibha
TEAM MEMBERS - Gayatri Dayanand Ingle, Renuka Amrut Wakale, Pallvi Balaji Shinde
ATL IN-CHARGE - Suryawanshi Santoshkumar Vasantrao
INNOVATION TITLE - Biological Medicine
STATE - Maharashtra

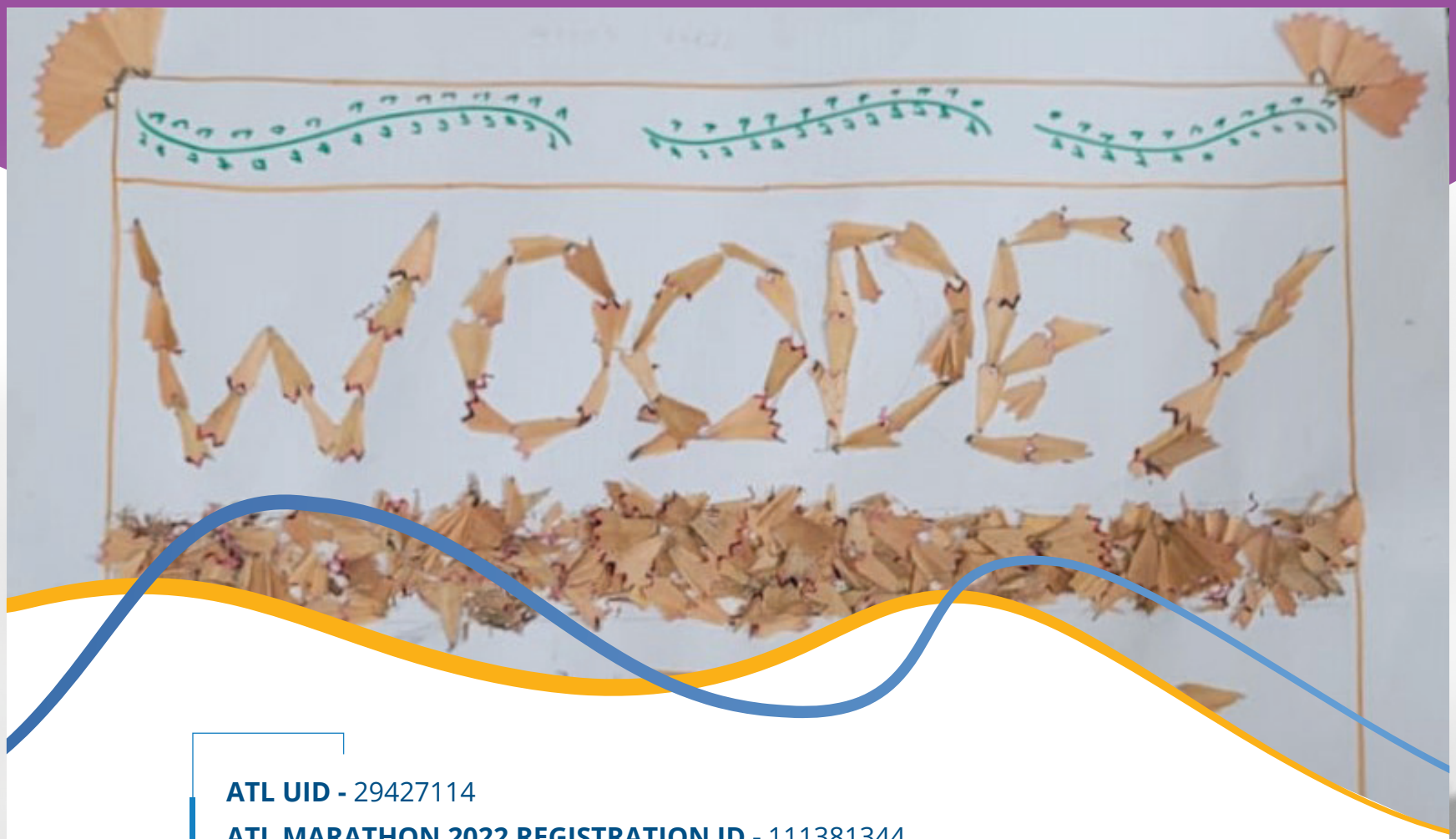
Maharashtra's farming community has long struggled with preserving food grains without harmful chemicals. Farmers commonly rely on boric acid, which poses significant health risks to consumers. Recognizing the dangers of chemically treated grains and their potential to cause diseases, Gayatri Dayanand Ingle, Renuka Amrut Wakale, and Pallvi Balaji Shinde developed an innovative, safe alternative to benefit both farmers and consumers.

The team was motivated by the urgent need to address the harmful effects of chemical preservatives on food safety and health. They aimed to create a practical, eco-friendly solution for rural communities, ensuring healthier grains and improved preservation techniques. Their innovation leverages generic medicines with antimicrobial properties to protect grains from spoilage and contamination without relying on chemical pesticides. These medicines, formulated for human use, are adapted into spray, powder, or tablet forms, making them versatile and easy to apply by farmers.

By using safe, widely available medicines, the team significantly reduces the risk of grain spoilage and contamination. Their solution ensures a safer storage system that avoids harmful chemicals, improving food safety for consumers and offering farmers an effective alternative to traditional preservatives. This approach is environmentally friendly and health-conscious, benefiting both people and ecosystems.

The potential impact of their project is transformative. Scaling up the innovation can reduce post-harvest losses, increasing farmers' incomes and improving food security. It also holds broader economic benefits, such as creating demand for the production and distribution of these medicine-based preservatives and generating job opportunities in agricultural training and medicine production. Socially, it empowers farmers by providing access to safer preservation methods and enhances rural livelihoods. From an environmental perspective, the initiative reduces reliance on harmful chemical pesticides, promoting sustainable agricultural practices. The use of medicine-based preservatives protects ecosystems, leads to healthier soils and water sources, and supports carbon sequestration by maintaining robust ecosystems. The work of Gayatri, Renuka, and Pallvi is a testament to the power of innovation in addressing agricultural challenges. Their solution enhances food safety, empowers farmers, supports rural economies, and promotes environmental sustainability. By combining practicality, health consciousness, and environmental responsibility, they are paving the way for a healthier, more sustainable future in food storage.

Theme: Environment



ATL UID - 29427114
ATL MARATHON 2022 REGISTRATION ID - 111381344
NAME OF THE SCHOOL - Dass and Brown World School
NAME OF THE TEAM - Woodey Cycle
TEAM MEMBERS - Divyam Dhawan, Tanmay Wadhwa and Karthik
ATL IN-CHARGE - Er. Umesh Kumar Bajaj
INNOVATION TITLE - Woodey Cycle
STATE - Punjab

At Dass and Brown World School, three innovative students, Divyam Dhawan, Tanmay Wadhwa, and Karthik, noticed that in today's world, deforestation outpaces afforestation at an alarming rate and after reading a journal which says, roughly 42 million trees are chopped down daily. They noticed this problem and also noticed that a significant contributor to this issue is the large-scale manufacturing of pencils. Over 14 billion pencils are produced annually. The process of sharpening these pencils results in a considerable amount of wood waste, which is often discarded without a second thought.

Under the guidance of their Atal Tinkering Lab in - charge, Er. Umesh Kumar Bajaj, they embarked on a mission to find a sustainable solution. Their hard work and ingenuity led to the invention of the "Woodey Cycle."

The Woodey Cycle is a process that repurposes pencil shavings into various useful products, thereby reducing waste and promoting sustainability. The project involves several steps:

The team implemented special collection boxes in classrooms, encouraging students to deposit their pencil shavings. Once these boxes are full, the shavings are collected and sent for further processing.

One of the innovative products that can be made from the collected shavings is BioEthanol. The shavings are ground into a powder and mixed with yeast and E.coli bacteria. This mixture undergoes hydrolysis and fermentation, converting the glucose in the wood into a fuel called BioEthanol.

The team also discovered that they can also make fiberboard from the shavings. In this process shavings are ground, mixed with resins, heated, and fiberized. These fibers are then pressed into molds using a hydraulic press, creating solid, multipurpose wooden boards.

Additionally, the shavings can be turned into paper. The Woodey Cycle has already been implemented in Dass and Brown World School, where an event named "Eco-Decor" was organized for classes 7th and 8th in which students participated in a competition to collect the most shavings, with the top three students from each class receiving medals and others receiving participation certificates. The gathered boxes are now used in classrooms from pre-primary to 4th grade for ongoing shaving collection. Woodey Cycle is not only helping to reduce waste but also educating young minds about the importance of sustainability and creative problem-solving.

ATL UID -520410101
ATL MARATHON 2022 REGISTRATION ID - 111506824
NAME OF THE SCHOOL - Excel Public School, Mysuru
NAME OF THE TEAM - Green Dreams
TEAM MEMBERS - Jaanhavi J Gore, Dishita M and Samarth P
ATL IN-CHARGE - Ms. Jyoti Joseph
INNOVATION TITLE - Green Dreams
STATE - Karnataka

In a groundbreaking initiative to preserve the natural beauty of India's national parks, Jaanhavi J Gore, Dishita M and Samarth P. from Excel Public School, Mysuru, have introduced a novel project called Green Dreams with the support of their ATL in charge Jyoti Joseph this innovative solution addresses the pressing issue of plastic waste littered by visitors in these cherished ecological zones.

India's national parks and ecological reserves are renowned for their natural splendor, but increasing plastic waste has jeopardized their pristine environments. The students, inspired by the need to protect these natural habitats, designed Green Dreams to enforce responsible waste management among park visitors.

Green Dreams employs a unique QR code-based system that links the entrance fee to a refundable deposit. Upon entering the park, visitors receive a receipt with a QR code, and their vehicle's windows and doors are sealed with stickers based on the vehicle's ventilation. These stickers serve as a deterrent against littering: any tampering or breaking of the seals results in a hefty fine assessed at the exit gate and visitors are also provided with a reusable trash bag and a vomit bag at the entrance. They are instructed to collect all their waste, especially plastic items like wrappers and bottles, in the bag. This waste is then disposed of at the exit gate, where the trash bag is returned, and the QR code receipt is checked for refund eligibility.

The project envisions the integration of Fastag-like technology for a seamless fee and fine collection and an automatic sticker sealing machine for efficient operations. By offering a practical and scalable solution, Green Dreams aims to inspire nationwide adoption across India's national parks and ecological zones.

Through Green Dreams, the team not only seeks to reduce plastic waste but also to foster a culture of environmental responsibility among park visitors. This initiative stands as a testament to the student's commitment to sustainable development and the protection of our natural heritage.

ATL UID - cbd03014
ATL MARATHON 2022 REGISTRATION ID - 111267534
NAME OF THE SCHOOL - Swami Atmanand Government Multipurpose Hr Sec School
NAME OF THE TEAM - Dr Kalam Science Club
TEAM MEMBERS - Harsh Shrivastava, Aryan Dewangan and Dev Kumar Prajapati
ATL IN-CHARGE - Dr Dhananjay Pandey
INNOVATION TITLE - Water Hycinath
STATE - Chhattisgarh

Water hyacinth is often regarded as a curse, choking rivers and disrupting aquatic ecosystems. During a routine visit to their community, the students learned about the detrimental effects of this invasive plant on the River Arpa. Inspired by the potential to turn this problem into a profitable solution, they decided to repurpose water hyacinth into useful products.

Harsh Shrivastava, Aryan Dewangan, and Dev Kumar Prajapati from Swami Atmanand Govt Multipurpose Hr Sec School have ingeniously tackled the issue of water hyacinth infestation in rivers by converting this ecological nuisance into valuable products. Guided by ATL in-charge Dr. Dhananjay Pandey, their project, aptly named Water Hyacinth, aims to restore ecological balance while creating economic opportunities.

After extensive design thinking and ideation phases, the team focused on creating two primary products: Talpatri and Activated Charcoal. Talpatri is made from processed water hyacinth which is ideal for use as dining mats in large social gatherings. Activated charcoal, on the other hand, has wide applications in medical and cleaning processes.

Their innovative approach offers multiple advantages. By converting water hyacinth into valuable products, they not only address water pollution but also tackle sewage problems efficiently. This transformation process reduces river pollution to nearly nil, while the production of Talpatri and activated charcoal generates profits and creates jobs, positively impacting the Indian economy.

The business scope for their products is promising as per the students' research the global activated carbon market is projected to grow from USD 5.7 billion in 2021 to USD 8.9 billion by 2026, at a CAGR of 9.3%. The initial target markets include hotels and chemical laboratories.

The Water Hyacinth project exemplifies how environmental challenges can be converted into economic opportunities, fostering sustainability and innovation in India.

ATL UID - cbd03014
ATL MARATHON 2022 REGISTRATION ID - 111284344
NAME OF THE SCHOOL - Swami Atmanand Government Multipurpose Hr Sec School
NAME OF THE TEAM - Dr Kalam Science Club
TEAM MEMBERS - Archit Modi, Pankaj Kewat and Mohnish Dhruv
ATL IN-CHARGE - Dr Dhananjay Pandey
INNOVATION TITLE - Atal Solar Toy Train
STATE - Chhattisgarh

In a remarkable stride towards sustainability, three inventive students from Swami Atmanand Govt Multipurpose Hr Sec School—Archit Modi, Pankaj Kewat, and Mohnish Dhruv—have created the Atal Solar Toy Train (ASTT) with the guidance and support of Dr. Dhananjay Pandey, this innovative project aims to reduce the carbon footprint in zoos by replacing conventional toy trains with a solar-powered alternative.

The inspiration for the ASTT stemmed from a community visit where the team posed a simple yet crucial question: "Does a toy train hamper the environment of the zoo, particularly in terms of air pollution?" An overwhelming 82 out of 100 community members affirmed the detrimental impact. This feedback solidified their problem statement: "To build a zoo toy train with a solar operating system to reduce carbon footprints."

Through extensive research and expert consultations, the team concluded that toy trains running on petrol, diesel, and even batteries contribute significantly to carbon emissions and air pollution. The solution? The Atal Solar Toy Train, which harnesses clean, abundant solar energy is particularly apt given the location's proximity to the Tropic of Cancer.

The ASTT is ingeniously constructed with various lightweight strips, ensuring flexibility and reduced energy consumption. Equipped with two 12V DC motors, rechargeable batteries, and solar panels, the train operates efficiently while minimizing environmental impact. After a 20-minute solar charge, the train runs continuously for 52 minutes, showcasing impressive operational efficiency.

This project is innovative because it eliminates greenhouse gas emissions, promoting a healthier environment for zoo inhabitants and visitors. Second, solar energy reduces operational costs, allowing for cheaper ticket prices and attracting more tourists, thus boosting zoo revenue. Lastly, the solar-powered train is low-maintenance and easy to operate.

Archit, Pankaj, and Mohnish's Atal Solar Toy Train is a beacon of eco-friendly innovation, paving the way for sustainable attractions in zoos and parks worldwide. Their project not only addresses environmental concerns but also enhances the visitor experience, demonstrating the power of young minds in creating a greener future.

ATL UID - 31407551
ATL MARATHON 2022 REGISTRATION ID - 111440254
NAME OF THE SCHOOL - ZPHS Dharmavaram
NAME OF THE TEAM - ATL DVM 2022 - 23
TEAM MEMBERS - V Yasaswini, M Madhuri and V Varaprasad
ATL IN-CHARGE - Mr. V Ramesh
INNOVATION TITLE - Paper and Plastic free packaging
STATE - Andhra Pradesh

In a remarkable feat of innovation and environmental consciousness, V Yasaswini, M Madhuri, and V Varaprasad from ZPHS Dharmavaram have developed a groundbreaking alternative to traditional paper and plastic packaging. With guidance from their ATL in-charge, Mr. V Ramesh, these young minds created sustainable packaging solutions using banana plant stems, an abundant bio-waste.

Yasaswini shared her inspiration, saying, "In my 8th class, I participated in a painting competition on pollution. Researching the topic, I was shocked to learn that plastic could surpass fish in the oceans by 2030. This, coupled with the rapid decline in forest areas due to paper production, highlighted the urgent need for alternatives. I initially developed a digital paper app on the MIT App Inventor platform to reduce paper usage. Later, I focused on replacing paper and plastic in the packaging industry with bio-waste." Their innovative solution involves creating corrugated sheets from banana plant stems, which are strong, lightweight, durable, and flexible. Unlike traditional methods, which often leave banana stems as agricultural waste, this novel technology converts them into valuable materials for packaging boxes and cardboard sheets.

The potential impact of this innovation is significant. As per the secondary research by the team, the Indian corrugated box market, valued at $6.5 billion in 2022, is expected to nearly double by 2028. The banana bio-fiber corrugated boxes are not only more affordable, costing 30% less than paper-based counterparts, but also offer a sustainable alternative that addresses both deforestation and plastic pollution.

Their venture, Matty Se, was incubated in the Andhra Pradesh Innovation Society in 2023 and showcased at the National Technology Day exhibition in New Delhi. These young innovators are poised to make a substantial impact on the packaging industry and the environment.

ATL UID - 31622934
ATL MARATHON 2022 REGISTRATION ID - 111176634
NAME OF THE SCHOOL - DAV Public School, Bistupur
NAME OF THE TEAM - Team Green
TEAM MEMBERS - Ayush Jha, C. Prem Kumar and Arkasree Nayak
ATL IN-CHARGE - Mousumi Bhattacharjee
INNOVATION TITLE - India's Green Walk
STATE - Jharkhand

In an inspiring leap towards a sustainable future, Ayush Jha, C. Prem Kumar, and Arkasree Nayak from DAV Public School, Bistupur, Jharkhand have developed a groundbreaking project under the guidance of ATL incharge Mousumi Bhattacharjee. Their invention, dubbed India's Green Walk, leverages piezoelectric technology to generate electricity through the simple act of walking.

As per the secondary research done by the team, electricity production accounts for about 35% of pollution in India, with coal-fired thermal power being the primary culprit. Despite a doubling of installed power generation capacity from 148 Gigawatts to 288 Gigawatts between 2008 and 2015, rural areas still face power irregularities, leaving 10% to 15% of the population in darkness. Currently, India produces approximately 1.28 metric tons of air pollution annually, necessitating urgent action to mitigate this environmental crisis.

Ayush, Prem Kumar, and Arkasree envision a world where electricity is generated with every step. Special devices called piezoelectric transducers convert mechanical pressure into electric charges. When pressure is applied to these transducers, their structure changes, resulting in electro-negative or positive charges that are then converted into electric energy.

This innovative project not only promotes renewable energy but also encourages a healthier lifestyle. By walking, individuals can contribute to a 25% to 50% reduction in electricity costs and a 50% to 60% decrease in pollution. This technology promises a more efficient and reliable supply of electricity across India.

Join Ayush, Prem Kumar, and Arkasree in their journey towards a greener future. Together, let's make every step count!

ATL UID - 13391086

ATL MARATHON 2022 REGISTRATION ID - 111337524

NAME OF THE SCHOOL - Chinmaya Vidyalaya Srimathi Lingammal Ramaraju Matriculation Higher Secondary School

NAME OF THE TEAM - Child Environmentalists

TEAM MEMBERS - S.Santhoshkumar, K.Sriram and V.Rijutes

ATL IN-CHARGE - Mr. Prabhakaran B

INNOVATION TITLE - Automatic Chimney for Indoors with activated carbon filter

STATE - Tamil Nadu

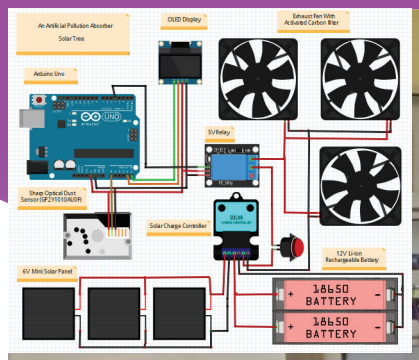
In a significant leap toward improving indoor air quality, S. Santhoshkumar, K. Sriram, and V. Rijutesh from Chinmaya Vidyalaya Srimathi Lingammal Ramaraju Matriculation Higher Secondary School, Tamilnadu have developed an Automatic Chimney for Indoors with an activated carbon filter. Guided by ATL in-charge Mr. Prabhakaran B, their innovation addresses the harmful effects of cooking smoke, which is linked to respiratory infections, chronic illnesses, and coronary heart diseases.

The students' prototype is designed to extract carbon monoxide (CO) and other toxic gases from the air, using an activated carbon filter to absorb these pollutants without emitting them back into the environment. This is achieved with the help of an MQ-7 gas sensor, interfaced with an Arduino Uno board. When smoke is detected, the sensor activates a fan that directs the smoke to the activated carbon filter, ensuring that harmful particles are removed.

This automatic chimney effectively extracts smoke particles, toxic gases like CO, chemicals, and volatile organic compounds (VOCs) from the air. It is a practical solution for homes, hotel kitchens, and industries where cooking smoke and other toxic emissions are common. By preventing the inhalation of these pollutants, the device significantly enhances air quality and reduces health risks.

The benefits of this innovation are substantial. Improved air quality can reduce the risk of respiratory problems such as asthma and allergies, lessen eye and throat irritation, and eliminate lingering cooking odors. Overall, this invention promises to improve the health and well-being of individuals exposed to indoor pollutants.

S. Santhoshkumar, K. Sriram, and V. Rijutesh's Automatic Chimney is a forward-thinking solution that combines technology and health consciousness, offering a cleaner, safer environment for all.



ATL UID - 13391086

ATL MARATHON 2022 REGISTRATION ID - 111422424

NAME OF THE SCHOOL - Chinmaya Vidyalaya Srimathi Lingammal Ramaraju Matriculation Higher Secondary School

NAME OF THE TEAM - Environmental Activists

TEAM MEMBERS - R.Nithyasri Gandhimathi, M.Shree Pranavi and J. Latikaa Janani

ATL IN-CHARGE - Mr. Prabhakaran B

INNOVATION TITLE - Air quality monitoring and filtration using activated carbon filter (An Artificial Pollution Absorbing Solar Tree)

STATE - Tamil Nadu

In a remarkable stride towards combating air pollution, R. Nithyasri Gandhimathi, M. Shree Pranavi, and J. Latikaa Janani from Chinmaya Vidyalaya Srimathi Lingammal Ramaraju Matriculation Higher Secondary School, Tamilnadu have developed an innovative solution: an Air Quality Monitoring and Filtration system using an activated carbon filter, aptly named the Artificial Pollution Absorbing Solar Tree. Under the guidance of ATL in-charge Mr. Prabhakaran B, this project aims to address the pressing issue of air pollution, a major health hazard linked to respiratory problems, heart disease, and cancer.

The students' model uses a DSM501A dust sensor, an OLED display, and an activated carbon filter. The dust sensor measures air quality by detecting particle concentrations. Depending on the levels of PM2.5 and PM10 particles, messages ranging from "Clean" to "Hazard" are displayed. When particle concentrations exceed 10,000, the system automatically activates the carbon filter to absorb pollutants.

This innovative system not only monitors air quality but also helps enforce air quality standards by providing data to assess compliance. It can lead to enforcement actions against polluters and promote cleaner practices. By addressing PM2.5 particles, which pose the greatest health risk, the model significantly enhances public health.

Air quality is a critical indicator of environmental health. This project underscores the importance of sustainable practices and the need for government initiatives to install such artificial pollution-absorbing trees in frequently polluted areas. The students plan to raise awareness through social media, demonstrating their model's implementation and its potential to reduce air pollution.

R. Nithyasri Gandhimathi, M. Shree Pranavi, and J. Latikaa Janani's invention is a vital step towards cleaner air and healthier lives, showcasing the power of youth-driven innovation.

ATL UID - 19845829
ATL MARATHON 2022 REGISTRATION ID - 111484494
NAME OF THE SCHOOL - Spic Nagar Higher Secondary School
NAME OF THE TEAM - Twinkleprenuers
TEAM MEMBERS - Subiksha M, Prarthana R and Sahana R
ATL IN-CHARGE - Jithamol B
INNOVATION TITLE - CO2 Armour
STATE - Tamil Nadu

In a groundbreaking initiative to combat air pollution and improve public health, Subiksha M, Prarthana R, and Sahana R from Spic Nagar Higher Secondary School, Tamilnadu have developed the innovative "CO2 Armour." Under the expert guidance of ATL in-charge Jithamol B, these young innovators have created a device aimed at addressing severe health issues caused by elevated carbon dioxide (CO2) levels in rural industrial areas of Tamil Nadu.

Residents in these areas have been grappling with a range of health problems, including headaches, anxiety, sneezing, coughing, chronic obstructive pulmonary disease (COPD), and asthma, all linked to CO2 levels exceeding the permissible limit of 1000 parts per million (PPM). Recognizing the urgent need for an effective solution, the team designed CO2 Armour to tackle this environmental challenge.

The CO2 Armour operates through a sophisticated chemical process involving two fans that draw in polluted air and expel purified air. Inside the device, two chambers are filled with Potassium Hydroxide (KOH) pellets, which react with CO2 to produce Potassium Carbonate. This byproduct, used in soap and fertilizer production, contributes to a circular economy by repurposing CO2.

Beyond reducing atmospheric CO2, CO2 Armour integrates an IoT-based monitoring system that tracks temperature, humidity, and air quality, ensuring optimal performance. The device's easy maintenance, including pellet replacement and cleaning, makes it a practical solution for ongoing air quality management.

CO2 Armour not only aims to mitigate health issues but also supports Sustainable Development Goal 3 (SDG 3) by promoting better health and well-being. With its potential to lower carbon footprints and convert smoke into water vapor, CO2 Armour represents a significant advancement in environmental and health protection.

ATL UID - 15678810
ATL MARATHON 2022 REGISTRATION ID - 111798604
NAME OF THE SCHOOL - Nagarjuna Model School
NAME OF THE TEAM - Young Inventors
TEAM MEMBERS - S. Vedavyas, B. Vijith Abhilash and S. Abdul Raheem
ATL IN-CHARGE - Phaneendra J
INNOVATION TITLE - Converting Carbon dioxide into Oxygen
STATE - Andhra Pradesh

In a groundbreaking effort to combat climate change, S. Vedavyas, B. Vijith Abhilash, and S. Abdul Raheem from Nagarjuna Model School have devised an innovative project: "Converting Carbon Dioxide into Carbon and Oxygen." Guided by ATL in-charge Mr. Phaneendra J, these young minds are addressing one of the planet's most pressing issues by breaking down CO_2 into its basic elements through specific chemical reactions.

Their project employs combination and decomposition reactions to separate CO_2 into solid carbon and oxygen gas. The solid carbon can be repurposed in various industrial processes, while the oxygen is released back into the atmosphere, enhancing air quality. By optimizing catalysts and reaction conditions, the team aims to achieve this conversion efficiently and sustainably.

This dual-benefit approach not only mitigates CO_2 levels but also produces valuable industrial materials. The project directly tackles environmental challenges like global warming, acid rain, and health problems caused by polluted air. The students' motivation stems from the urgent need to address the environmental crisis caused by rising CO_2 emissions from deforestation and industrial activities.

Currently in the theoretical research stage, the team's focus is on developing and optimizing the chemical reactions for CO_2 conversion. With further development and practical application, their technology holds the promise of significantly reducing CO_2 emissions, improving air quality, and creating a sustainable and healthier environment for future generations.

S. Vedavyas, B. Vijith Abhilash, and S. Abdul Raheem's innovative project exemplifies how young innovators can contribute to solving global challenges, paving the way for a cleaner, greener future.

ATL UID - 25285855
ATL MARATHON 2022 REGISTRATION ID - 111733144
NAME OF THE SCHOOL - SDM English Medium School, CBSE, Ujire
NAME OF THE TEAM - Future Scientist
TEAM MEMBERS - Pavankrishna Armbudathaya D and M Sohan Shetty
ATL IN-CHARGE - Neetha Jain
INNOVATION TITLE - Smart Solar Tracker
STATE - Karnataka

In the serene town of Ujire, Karnataka, two young innovators, Pavankrishna Armbudathaya D and M. Sohan Shetty guided by ATL Incharge Neetha jain, embarked on a mission to revolutionize solar energy. Their passion for sustainable solutions led them to develop a solar tracker, a device designed to maximize the efficiency of solar panels.

Their innovation, a solar tracker, was born out of a simple observation: traditional solar panels were inefficient, wasting much of the sun's energy. Determined to improve this, Pavankrishna and Sohan dedicated countless hours to developing a device that could maximize the efficiency of solar panels by ensuring they always faced the sun.

After overcoming numerous challenges and refining their design, Pavankrishna and Sohan created a prototype that represented a significant breakthrough in solar technology. Their solar tracker, equipped with advanced sensors and a microcontroller, could accurately track the sun's movement and adjust the solar panel's position accordingly.

The potential impact of their innovation was immense. By increasing the efficiency of solar panels, their solar tracker could help reduce carbon emissions, lower energy costs, and promote sustainable energy practices. Imagine a world where rooftops and fields were covered with smart solar panels, capturing the sun's energy with unprecedented efficiency.

Scaling up their project could revolutionize solar energy on a global scale. Mass production of their solar tracker could make it accessible to individuals and businesses worldwide, empowering them to reduce their carbon footprint and contribute to a cleaner planet. Partnerships with renewable energy companies could accelerate the deployment of their technology, leading to a significant increase in solar energy adoption.

Pavankrishna and Sohan's journey was a testament to the power of innovation and the potential of young minds to make a lasting impact on the world. Their solar tracker was more than just a device; it was a symbol of hope for a sustainable future. As they continued to develop and refine their technology, they envisioned a world where clean energy was abundant and accessible to all.

ATL UID - 623211505
ATL MARATHON 2022 REGISTRATION ID - 111752264
NAME OF THE SCHOOL - Isha Vidhya Matric Hr. Sec. School
NAME OF THE TEAM - Shadow boys
TEAM MEMBERS - Mariselvam G and Mariappan S
ATL IN-CHARGE - Rajalakshmi R
INNOVATION TITLE - Solar tricycle
STATE - Tamil Nadu

In the heart of Tamil Nadu, India, at the prestigious Isha Vidhya Matric HR. Sec. School, two young innovators, Mariselvam G and Mariappan S, were deeply concerned about the growing environmental challenges caused by heavy vehicle usage. Inspired by their passion for sustainability and their desire to make a positive impact, they embarked on a journey to create a more eco-friendly transportation solution.

Under the guidance of their mentor, Rajalakshmi R, Mariselvam and Mariappan developed a revolutionary solar tricycle. This innovative vehicle was equipped with solar panels, allowing it to harness the power of the sun and charge its integrated battery. By reducing reliance on fossil fuels, the solar tricycle aims to mitigate the harmful effects of greenhouse gas emissions and contribute to a cleaner, healthier environment.

The potential impact of the solar tricycle was immense. It offered a practical and affordable transportation alternative for individuals and communities, especially in rural areas with limited access to electricity. The vehicle's user-friendly design and low operating costs made it a compelling choice for those seeking to reduce their carbon footprint.

Mariselvam and Mariappan's vision extended beyond the creation of a single prototype. They aspired to scale up their project and make the solar tricycle widely available. By partnering with manufacturers and government agencies, they hoped to bring their invention to market and encourage its adoption on a larger scale.

The solar tricycle represented a significant step towards a greener future. It was a testament to the ingenuity and determination of young minds who were committed to addressing the pressing environmental challenges of our time. Mariselvam and Mariappan's innovation had the potential to inspire others and spark a movement towards sustainable transportation.

सत्यमेव जयते
NITI Aayog

ATAL INNOVATION MISSION

ATL UID - 28941113
ATL MARATHON 2022 REGISTRATION ID - 111649344
NAME OF THE SCHOOL - Scottish High International School
NAME OF THE TEAM - SHIS Curious Minds
TEAM MEMBERS - Ojas Lath, Ojasvi Singla
ATL IN-CHARGE - Mrs. Sonia Jain
INNOVATION TITLE - Eco - Friendly Cardboard
STATE - Haryana

In a world increasingly threatened by environmental degradation, Ojas Lath and Ojasvi Singla have devised an innovative solution addressing two critical issues: deforestation and waste management. Their project focuses on creating eco-friendly cardboard from organic waste materials, showcasing their dedication to sustainability and environmental preservation.

Concerned by the alarming rate of deforestation and the devastating environmental impact of traditional paper production, Ojas and Ojasvi sought a sustainable alternative. They were particularly troubled by the billions of trees lost annually due to industrial practices, which exacerbate carbon emissions and ecosystem destruction. Motivated to make a change, they developed a solution that reduces reliance on trees while repurposing waste that would otherwise pollute the environment.

Their innovation uses banana peels and groundnut shells—abundant, biodegradable waste materials. The tensile strength and flexibility of banana peels, combined with the robustness of groundnut shells, enabled them to create a durable, eco-friendly alternative to traditional cardboard. This solution not only addresses deforestation but also offers an effective method for managing organic waste, making it a cost-efficient option for the packaging industry.

Ojas and Ojasvi's waste-based cardboard is recyclable, biodegradable, and produced using renewable energy, minimizing its ecological footprint. Their approach conserves natural resources and reduces carbon emissions, aligning with global sustainability goals.

Looking ahead, the potential impact of their project is immense. They envision their product being widely adopted across industries, reducing dependence on tree-based packaging and fostering a circular economy. By partnering with industries producing organic waste, they plan to scale up production and make their innovation accessible globally. Awareness campaigns and collaborations with environmental organizations could further drive demand and accelerate its adoption.

Ojas and Ojasvi's project exemplifies how creativity, passion, and collaboration can lead to meaningful environmental change. Their initiative addresses pressing ecological challenges while inspiring others to rethink traditional practices, paving the way for a sustainable future.

ATL UID - 4586771
ATL MARATHON 2022 REGISTRATION ID - 111756634
NAME OF THE SCHOOL - D.E.S. High School and Jr. College, Datala, Maharashtra
NAME OF THE TEAM - Team Genius
TEAM MEMBERS - Pushkar Anant Patil, Shlok Vijay Choudhari
ATL IN-CHARGE - Vinay P. Narkhede
INNOVATION TITLE - Road Divider Electricity Generator and Pollution Controller
STATE - Maharashtra

Urban areas today are confronted with two growing concerns: rising air pollution from heavy traffic and the ever-increasing demand for street lighting. These problems not only impact public health and the environment but also place a strain on energy resources, leading to higher costs for cities. Traditional solutions to these challenges often require significant infrastructure investments and do not fully utilize renewable energy sources. With this in mind, Pushkar Anant Patil and Shlok Vijay Choudhari recognized the urgent need for an innovative solution that could simultaneously address both air pollution and energy consumption in urban settings.

The motivation for their project, "Road Divider Electricity Generator and Pollution Controller," stems from the desire to improve urban living conditions by creating a sustainable, cost-effective system that generates electricity while helping reduce air pollution. Their solution ingeniously combines these two critical issues into one design by utilizing the airflow generated by passing vehicles.

Their project consists of two main components. First, the **Electricity Generation System** captures the kinetic energy produced by moving vehicles. As cars and trucks pass by, the air pressure they generate pushes a vertical blade, causing it to rotate. This rotational energy drives a generator, which then produces electricity. This energy can be fed directly into the grid or used to power streetlights, reducing the need for conventional energy sources. Secondly, the **Pollution Control System** harnesses the same vehicular airflow to power wind turbines. These turbines draw in polluted air, which is then passed through an advanced filtration system, reducing harmful particles and improving air quality. To maximize energy production, the system also integrates solar panels that further enhance electricity generation.

Pushkar and Shlok's prototype was built with simple, readily available materials like PVC sheets and a small generator, making their project both scalable and affordable. Their solution offers multiple benefits: generating renewable electricity, reducing reliance on traditional energy, cutting street lighting costs, and lowering air pollution levels in congested urban areas.

Looking ahead, Pushkar and Shlok plan to refine and test their prototype in real-world traffic conditions. Their goal is to further optimize the design, ensuring it can be efficiently implemented on a large scale. The innovation also opens doors to broader applications, including the possibility of charging electric vehicles directly from the energy harvested by traffic.

ATL UID - 27593332
ATL MARATHON 2022 REGISTRATION ID - 111734014
NAME OF THE SCHOOL - Kendriya Vidyalaya Air Force Station Yelahanka
NAME OF THE TEAM - The Inventobros
TEAM MEMBERS - Satwik Bhusanur, Bhuvan Rajannavar
ATL IN-CHARGE - Joyce Sebastian
INNOVATION TITLE - Smart Solar Extractor
STATE - Karnataka

Satwik Bhusanur and Bhuvan Rajannavar's motivation for developing the Smart Solar Extractor (SSE) is deeply rooted in their passion for science and innovation, paired with a strong commitment to addressing critical environmental issues. Their focus was on the vast yet underutilized solar energy available to us—over 173 thousand Tera Watts, much of which remains wasted.

Driven by a desire to harness this abundant resource more efficiently, they set out to enhance the performance of solar panels. Their goal was to reduce carbon footprints and contribute to a more sustainable future by improving the effectiveness of solar energy capture.

The Smart Solar Extractor (SSE) is a revolutionary approach to enhancing solar panel efficiency. Addressing the challenge of capturing the immense amount of solar energy available, the SSE incorporates a novel design that improves energy absorption throughout the day.

Traditional solar panels struggle with efficiency as the sun's position changes, but the SSE addresses this issue with a sophisticated arrangement of solar panels, convex lenses, and mirrors within a truncated octahedron structure.

Scaling up the Smart Solar Extractor (SSE) could transform the solar energy industry by improving efficiency and accessibility. Key strategies for expansion include mass production to reduce unit costs, making the SSE affordable for widespread residential and commercial use.

The design could be further refined with more durable materials and advanced manufacturing techniques to enhance performance while keeping costs low.

By deploying the SSE in various environments—from urban rooftops to rural solar farms—the project could significantly boost the adoption of renewable energy sources, decrease carbon emissions, and promote global sustainability. This innovation holds the promise of setting new benchmarks in the solar industry and advancing the transition to cleaner, more efficient energy solutions.

Theme: Sanitation

ATL UID - 520410101
ATL MARATHON 2022 REGISTRATION ID - 111574274
NAME OF THE SCHOOL - Excel Public School, Mysuru
NAME OF THE TEAM - Automatic Toilet Cleaner
TEAM MEMBERS - Abhinav A, Charitha K L & Manvitha Shivashankar
ATL IN-CHARGE - Ms. Jyothi Joseph
INNOVATION TITLE - Automatic Toilet Cleaner
STATE - Karnataka

The motivation behind the Automatic Toilet Cleaner project stemmed from a profound concern for public health and hygiene. Public restrooms, essential yet often poorly maintained, pose significant health risks due to the spread of bacteria and diseases. Abhinav A, Charitha K L, and Manvitha Shivashankar from Excel Public School witnessed the adverse effects of unsanitary restrooms, especially in densely populated areas. This highlighted the urgent need for a practical solution.

The COVID-19 pandemic underscored the critical importance of sanitation and hygiene in preventing disease transmission. This global health crisis inspired the team, with the support of their Atal Tinkering Lab incharge, Ms. Jyothi Joseph, to develop technology addressing public restroom cleanliness. Their goal was to create an innovative solution that not only reduces infection spread but also minimizes human intervention, ensuring consistent and thorough cleaning.

Imagine a world where public restrooms are always clean and hygienic. The Automatic Toilet Cleaner turns this vision into reality. Governed by an Arduino UNO, the device features a robotic arm with brushes designed to clean both the toilet seat and bowl efficiently. With a press of a button, the arm pivots, lowers, and initiates a thorough cleaning process using water and cleaning solutions, followed by scrubbing and drying.

The cleaning sequence includes spraying water and solution and a dual brush system that rotates both clockwise and counterclockwise to ensure no spot is left untouched. After cleaning, a servo motor activates an automatic flush, completing the process. The Automatic Toilet Cleaner revolutionizes restroom maintenance, ensuring a consistently clean environment and significantly reducing the spread of bacteria and diseases.

Designed for high-traffic areas like airports, schools, and hospitals, this innovation represents the future of public restroom hygiene. The team has plans for further development and collaboration with city governments and private enterprises, Abhinav, Charitha, and Manvitha creation promises to set a new standard in urban sanitation. This is the future of sanitation- a remarkable technological advancement.

ATL UID - 3d242526

ATL MARATHON 2022 REGISTRATION ID - 111284314

NAME OF THE SCHOOL - Kisan Intermediate College, Sakhopar Kushinagar

NAME OF THE TEAM - Lotus Group

TEAM MEMBERS - Rahul Soni, Mukesh Patel, Mrityunjay Singh

ATL IN-CHARGE - Mr. Yashwant Singh

INNOVATION TITLE - Daksha Urinal

STATE - Uttar Pradesh

Last year, during a visit to Gorakhpur, Rahul Soni, Mukesh Patel, and Mrityunjay Singh from Kisan Intermediate College Sakhopar Kushinagar, U.P., were appalled by the state of public urinals at the bus station. Broken taps, continuous water wastage, and unhygienic conditions struck a chord with them. This disturbing scene repeated at the newly constructed urinals at Kasya bus station, sparking an idea to address these widespread issues.

Upon surveying several public urinals at schools, colleges, hospitals, and busy intersections, they identified common problems: broken taps, continuous water flow, lack of water, and overall unsanitary conditions. These issues not only wasted water but also posed significant health risks.

Motivated to find a solution, the trio designed the 'Daksha Urinal'—a unique system where taps and pipes are hidden, ensuring cleanliness and efficiency. When a person steps on the urinal's platform, the pressure activates an underground valve, allowing water to flow for flushing. The system stops the water flow once the user steps off, thus conserving water.

The prototype, submitted to ATL Marathon 2022-23, was selected among the top 100 innovations. The urinal system's key feature is its pressure-sensitive platform, designed to activate with minimal weight, making it functional for all users, including children and adults. It ensures hygiene and water efficiency, particularly beneficial in public places like railway stations, bus depots, schools, and hospitals.

Their ATL incharge under the guidance of ATL in-charge Mr. Yashwant Singh guided and supported them throughout the project.

The 'Daksha Urinal' promises to revolutionize public sanitation across India. This invention is a step forward in public hygiene, addressing a critical need with an innovative approach.

Theme:

Agricultural Innovation

ATL UID - 520410101
ATL MARATHON 2022 REGISTRATION ID - 111457224
NAME OF THE SCHOOL - Excel Public School, Mysuru
NAME OF THE TEAM - Agri Boon – Verticleture
TEAM MEMBERS - Noopura P, Tanushka A and Dhruva R
ATL IN-CHARGE - Ms. Jyoti Joseph
INNOVATION TITLE - Agri Boon – Verticleture
STATE - Karnataka

In an inspiring move to uplift the livelihoods of Indian farmers, Noopura P, Tanushka A, and Dhruva R from Excel Public School, Mysuru, have created Agri Boon - Verticleture. This inventive agricultural model aims to address the economic challenges faced by Indian farmers, particularly those engaged in coconut farming.

The motivation for Agri Boon - Verticleture stemmed from the alarming disparities in farmers' incomes across India. They read a report by the Ministry of Agriculture & Farmers Welfare which revealed that the average monthly income of Indian agricultural households is Rs.10,218, with farmers in Meghalaya earning Rs.29,348, while those in Jharkhand earn merely Rs.4,895. Observing the underutilized space around coconut trees, the students envisioned maximizing this space to grow additional crops, thereby enhancing farmers' income.

Agri Boon - Verticleture utilizes two innovative systems to maximize land use in coconut farms: the Pull and pull-and-down system and the Bridge System.

The Pull Up and Down System grows microgreens and orchids in the vertical space beneath coconut fronds. It includes a protective net and a motorized pulley mechanism for easy sowing, watering, and harvesting.

The Bridge System creates a bridge between two coconut trees to hang orchids in coconut shells, using a motorized mechanism for maintenance and harvesting. Nets protect the orchids from falling coconuts.

These systems introduce high-value crops like microgreens and orchids, significantly boosting farmers' income. Microgreens offer high nutritional value and quick growth cycles, while orchids add commercial value.

The team got immense support from their ATL in-charge, Ms. Jyoti Joseph and their journey is marked by determination and innovation.

The Agri Boon - Verticleture project promotes sustainable farming practices and year-round production which is scalable and adaptable. It has the potential to transform agriculture by increasing income and productivity, driving rural economic development. The team is planning to train farmers in vertical farming techniques and implement the solution in trial farms, offering a promising future for Indian agriculture.

Theme: Nutrition

ATL UID - 520410101
ATL MARATHON 2022 REGISTRATION ID - 111548584
NAME OF THE SCHOOL - Excel Public School, Mysuru
NAME OF THE TEAM - Inventors
TEAM MEMBERS - Gahana H Prasad, Deeksha G, Asmitha Rao
ATL IN-CHARGE - Ms. Jyoti Joseph
INNOVATION TITLE - Nutrition Vending Machine
STATE - Karnataka

Gahana H Prasad, Deeksha G, and Asmitha Rao from Excel Public School, Mysuru, have pioneered the Nutrition Vending Machine, a project driven by the need to promote the significant nutritional benefits of millets they developed this under the guidance of their ATL in- charge Ms.Jyoti Joseph, this innovation aims to rebrand millets, making them appealing and accessible to urban and health-conscious consumers.

The motivation behind this project is rooted in the superior nutritional profile of millets. Rich in protein, iron, and calcium, millets aid in weight loss and manage lifestyle diseases, effectively addressing malnutrition and environmentally sustainable millets require less water and inputs, making them an eco-friendly crop with a low carbon and water footprint. The project seeks to overcome historical perceptions of millets as "poor man's food," aligning with the Indian government's initiative to promote millets, including the International Year of Millets 2023.

The Nutrition Vending Machine offers a quick, convenient way to enjoy millet, addressing barriers related to cooking time and taste preferences. By providing ready-to-drink millet malt in various flavors, the machine transforms the consumption experience, ensuring lump-free preparation. Its installation in workplaces and public spaces makes it accessible to a wide audience.

According to the team, promoting millets will support related industries and position India as a global hub for millet-based products while showcasing innovative technology.

The project has the potential to significantly impact public health by promoting millet consumption, combating malnutrition, and managing lifestyle diseases. Environmentally, it encourages sustainable agriculture, and economically, it supports growth in related industries like farming and processing. To scale it up, the team envisions expanding machine installations and diversifying product offerings by partnering with governments, health organizations, and private companies to amplify reach. The Nutrition Vending Machine is poised to transform millet consumption, benefiting health, the environment, and the economy.

ATL UID - 62ab11172
ATL MARATHON 2022 REGISTRATION ID - 111506754
NAME OF THE SCHOOL - DAV Public School, Bhubaneshwar
NAME OF THE TEAM - Agromushdavu
TEAM MEMBERS - Shreyansh Nayak and Bedant Agrawal
ATL IN-CHARGE - Mr. Tanmay Kumar Nayak
INNOVATION TITLE - Machine for Ready to Grow Oyster Mushroom Bags
STATE - Odisha

Shreyansh Nayak and Bedant Agrawal from DAV Public School Bhubaneswar were determined to address hunger and malnutrition in India therefore, they created a Machine for Ready to Grow Oyster Mushroom Bags under the guidance of their ATL in - charge Mr. Tanmay Kumar Nayak. With underweight, stunted, and wasted children under five still prevalent, they sought a solution to boost food production and consumption in rural areas.

Their research led them to Oyster Mushroom production, a nutritious crop grown from agricultural residues like paddy straw. Despite India producing 130 million tons of paddy straw annually, Oyster Mushroom production remained limited due to labor-intensive and contamination-prone processes.

In collaboration with women Self Help Groups, such as Jay Bajrangbali SHG in Kujanga Block, Shreyansh and Bedant identified the challenges in large-scale production. Guided by their ATL incharge Mr. Tanmay Kumar Nayak, they developed a prototype machine to automate and simplify the process. This portable machine cuts paddy straw, sterilizes it with ozone, inoculates it with mushroom mycelium, and packs it into polythene bags, creating ready-to-grow Oyster Mushroom bags.

Costing around fifty to sixty thousand rupees, this machine can be operated by community-level entrepreneurs, making it accessible to all farmers. This innovation not only enhances nutritional security but also increases rural income levels, addressing a critical aspect of hunger and malnutrition in India.

Theme: Substance Abuse

ATL UID - c5d66899
ATL MARATHON 2022 REGISTRATION ID - 111158584
NAME OF THE SCHOOL - Lakshmipat Singhania Academy
NAME OF THE TEAM - Safeswatch
TEAM MEMBERS - Chandramita Ghosh, Urvi Ray and Raunak Nath
ATL IN-CHARGE - Mr. Dipankar Pal
INNOVATION TITLE - Suraksha Saathi
STATE - West Bengal

In a bid to combat the escalating global crisis of drug abuse, Chandramita Ghosh, Urvi Ray, and Raunak Nath from Lakshmipat Singhania Academy have developed an innovative drug detection gel, "Sakha." Under the expert guidance of their ATL in-charge, Dipankar Pal, this pioneering solution addresses the urgent need for portable, non-invasive, and rapid drug detection.

Recognizing the limitations of current drug detection methods, the team designed a gel that hardens upon exposure to air and incorporates reagents for color spot testing. This gel can be applied to nails or any handy surface and, when dipped into a suspect drink, will change color if drugs are present. This user-friendly design provides immediate results, enabling swift decision-making to prevent drug-related incidents.

The inspiration for Sakha stemmed from the alarming increase in drug abuse, posing severe health, social, and security challenges worldwide. Traditional detection methods are often impractical for on-site use, underscoring the need for a more accessible solution. Sakha's portability and ease of use will make it a game-changer in this context.

To ensure Sakha's widespread adoption, the team envisions strategic partnerships and collaborations with law enforcement agencies, health organizations, and academic institutions. They also plan extensive marketing and awareness campaigns to promote the product, gather feedback, and facilitate continuous improvement.

Chandramita, Urvi, and Raunak's innovative drug-detecting gel not only offers a practical solution to a pressing problem but also exemplifies the potential of young minds to drive significant social impact. Their dedication and ingenuity promise to make Sakha an invaluable tool in the fight against drug abuse.

Theme: School Safety


SCHOOL BUS
STOP

ATL UID - ebf5379
ATL MARATHON 2022 REGISTRATION ID - 111350854
NAME OF THE SCHOOL - Seth Anadram Jaipuria School, Ghaziabad
NAME OF THE TEAM - Caution Tech
TEAM MEMBERS - Shourya Sharma, Navedya Singh and Soneesh Tomer
ATL IN-CHARGE - Ms. Raksha Ghildiyal
INNOVATION TITLE - Wild card: Smart Security and Attendance System.
STATE - Uttar Pradesh

Junior school students often face significant safety risks outside the school premises, and traditional safety measures are typically reactive. Recognizing this, Shourya Sharma, Navedya Singh, and Soneesh Tomer from Seth Anandram Jaipuria School, Ghaziabad, under the guidance of their ATL in charge Raksha Ghildiyal, have developed Wild Card: Smart security and attendance system a comprehensive security and attendance solution designed to create a safer and more efficient school environment.

Wild card: Smart security and attendance system addresses the critical need for real-time safety updates and efficient attendance tracking. The system integrates Wild Card stations equipped with facial recognition and RFID technology at school entrances and classroom doors. Students scan their Fortify ID cards at these stations, verifying authorization and recording attendance in real time. This data is securely updated on a website accessible to parents and school administrators, eliminating the need for manual roll calls and freeing up valuable classroom time for educational activities.

Beyondattendance,itenhancesschoolsecurity by ensuring only authorized individuals can enter, integrating with surveillance cameras and alarm systems to form a comprehensive security network. In emergencies, it can trigger alerts and lockdowns, allowing swift responses. Additionally, students carry smart location tracking devices, providing real-time location data to parents and enhancing communication and safety.

Wild Card's benefits extend to the classroom and library as well. The system includes Uurja, a noise detection system using Arduino microcontrollers to maintain a conducive learning environment. In the library, Fortify automates book issuance and transaction tracking, improving efficiency. Furthermore, a smart RFID locker system and RFID-based payment system in the cafeteria streamline storage and transactions, enhancing the overall school experience.

With plans to patent their unique technology, the team aims to install Fortify initially in their school's junior section, with a vision to expand across schools in Uttar Pradesh. By integrating advanced technologies like facial recognition, Fortify not only strengthens school security but also optimizes administrative processes, promising a safer, more organized, and more efficient educational environment for students and staff alike.

Theme: General

ATL UID - 8718288

ATL MARATHON 2022 REGISTRATION ID - 111789754

NAME OF THE SCHOOL - Jawahar Navodaya Vidyalaya Karaikal

NAME OF THE TEAM - Smart Home Makers

TEAM MEMBERS - K Abinaya, S Lavanya and R Uthiyameena

ATL IN-CHARGE - R Srinivasan

INNOVATION TITLE - 3D Map

STATE - Puducherry

K Abinaya, S Lavanya, and R Uthiyameena, students at Jawahar Navodaya Vidyalaya Karaikal, have developed a groundbreaking solution to a common household problem with their invention, the Smart 3D Map Container. Guided by their ATL in-charge, R Srinivasan, the students designed this innovative container to tackle the inconvenience of managing grocery supplies amidst busy work schedules.

Inspired by their own experiences of their parents struggling to keep track of groceries during hectic work hours, the students created the Smart 3D Map Container. This container features advanced sensors that measure the weight of its contents in real-time, cloud storage for accessing inventory information from anywhere, and notifications to reorder groceries when quantities are low. The user-friendly app also allows custom threshold levels for reminders, viewing historical data, and direct ordering of groceries.

The Smart 3D Map Container simplifies grocery management, reducing the time and effort required to track supplies and minimizing last-minute shopping trips. By providing accurate usage data and timely reminders, the container helps prevent over-purchasing and waste, promoting more efficient use of resources and reducing the carbon footprint. The project also inspires students to explore STEM concepts and develop technological solutions for real-world problems, enhancing their problem-solving skills and creativity.

K Abinaya, S Lavanya, and R Uthiyameena's Smart 3D Map Container is a testament to the power of innovative thinking and the positive impact that young minds can have on society.

GENERAL - MOBILE CHARGER

ATL UID - 15678810

ATL MARATHON 2022 REGISTRATION ID - 111661704

NAME OF THE SCHOOL - Nagarjuna Model School

NAME OF THE TEAM - NMS Innovators

TEAM MEMBERS - S. Muniba Muzmeen, S. Yogya Varshini and P. Gowthami

ATL IN-CHARGE - Phaneendra J

INNOVATION TITLE - Free Electricity Mobile Charger (FEMC)

STATE - Andhra Pradesh

Caught in the dark during a power outage with a dead phone, S. Muniba Muzmeen, S. Yogya Varshini, and P. Gowthami from Nagarjuna Model School were inspired to create the Free Electricity Mobile Charger (FEMC). Guided by Phaneendra J, they envisioned a solution to ensure continuous phone charging, even during blackouts.

The FEMC is a versatile charger that generates electricity using temperature differences or solar power. By placing a hot substance on a Thermoelectric Cooler (TEC) and ice at the bottom, the device converts thermal energy into electrical energy. Additionally, a solar panel ensures functionality even without ice or heat sources.

Portable and eco-friendly, the FEMC includes a resistor for stable charging, making it ideal for outdoor activities and areas with unreliable power. It's perfect for emergencies, utilizing natural temperature differences without emitting carbon dioxide.

The team wants to make some enhancements in this innovation in future which include a power bank for extra charge storage, increased ice storage space, AI integration for remote monitoring, and a container for flammable substances to provide heat.

To bring this innovation to the masses, the team plans to launch an online store, use email campaigns and Google Ads, and showcase the charger at trade shows and green events. Engaging with tech enthusiasts and eco-conscious users on social media, they aim to make the FEMC a global success.

This innovative project, under Phaneendra J's guidance, offers a reliable, sustainable, and portable charging solution for all.

GENERAL - LOCATION FINDER

ATL UID - 283318862

ATL MARATHON 2022 REGISTRATION ID - 111729934

NAME OF THE SCHOOL - Aiswarya Public School, Kollam

NAME OF THE TEAM - ATL Girls

TEAM MEMBERS - Sreenanda S Pillai, Fathima Sulthana F.S and Sreeya S

ATL IN-CHARGE - Megha Sabu

INNOVATION TITLE - Vision: The Perfect Route Finder

STATE - Kerala

Imagine wandering a new city without a reliable way to find the nearest bus stand or restaurant. This common problem inspired Sreenanda S. Pillai, Fathima Sulthana F.S., and Sreeya S. from Sreenanda.S.Pillai School to develop Vision: The Perfect Route Finder, a groundbreaking app designed to address the limitations of traditional GPS tools.

GPS apps require constant internet access, offer limited local information, and leave travelers vulnerable to unfair pricing, the team envisioned an all-in-one solution. Vision offers a comprehensive set of features: finding nearby transportation options, saving routes for offline use, providing local information about restaurants, health centers, and more, and ensuring fair travel rates.

Their innovative app helps users navigate new places with ease and efficiency. To scale up their project, they will promote Vision through engaging social media campaigns, eye-catching posters in tourist spots, and gathering user feedback for continuous improvement.

With the guidance of Ms. Megha Sabu, the team turned their travel frustrations into an app that simplifies and enhances the travel experience for everyone.

GENERAL - ROBOT

ATL UID - 30597614

ATL MARATHON 2022 REGISTRATION ID - 111772824

NAME OF THE SCHOOL - Carmel Convent School

NAME OF THE TEAM - EduTechCasper

TEAM MEMBERS - Sharanya Jain, Avneet Kaur, Mehwish Vinayak

ATL IN-CHARGE - Dr. Meenakshi Jindal

INNOVATION TITLE - Casper the Robot

STATE - Chandigarh

In a remarkable stride towards addressing the need for companionship during isolating times like the pandemic, Sharanya Jain, Avneet Kaur, and Mehwish Vinayak from Carmel Convent School, Chandigarh, have created Casper the Robot. Guided by ATL incharge Dr. Meenakshi Jindal, this invention aims to combat boredom and depression while providing a friendly companion when human interaction is limited.

Casper the Robot is a semi-anthropomorphic companion designed to entertain users with its interactive and quirky personality. It can display a wide range of emotions, nod or shake its head, and even function as an adjustable desk lamp. Powered by Arduino Nano and programmed using the Arduino IDE, Casper boasts multiple modes such as happy, sad, angry, and sleepy.

Beyond alleviating boredom and depression, Casper has potential applications in educational settings. It can assist teachers by playing pre-recorded educational messages and interacting with students to help them learn to count and master the alphabet. This engaging robot can spark curiosity and imagination in young minds, potentially inspiring future engineers and scientists.

In an exciting development, the team plans to scale up the project by adding an automated egg rotator feature. This will eliminate the need for manual egg rotation, as Casper will handle the task autonomously.

With Casper the Robot, Sharanya, Avneet, and Mehwish have created a versatile and engaging companion that not only provides emotional support but also serves as an innovative educational tool. Join them in welcoming Casper into homes and classrooms, where every interaction promises to brighten spirits and ignite imaginations.

GENERAL - ARTIFICIAL BROODER

ATL UID - 22854639

ATL MARATHON 2022 REGISTRATION ID - 111679264

NAME OF THE SCHOOL - Bharatiya Vidya Bhavan School Chevayur, Calicut.

NAME OF THE TEAM - Robo Kids

TEAM MEMBERS - Sanjay Sajith and Navaneeth Krishna S

ATL IN-CHARGE - Preeja V

INNOVATION TITLE - Artificial Brooder

STATE - Kerala

In a groundbreaking advancement for poultry farming, Sanjay Sajith and Navaneeth Krishna S from Bharatiya Vidya Bhavan School Chevayur, Calicut, have invented an Artificial Brooder. Under the guidance of ATL incharge Preeja V, their project addresses the unpredictability of natural brooding, which relies on variable environmental factors like temperature and rainfall.

The Artificial Brooder ensures eggs can hatch year-round, irrespective of weather conditions, using eco-friendly and inexpensive materials. Key components include a cardboard box chamber, a sensor, an incandescent bulb, and a thermostat.

This setup maintains a consistent temperature of 37.5 degrees Celsius inside the chamber. The sensor and incandescent bulb work together with the thermostat: when the temperature exceeds 37.5 degrees, the sensor cuts off power to the bulb. If the temperature drops below this threshold, the bulb switches on to restore the optimal temperature.

This innovative system guarantees successful egg hatching, making it a reliable solution regardless of external conditions. The use of affordable materials makes the brooder accessible to a broad audience.

Looking to the future, Sanjay and Navaneeth plan to add an automated egg rotator feature, which will eliminate the need for manual egg rotation by automatically turning the eggs at regular intervals.

With their Artificial Brooder, Sanjay and Navaneeth have created a reliable, eco-friendly, and affordable solution to ensure successful egg hatching year-round. Their invention promises to revolutionize poultry farming, offering consistent and efficient results to farmers everywhere.

GENERAL - VOTING MACHINE

ATL UID - 80121131

ATL MARATHON 2022 REGISTRATION ID - 111316114

NAME OF THE SCHOOL - Government Adarsh Vidyalaya Hunashyal P.B

NAME OF THE TEAM - C.N.R RAO

TEAM MEMBERS - Shweta Bellubbi, Sinchana Bhajantri and Preeti Badiger

ATL IN-CHARGE - Mr. Praanna Keshava Hegde

INNOVATION TITLE - Electronic Voting Machine for School Parliament Election

STATE - Karnataka

In a groundbreaking development, Shweta Bellubbi, Sinchana Bhajantri, and Preeti Badiger from Government Adarsh Vidyalaya Hunashyal P.B., Karnataka have invented an Electronic Voting Machine (EVM) tailored for school parliament elections. Under the insightful guidance of ATL in-charge Mr. Praanna Keshava Hegde, these young innovators have addressed the inefficiencies and environmental concerns associated with traditional voting methods.

Every year, schools conduct elections to form youth parliaments, a process that typically consumes significant time and human energy due to the use of paper ballots and manual vote counting. The traditional method is prone to errors, such as multiple voting by a single individual and issues during vote tallying. Furthermore, the global wastage of paper during these elections is a pressing concern.

Determined to find a solution, Shweta, Sinchana, and Preeti embarked on a mission to create an efficient and reliable voting system. Inspired by the EVMs used in national elections, they decided to build their own machine using Arduino Uno programs and push buttons. Despite facing numerous challenges with connections, vote storage for their 460-strong student body, and ensuring vote confirmation and accuracy, they persevered, they successfully developed a new EVM from scratch after two and a half months of rigorous work.

Their innovative EVM has transformed the school election process. It prevents paper wastage with an LCD screen, saves time, provides exact vote counts, and includes multiple cross-checks to confirm votes. A separate control unit ensures smooth operation, while a VVPAT system displays the candidate's name for voter verification. Costing only around Rs. 3500 to Rs. 4000, this low-cost solution has already conducted two successful school elections seamlessly.

Looking ahead, these young inventors are now working on making the EVM an IoT device to further simplify elections by allowing remote voting. Their invention not only offers a real election experience for students but also highlights the potential of youth innovation in addressing real-world problems.

GENERAL - LOAD WEIGHING TRUCK

ATL UID - 41246912

ATL MARATHON 2022 REGISTRATION ID - 111285814

NAME OF THE SCHOOL - Government High School Akkirampura

NAME OF THE TEAM - Vivekanmda 2

TEAM MEMBERS - Varsha R K and Bindu

ATL IN-CHARGE - B K Manjunatha

INNOVATION TITLE - Load Weighing Truck

STATE - Karnataka

In a remarkable innovation, Varsha R K and Bindu from Government High School Akkirampura, Karnataka have developed a Load Weighing Truck under the guidance of ATL in-charge B K Manjunatha. This project addresses the common issue faced by truck owners who need to weigh their loads, traditionally requiring a trip to a weighbridge.

The Load Weighing Truck is designed to measure any type of load directly within the truck, including vegetables, utensils, and more. This innovative solution eliminates the need for truck owners to visit weighbridges or use external weighing machines, providing a convenient and cost-effective alternative.

Their project is simple to implement and inexpensive to develop, making it accessible for widespread adoption. By integrating the weighing mechanism into the truck itself, this invention streamlines the process of load measurement, saving time and resources for truck owners.

This innovative project exemplifies how practical solutions can significantly impact everyday tasks, showcasing the ingenuity and problem-solving skills of these young students.

GENERAL - COOKING STOVE

ATL UID - 224212711

ATL MARATHON 2022 REGISTRATION ID - 111273354

NAME OF THE SCHOOL - DY Chougule Bharatesh High School, Belgavi

NAME OF THE TEAM - Sir C.V Raman

TEAM MEMBERS - Sarswati Mahesh Dalavi, Shradha Koparde and Pallavi Kompi

ATL IN-CHARGE - Ganpat Dinkar Sawant

INNOVATION TITLE - Flood Alert

STATE - Karnataka

In an extraordinary display of creativity and problem-solving, Sarswati Mahesh Dalavi, Shradha Koparde, and Pallavi Kompi from DY Chougule Bharatesh High School, Belgavi, have invented a Multi-Usable Stove under the guidance of ATL in-charge Ganpat Dinkar Sawant. Their innovation addresses a common yet significant problem faced by their families and many others in rural areas which is the inability to cook and boil water simultaneously on traditional stoves, leading to energy wastage and time inefficiency.

Growing up in farming families, the students experienced firsthand the difficulties their mothers faced in the kitchen. Saraswati, one of the team members, often found herself without hot water for bathing because her mother was occupied with cooking on the stove (chulha). This dual need for cooking and boiling water at the same time sparked the idea for the Energy-Saving Multi Solid Fuel Cooking Stove.

The innovative stove, crafted from reusable materials such as an old oil can, discarded PUC pipes, a tap, and a mop, allows for simultaneous cooking and water boiling. The stove features a three-in-one design, enabling users to cook food, boil water, and steam vegetables all at once. This portable and cost-effective solution not only addresses daily challenges but also promotes energy efficiency and sustainability.

Unlike fixed stoves made from bricks, which are immovable. The student's creation is unique in the market, offering versatility and portability at such a low cost.

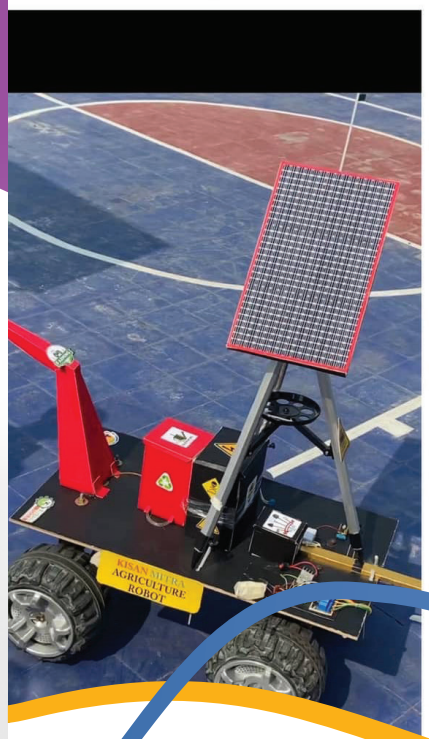
The team has already built a working prototype with the help of their mentors, Mr. Ganpati Sawant and Mr. Santosh Hiremath, during the ATL Marathon. Their project has received accolades, placing them among the top 30 girls' teams in innovation. "We are happy to be a part of this ATL Marathon and we get the chance to be top 100", the team said. They have also secured internships at Dell Technologies in Bengaluru, providing further opportunities to refine their product.

Looking ahead, the students aim to reduce the use of solid fuels and enhance their stove with solar energy. They are also planning to file for a patent and raise social media awareness about their innovative solution. The Multi-Usable Stove stands as a testament to the students' determination to improve the lives of farmers and rural families, embodying the spirit of innovation and practical problem-solving.

Theme:

National Security

DEFENCE ROBOT (vajra)



ATL UID - 2494954
ATL MARATHON 2022 REGISTRATION ID - 111513494
NAME OF THE SCHOOL - Tiny Tots School, Sri Ganganagar
NAME OF THE TEAM - Team Vajra
TEAM MEMBERS - Harshdeep Singh, Navjot Singh and Gaurav Chugh
ATL IN-CHARGE - Mr. Manoj kumar
INNOVATION TITLE - Defence Robot / (Vajra)
STATE - Rajasthan

Harshdeep Singh, Navjot Singh, and Gaurav Chugh from Tiny Tots School, Sri Ganganagar, Rajasthan have taken a significant step toward enhancing national security with their innovative creation, Vajra—the defense robot. Living near the border in Rajasthan, they were inspired by the stories of valor and the desire to protect their community. This inspiration led them to envision a machine capable of navigating treacherous border terrain, detecting threats, and neutralizing them without risking human lives.

Vajra is a state-of-the-art autonomous defense robot designed to operate in hazardous environments, combining advanced robotics, artificial intelligence, and sensor systems to enhance border security and protect human lives. The robot features autonomous navigation through GPS and GSM, high-resolution 360-degree cameras for surveillance and detection, and AI-based pattern recognition. Additionally, it is equipped with weapon systems and solar panels for energy efficiency, along with firefighting and chemical weapon systems for comprehensive defense capabilities.

The primary objective of Vajra is to minimize human risk and increase operational efficiency in complex and dangerous tasks. Scaling up the project involves expanding its capabilities, increasing deployment, and exploring new applications and markets. Its potential impacts are significant; it enhances national security through broader coverage and rapid response, economic benefits from job creation and establishing a technology hub, and global influence through export potential and strategic alliances. Moreover, the project will drive further research and development, leading to technological advancements and cross-industry applications in fields such as agriculture, disaster management, and healthcare.

As Mr. Manoj Kumar, the ATL incharge, emphasizes, “This innovation showcases the potential of young minds to create impactful solutions for national security.” The students’ dedication and ingenuity in developing Vajra reflect their commitment to safeguarding their community and country.

Theme: Business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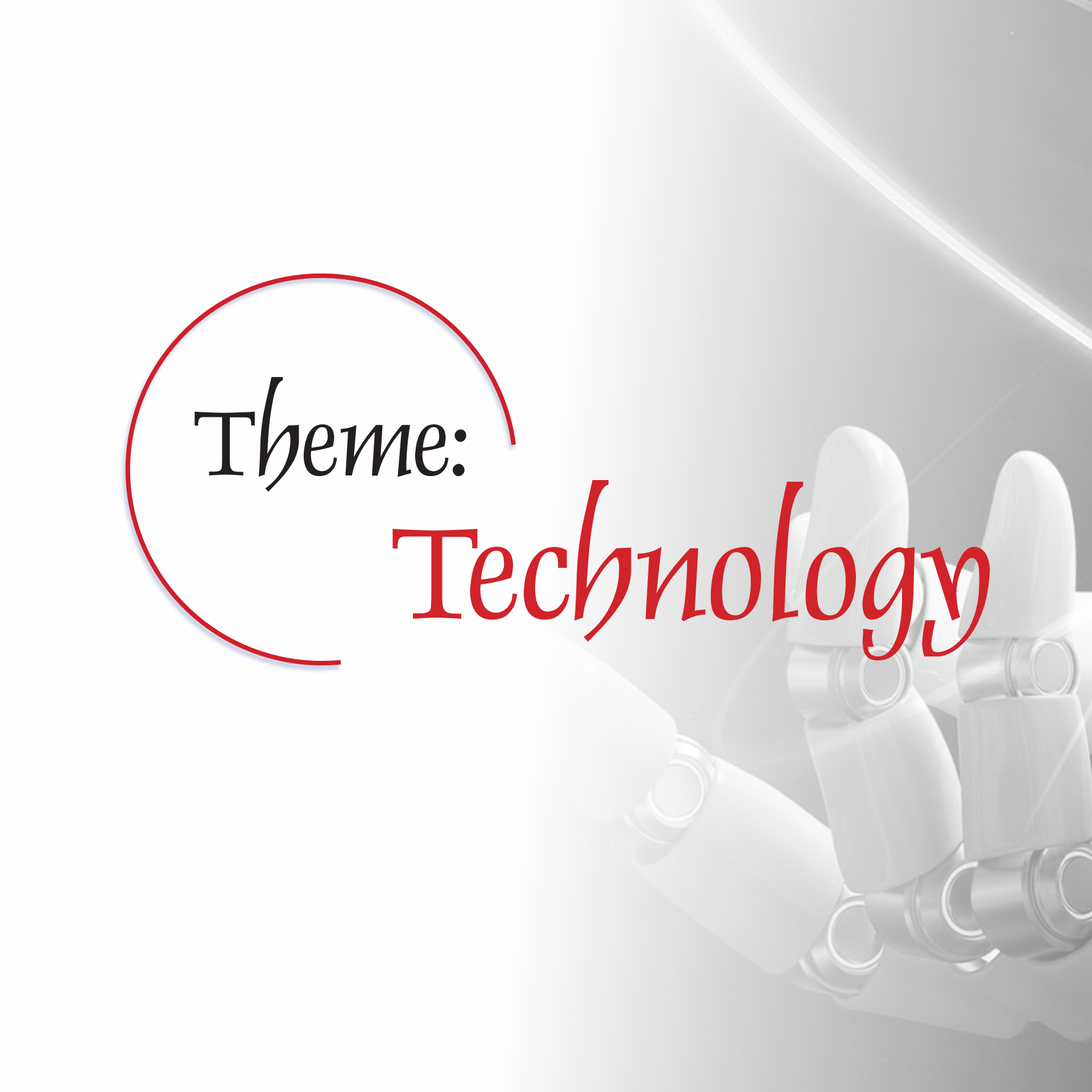
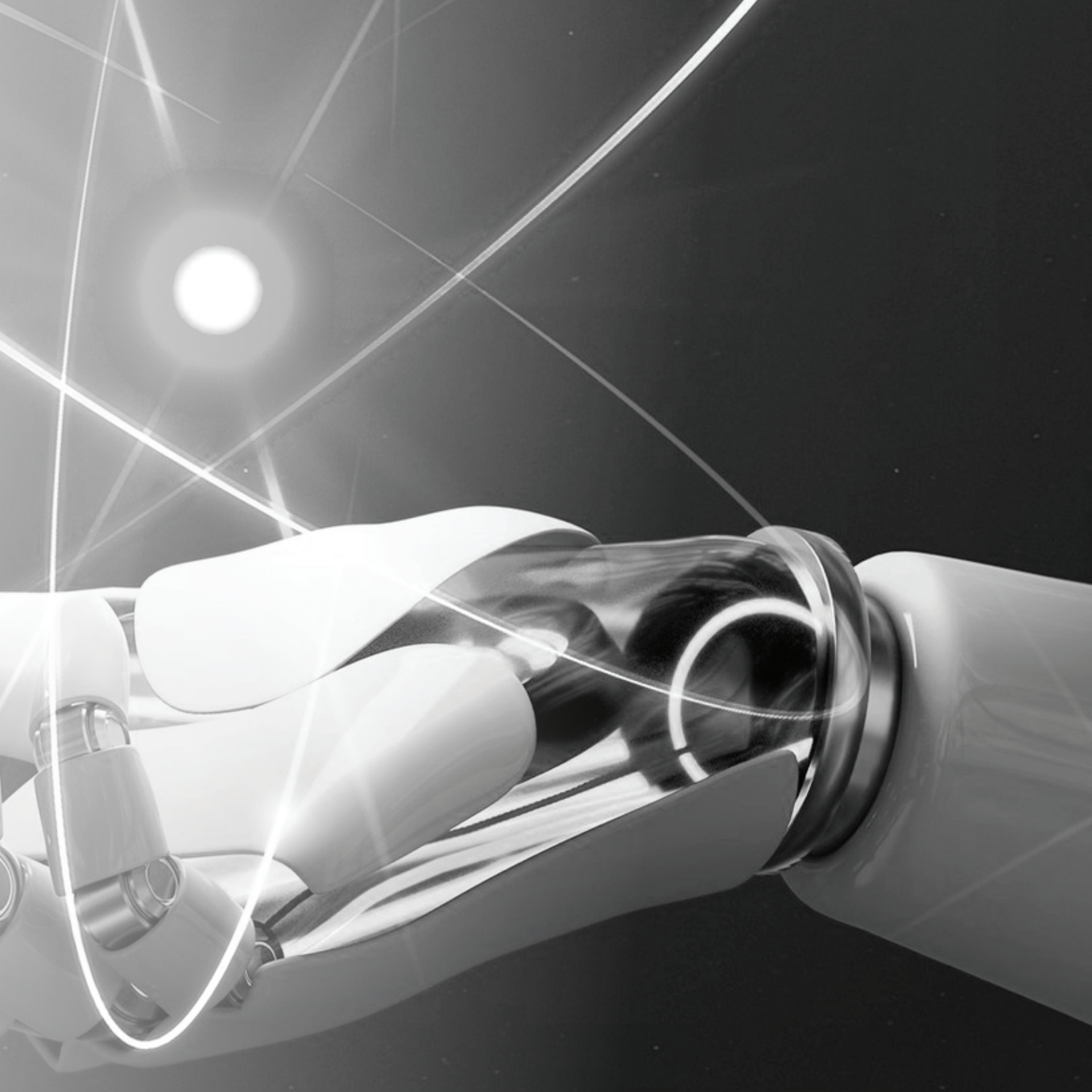
ATL UID - 3b0110383
ATL MARATHON 2022 REGISTRATION ID - 111656704
NAME OF THE SCHOOL - Kulachi Hansraj Model School
NAME OF THE TEAM - Smart Kart
TEAM MEMBERS - Dhruv Gupta, Aarush Jain and Arnav Kamra
ATL IN-CHARGE - Ms. Tanu Sharma
INNOVATION TITLE - Smart kart
STATE - Delhi

In the blazing summer heat, as vendors struggle to keep their vegetables fresh, a brilliant solution emerges from the young minds of Dhruv Gupta, Aarush Jain, and Arnav Kamra from Kulachi Hansraj Model School. Under the expert guidance of their ATL in-charge, Ms. Tanu Sharma, they have tackled a pressing issue head-on.

As per the research done by students, every year, vegetables worth a staggering ₹10,000 crores spoil due to inadequate management Enter the Smart Kart, an innovative, cost-effective solution designed to prevent vegetable spoilage and boost vendors' revenue. Priced at just ₹300, the Smart Kart offers a scalable and affordable answer to a widespread problem, ensuring fresher produce and a more profitable future for vendors. This ingenious invention promises to transform the way we handle and preserve vegetables, turning the tide on food wastage.

Theme: Technology





ATL UID - 11451406
ATL MARATHON 2022 REGISTRATION ID - 111679694
NAME OF THE SCHOOL - Gyan Bharti Public School, Cantt Area, Paharpur
NAME OF THE TEAM - We@tech
TEAM MEMBERS - Ridhima Ranjan, Sweksha Agarwal and Ankit Raj
ATL IN-CHARGE - Mr. Ravi Ranjan Kumar
INNOVATION TITLE - Minicomputer
STATE - Bihar

Ridhima Ranjan, Sweksha Agarwal, and Ankit Raj from Gyan Bharti Public School have taken a monumental step in making technology accessible to all by inventing an affordable minicomputer. Under the mentorship of ATL in-charge Mr. Ravi Ranjan Kumar, these young innovators aim to address a significant societal issue: the lack of access to computers and technology education due to financial constraints.

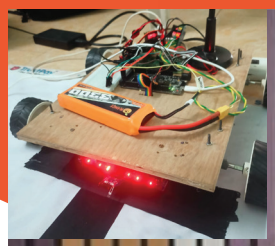
In many communities, the inability to afford computers limits individuals' opportunities to learn about and engage with technology. Recognizing this problem, the team, known as "Smart Maker," dedicated themselves to creating a solution that would make society more inclusive. Guided by their ATL in-charge r. Ravi Ranjan Kumar these students developed a minicomputer that offers an affordable gateway to technology.

This minicomputer is designed to be integrated into society, allowing individuals to explore the digital world and enhance their learning experiences. The device opens up numerous opportunities for those who have been left behind due to financial barriers, empowering them to improve their lives through technology.

Sharing their journey, the team reflected on the ATL Marathon, an event that empowered their individualities and taught them effective multi-tasking methods. They worked simultaneously on PowerPoint presentations, videos, demographic research, and physical prototypes, overcoming challenges to create their prototype. The experience was profoundly rewarding and underscored the potential impact of their innovation.

The minicomputer, with its low cost and high potential, promises to revolutionize access to technology in underserved communities. If produced on a large scale, it could significantly reduce the digital divide, providing millions with the tools they need to succeed in the modern world.

The invention by Ridhima, Sweksha, and Ankit stands as a testament to the power of youth innovation and the importance of making technology accessible to all. Their work not only addresses a critical need but also inspires a future where technology is within everyone's reach.



ATL UID - 1bdc2052
ATL MARATHON 2022 REGISTRATION ID - 111637214
NAME OF THE SCHOOL - Swami Atmanand English Medium School, Basna
NAME OF THE TEAM - Next Innovation
TEAM MEMBERS - Saniya Dani and Vaitla Sai Prasanna
ATL IN-CHARGE - Mr. Ajay Bhoi
INNOVATION TITLE - School Mate Robo
STATE - Chhattisgarh

Saniya Dani and Vaitla Sai Prasanna from Swami Atmanand English Medium School, Basna, have developed an innovative 'School Mate Robo' to tackle common school-related issues. Under the guidance of ATL in-charge Mr. Ajay Bhoi, these young inventors aimed to address the inefficiencies and safety concerns in schools.

The duo noticed that a significant amount of time was wasted on taking attendance, teachers often faced difficulties in conveying important information, and there were safety concerns such as the kidnapping of children after school hours. Their solution is a robot designed to streamline these processes.

The School Mate Robo is equipped with advanced facial recognition technology, allowing it to take attendance of students and staff simultaneously. It follows commands, detects obstacles, and can store biodata of every school member and their parents, ensuring that only registered individuals can pick up students.

The robot offers unique value propositions beyond school applications, such as web surfing, voice control, news updates, weather information, location finding, AI responses from ChatGPT, and more. It features a graphical user interface (GUI), password login system, and capabilities like writing letters, translating languages, automating various applications, scheduling tasks, setting alarms, performing complex calculations, and even providing IPL scores.

Taking advantage of existing school cameras, the robot can be commanded to access the CCTV control room and take attendance for all classrooms in seconds, further enhancing efficiency. The team is also working on making the robot eco-friendly.

Saniya and Vaitla's School Mate Robo promises to revolutionize school operations by saving time, enhancing communication, and ensuring student safety, demonstrating the transformative power of innovation and technology.

ATL UID - 22306695
ATL MARATHON 2022 REGISTRATION ID - 22306695
NAME OF THE SCHOOL - Motilal Nehru Public School
NAME OF THE TEAM - Smart Chair
TEAM MEMBERS - Chirag Anand, Arnav Sinha and Anshuman Tiwary
ATL IN-CHARGE - Ajit Kumar Shukla
INNOVATION TITLE - Smart Chair
STATE - Jharkhand

The development of the Smart Chair is a testament to the power of teamwork, innovation, and a shared vision. In response to the challenges posed by long hours of sitting during the COVID-19 lockdown, the team—comprising Chirag Anand, Arnav Sinha, and Anshuman Tiwary—came together with a common goal: to create a solution that promotes better posture and overall well-being.

Recognizing the growing issue of poor posture and the discomfort it caused during prolonged study and work sessions, the team focused on designing a product that would not only help users maintain proper posture but also provide real-time feedback. By leveraging technology and creative problem-solving, they developed a chair equipped with sensors, microcontrollers, and feedback mechanisms to encourage correct posture habits, reducing the risk of long-term health issues.

Throughout the development process, the team worked seamlessly to integrate their diverse skills and expertise. From designing the hardware components to ensuring that the system responded effectively to posture changes, every aspect of the project was the result of close collaboration and a shared commitment to improving the user experience.

The Smart Chair reflects the team's dedication to solving real-world problems. Their innovation goes beyond posture correction, incorporating features that help students stay alert during study sessions and enhance focus, making the chair a practical tool for both health and productivity.

By approaching the project with a balance of creativity and technical precision, the team has created a solution that can make a meaningful impact in everyday life. Their journey is an inspiring example of how collaboration, determination, and a desire to make a difference can lead to the development of innovative products that address pressing needs in society.

The Smart Chair is more than just an invention; it represents the hard work, ingenuity, and unity of a team that believes in creating positive change. Through their combined efforts, Chirag, Arnav, and Anshuman have not only addressed a common problem but also laid the foundation for future innovations that promote health and well-being.

ATL UID - 15c78540
ATL MARATHON 2022 REGISTRATION ID - 223111712284
NAME OF THE SCHOOL - Swarnprastha Public School
NAME OF THE TEAM - Smartstore
TEAM MEMBERS - Aadvik Panghal and Tavish Grover
ATL IN-CHARGE - Mr. Awdhesh Kumar Paliwal
INNOVATION TITLE - Smartstore
STATE - Haryana

In the spirit of innovation and problem-solving, Aadvik Panghal and Tavish Grover came together to address a widespread issue that affects countless families—grain spoilage. Living in a world where food waste is a pressing concern, both team members recognized the need for an affordable, accessible, and effective solution to help preserve grains, particularly in rural areas where proper storage techniques are often lacking.

The inspiration for their project came from firsthand experiences. Both at home and in the countryside, Aadvik and Tavish noticed recurring problems with grain spoilage. These challenges weren't unique to them but echoed the struggles of millions of people worldwide who lacked the resources to keep their grains safe. Motivated by the desire to make a real difference, the duo combined their technical knowledge and creative thinking to design a simple yet highly functional solution—a grain storage monitoring module.

Their innovation is centered on a small, cost-effective device that can be easily placed in larger grain storage containers. Equipped with sensors and powered by an Arduino board, the module monitors temperature and humidity levels, alerting users if conditions threaten the safety of the stored grains. The goal was clear: to create a tool that was both user-friendly and efficient, capable of being used by farmers and households alike.

Throughout the development process, Aadvik and Tavish worked closely to refine the design, integrating essential features such as real-time data monitoring and customizable settings for users to set temperature and humidity limits. This level of personalization ensures that the module can be adapted to different environments, offering a flexible solution to grain storage problems in a wide variety of conditions. Their collaborative effort has resulted in a prototype that, while still evolving, shows immense promise in combating food waste through technology. Aadvik and Tavish's shared commitment to creating a positive impact is what drives this project forward. By pooling their strengths, they have developed a solution that has the potential to benefit not just their families, but communities around the world.

The work of Aadvik Panghal and Tavish Grover demonstrates the power of teamwork and shared purpose. Through their innovation, they aim to empower others with the tools to protect their valuable food supplies, paving the way for a future where grain spoilage is no longer a persistent issue. Together, they have shown that even small solutions can have a big impact when guided by passion and collaboration.

सत्यमेव जयते
NITI Aayog

ATAL INNOVATION MISSION

ATL UID - ed3b11780
ATL MARATHON 2022 REGISTRATION ID - 111568884
NAME OF THE SCHOOL - Bharatiya Vidya Bhavans Public School, Jubilee Hills, Hyderabad
NAME OF THE TEAM - Teacher's Assistant
TEAM MEMBERS - Aditi Dasgupta and Sreekshita Avinash
ATL IN-CHARGE - Mrs Sucharita J
INNOVATION TITLE - Teacher's Assistant
STATE - Telangana

Motivated by a personal experience during a school trip to the theatre, where an escalator malfunction left many classmates injured and falling behind in their studies, Aditi Dasgupta and Sreekshita Avinash were inspired to develop a solution for students unable to attend school. The impact of missed classes on academic performance drove them to create a system ensuring students could access essential learning even in their absence.

This led to the development of the "Teacher's Assistant," a robotic system designed to bridge the gap for absent students. The robot captures the teacher's speech in real-time, converts it into text, and takes photographs of the blackboard. At the end of each class, the text transcripts and images are compiled and emailed to absentee students, keeping them updated with the day's lessons and helping them stay on track with their peers.

Built using components like an Arduino Uno, Arduino shield, Bluetooth module, DC motors, and custom Python code, the robot effectively processes and transmits classroom information. It currently supports both English and Hindi, with plans to include more languages, making it a tool accessible to students from diverse linguistic backgrounds.

Looking ahead, Aditi and Sreekshita aim to enhance the robot with contextual search capabilities. This feature would enable the robot to provide additional resources and examples in real-time, enriching the learning experience for both present and absent students. By integrating online databases and supplementary materials, the robot could assist teachers in delivering a more comprehensive education.

Through their Teacher's Assistant robot, Aditi and Sreekshita have addressed the challenges of absenteeism while opening doors to innovative learning methods. Their project exemplifies how technology can transform education, making it more inclusive, supportive, and accessible for all students.

सत्यमेव जयते
NITI Aayog

ATAL INNOVATION MISSION

ATL UID - 11592667
ATL MARATHON 2022 REGISTRATION ID - 111276674
NAME OF THE SCHOOL - Mother's Global School
NAME OF THE TEAM - Techfari
TEAM MEMBERS - Pearl Jain and Smriti Singh
ATL IN-CHARGE - Gurvinder Kaur Malhi
INNOVATION TITLE - Glovosight
STATE - Delhi

The inspiration to develop GlovoSight stems from the daily challenges faced by visually impaired individuals. These individuals often encounter not just physical obstacles, but also societal mistreatment and exploitation. Unfortunately, they frequently become victims of theft or accidents due to a lack of immediate assistance and support. Witnessing these issues highlighted a critical need for a solution that would both enhance their safety and improve their quality of life. Pearl Jain and Smriti Singh, deeply moved by the plight of visually impaired individuals, set out to create a tool that could offer both practical assistance and greater autonomy.

GlovoSight is a groundbreaking smart glove designed to provide visually impaired individuals with enhanced safety and independence. The glove is equipped with cutting-edge sensors that detect obstacles in the user's path and alert them through auditory signals, thus enabling safer navigation. Its Bluetooth functionality allows users to connect with family members or emergency services, transmitting real-time location data and video clips via SMS to offer crucial situational awareness. In emergencies, a built-in panic button sends an immediate distress signal to designated contacts or the police, ensuring prompt assistance.

The glove's functionality is further enhanced by a dedicated smartphone app, which allows users to easily manage and customize their settings. This innovation is not just a technological advancement but a step towards empowering visually impaired individuals to lead more independent and confident lives.

A standout feature of GlovoSight is its emergency response capability. The glove is equipped with a panic button that, when pressed, sends an immediate distress signal to pre-designated contacts or local authorities. This ensures that help is readily available in urgent situations. The user-friendly interface of the accompanying smartphone app allows individuals to customize the glove's settings according to their preferences, making the technology adaptable to various needs.

By addressing both practical and emotional needs, GlovoSight aims to transform the landscape of assistive technology, offering a life-changing tool that promotes independence, safety, and inclusion for visually impaired individuals.

Theme:
Inclusion and Accessibility

ATL UID - 300212847
ATL MARATHON 2022 REGISTRATION ID - 111451024
NAME OF THE SCHOOL - BGS National Public School
NAME OF THE TEAM - NetraAI
TEAM MEMBERS - Prajwal NH and Dhrrithi Pillai
ATL IN-CHARGE - Rajasree V R
INNOVATION TITLE - NetraAI
STATE - Karnataka

In an inspiring display of technological ingenuity, Prajwal NH and Dhrrithi Pillai from BGS National Public School have developed NetraAI, a wearable device designed to transform the lives of visually impaired individuals. Guided by ATL in-charge Rajasree V R, the students addressed critical challenges faced by the visually impaired community.

NetraAI aims to help visually impaired individuals read any text, translate it into multiple languages, and narrate it with human-like voice modulation. The lightweight and affordable device integrates advanced AI and machine learning through Azure AI Services, enabling robust text recognition and translation in over 80 languages. NetraAI employs Azure Cognitive Services to provide a natural language interface, allowing users to interact conversationally. Enhanced by sentiment analysis, the voice output matches the emotional tone of the text. The device can also identify scenes, recognize faces, and detect colors and objects in real time.

NetraAI is remarkably affordable. While similar technologies cost around 2 Lakhs in Europe, NetraAI is available in India for only 4000 Rupees, achieved by utilizing open-source technologies and cloud-hosted AI models, reducing hardware costs.

NetraAI's potential impact is profound. By enabling visually impaired users to read any text, identify objects, and navigate their surroundings independently, NetraAI significantly improves their quality of life. Its ability to translate text into over 80 languages helps users overcome language barriers, accessing a broader range of information and educational materials.

To scale up the project students are also planning partnerships and collaborations with NGOs, government agencies, and educational institutions which can help in distributing NetraAI to those in need and integrate it into accessibility resources. The duo also came up with the idea of developing localized versions that cater to specific languages and regional needs and expanding distribution channels to reach international markets, which will ensure the device is useful in various cultural contexts.

In educational settings, Prajwal and Dhrrithi's invention, NetraAI, stands as a testament to youthful innovation and mentorship. It embodies the spirit of inclusivity and technological advancement, poised to make a significant difference in the lives of visually impaired individuals worldwide.


Theme:
Safety and
Sanitation

ATL UID - 24357659
ATL MARATHON 2022 REGISTRATION ID - 111385564
NAME OF THE SCHOOL - Telangana Model School Imampet
NAME OF THE TEAM - TSMS Rainbow
TEAM MEMBERS - Likhitha and Harini
ATL IN-CHARGE - Mr Lingiah
INNOVATION TITLE - Drainage Cleaning Device
STATE - Telangana

In a remarkable leap forward for public health and sanitation, Likhitha and Harini from Telangana Model School, Imampet, have invented a groundbreaking drainage cleaning device. This innovation, developed under the expert guidance and support of Mr. Lingiah, the Atal Tinkering Lab (ATL) in charge, promises to revolutionize how we approach underground drainage maintenance, safeguarding the lives of countless sanitation workers.

Sanitation workers often face severe health hazards, sometimes even life-threatening, when cleaning underground drainage pipelines. The harsh and toxic environment within these pipes exposes them to dangerous pathogens and hazardous materials. Recognizing this dire issue, Likhitha and Harini set out to create a solution to eliminate the need for human entry into these difficult conditions.

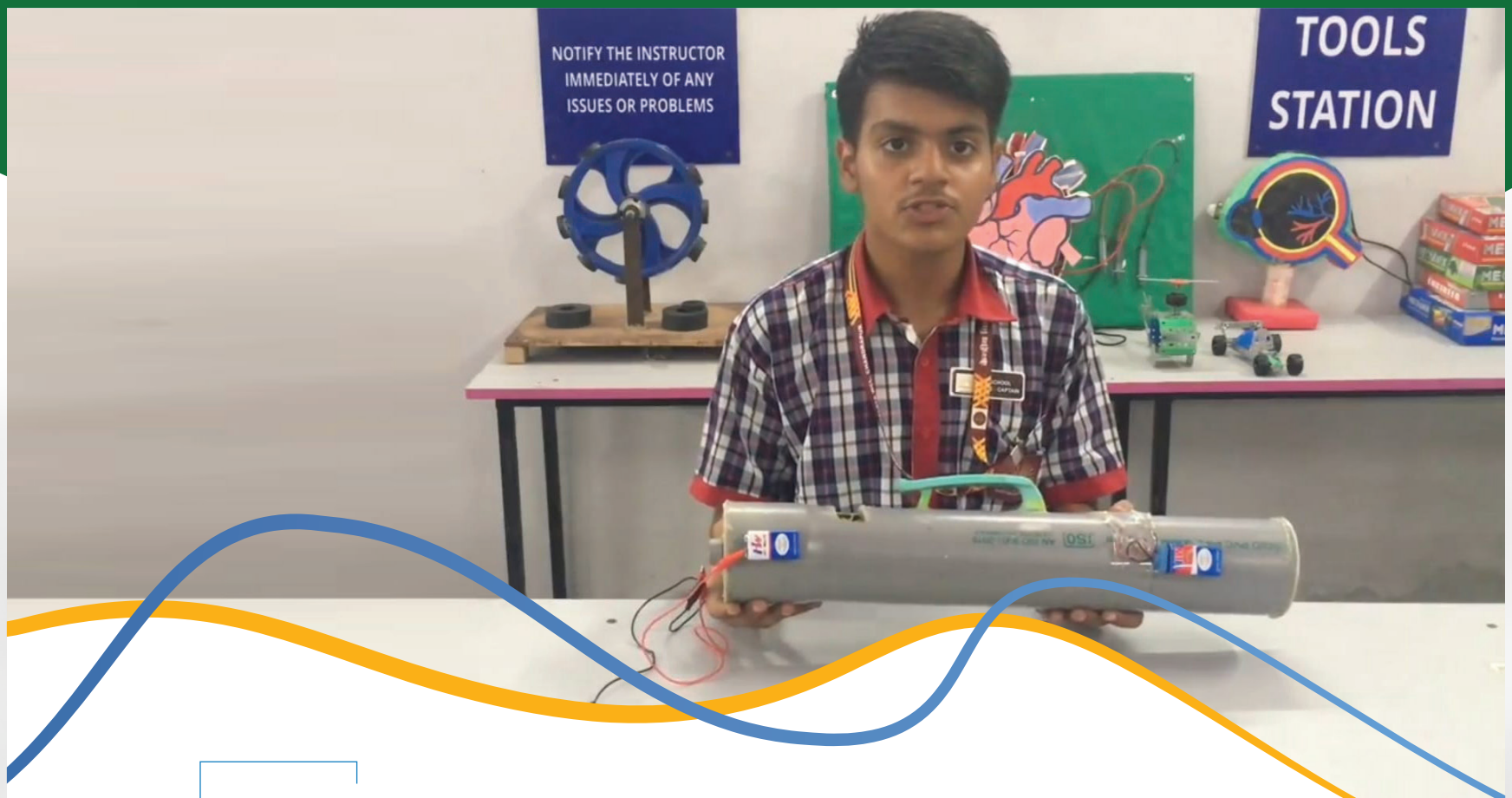
The students' innovative device is designed to save the lives of municipal workers, sanitation workers, and plumbers by preventing their entry into underground drainage pipelines for cleaning. Utilizing a combination of trained personnel, a power supply, DC motors, a gripper, a cutting tool, and a scopic camera, the device efficiently monitors and addresses blockages in the drainage system.

The device operates on a principle akin to the human digestive system, breaking down large chunks of waste into smaller, more manageable pieces. This automated process includes monitoring blockages, cutting obstructive waste, and plucking the waste with a gripper, all while providing real-time visual feedback via the scopic camera.

This innovative solution is not only beneficial for household drainages but also holds immense potential for schools, towns, and municipalities. By replacing the need for manual cleaning, it ensures a safer and more efficient maintenance process.

Likhitha and Harini's invention stands as a testament to the power of youthful innovation and the transformative impact of dedicated mentorship. Their work is poised to make a significant difference in public sanitation and worker safety, exemplifying the potential of the next generation to solve critical societal challenges.

Theme: Pollution Control



ATL UID - 36645761
ATL MARATHON 2022 REGISTRATION ID - 109988584
NAME OF THE SCHOOL - Kendriya Vidyalaya WCL, Chandrapur
NAME OF THE TEAM - KV WCL, Chandrapur ATL Marathon - 2022
TEAM MEMBERS - Harshil Swami and Sujyot Meshram
ATL IN-CHARGE - Dr. Deepesh
INNOVATION TITLE - HomeMade Air Purifier: Pollucheck
STATE - Maharashtra

Harshil Swami and Sujyot Meshram, students of Kendriya Vidyalaya WCL in Chandrapur, a city surrounded by coal mines, were deeply concerned about the pervasive air pollution affecting their community. With the guidance of ATL Incharge Dr. Deepesh they observed the detrimental effects of suspended carbon particles on health, leading to respiratory issues and other ailments. Determined to find a solution, these students developed a groundbreaking device: the Pollution Monitor and Air Purifier.

The Pollution Monitor, equipped with an MQ-135 sensor, accurately measures the levels of harmful particulate matter in the air. This real-time data empowers individuals to make informed decisions about their health and exposure.

The Air Purifier component employs a two-tiered filtration system to effectively remove pollutants from the air. This innovative device is suitable for both homes and offices, offering a compact and user-friendly solution to air pollution.

The students envision their device as a catalyst for positive change in Chandrapur and beyond. They aim to make it accessible to all by combining the Pollution Monitor and Air Purifier into a single, integrated unit. Additionally, they plan to enhance the Air Purifier's capacity using advanced filtration technologies.

This student-led innovation showcases the potential of young minds to address environmental challenges. Their dedication to improving the well-being of their community serves as an inspiration for others to take action against pollution.

Theme:
Social Service

ATL UID - 15792363
ATL MARATHON 2022 REGISTRATION ID - 111725974
NAME OF THE SCHOOL - Mount Zion Silver Jubilee School
NAME OF THE TEAM - Miracle Workers
TEAM MEMBERS - Heavena Paulin Shriya S and Faheema Samrin M
ATL IN-CHARGE - Smt. Kalpana Devi M
INNOVATION TITLE - Child's Nutritional Status, Physical Health and Well-Being Follow-up
STATE - Tamil Nadu

In the bustling city of Delhi, at the Mount Zion Silver Jubilee School, two young minds Heavena Paulin Shriya S and Faheema Samrin M guided by ATL Incharge Smt. Kalpana Devi M, were on a mission to transform the lives of thousands of children. Their innovation, a mobile app designed to optimize the Mid-Day Meal Program, was born out of a deep concern for the widespread issue of child malnutrition in India.

The program, which provided nutritious meals to students in government and government-aided schools, was a vital lifeline for many children. However, ensuring that these meals met the specific nutritional needs of each student was a daunting task. The young innovators recognized this gap and set out to create a solution.

Their app, a technological marvel, was more than just a meal tracker. It integrated personalized nutrition management with health tracking, offering a comprehensive approach to addressing malnutrition. By monitoring students' BMI and attendance, the app ensured that no child was left behind. It provided customized meal menus tailored to each student's age and nutritional requirements, ensuring that they received the right amount of calories and protein.

But the app didn't stop there. It analyzed individual BMI data to identify specific dietary needs, offering tailored recommendations to address deficiencies. It even assessed the impact of the meals on students' physical health and well-being, providing valuable insights into the program's effectiveness.

The potential impact of this innovation was immense. By integrating with existing government school attendance systems, the app could streamline data management and ensure accurate tracking. Incorporating features to maintain detailed health histories would enable even more personalized meal planning. The app's ability to provide tailored nutritional suggestions based on BMI and analyze physical health through MUAC values would further refine dietary interventions.

As the young innovators continued to develop and refine their app, they dreamed of a day when it would be adopted by schools across India. Their vision was to create a scalable model that could transform the lives of countless children, ensuring that they received the nutrition they needed to grow and thrive.

ATL UID - 14622146
ATL MARATHON 2022 REGISTRATION ID - 111786584
NAME OF THE SCHOOL - DAV Public School, Pushpanjali Enclave
NAME OF THE TEAM - Audire Glasses
TEAM MEMBERS - Aditya Vikram and Harsh Garg
ATL IN-CHARGE - Alka Dhamija
INNOVATION TITLE - Audire Glasses
STATE - Delhi

In the heart of Delhi, at the DAV Public School Pushpanjali Enclave, two young minds, Aditya Vikram and Harsh Garg guided by ATL Incharge Alka Dhamija, were ignited by a desire to empower those who couldn't speak. Inspired by the challenges faced by individuals with speech impairments, they embarked on a collaborative journey to create a device that could bridge the communication gap.

Their innovation was a simple yet profound concept: a communication device that used eye blinks to generate sounds. By connecting an eye blink sensor to a Raspberry Pi, they developed a system that could translate blinks into a unique 'language' of dots and dashes, much like Morse code. Each pattern of blinks corresponded to a specific sound, allowing the user to 'speak' through their eyes.

What set this device apart was its adaptability. The user could customize the dot and dash patterns to suit their preferences, making it a truly personal tool. The device was also designed to be intuitive, allowing users to quickly learn and use the pattern of blinks as a new form of communication.

Aditya and Harsh's inspiration came from a deep empathy for those who struggled to express themselves. They wanted to create a solution that would empower them with a voice, giving them more independence and enhancing their interaction with the world around them. This project was not just about technology; it was about making a meaningful difference in the lives of those who needed it most.

To scale up their project, Aditya and Harsh envisioned mass production and partnerships with NGOs and healthcare providers to make the device more accessible and affordable. They dreamed of enhancing features like multilingual support and integration with other assistive technologies to broaden its usability. Developing a companion mobile app for customization and integrating AI for personalized adjustments could further enhance user experience. Offering training programs and creating an online community would support users and caregivers, ensuring effective use. Continuous R&D, including clinical trials, would improve the device's functionality and credibility, ultimately expanding its impact and reaching a larger audience.

Theme:

Food Technology

File
Edit
Filter
View
Help
Microscopic Virtual Reality
ADD
REMOVE
Particle Instancing
Face Deform
Body
Multiresolution
Data Analysis

सत्यमेव जयते
NITI Aayog

ATAL INNOVATION MISSION

ATL UID - 28543712
ATL MARATHON 2022 REGISTRATION ID - 111193084
NAME OF THE SCHOOL - Kendriya Vidyalaya Hebbal, Bangalore
NAME OF THE TEAM - ZYMO
TEAM MEMBERS - Chinmayi Adiga and Cherishma R Shetty
ATL IN-CHARGE - Nisha M Mohan
INNOVATION TITLE - ZYMO
STATE - Karnataka

In today's fast-paced world, finding time for daily chores can be a challenge. Cooking, especially traditional dishes that require time-consuming fermentation processes, can be particularly daunting. To address this issue, Chinmayi Adiga and Cherishma R Shetty have developed Zymo, an innovative automatic batter fermenting machine.

Zymo is a two-chambered device equipped with a built-in grinder. It creates a simulated environment to accelerate the fermentation process, reducing the typical 12-13 hour wait time to just 6 hours. Users simply input soaked pulses and grains, and Zymo produces ready-to-use batter.

The machine's automatic temperature and humidity control system ensures optimal fermentation conditions. A separate grinding chamber simplifies the process, and the batter is automatically transferred between chambers. Zymo operates on electricity and is designed for convenience and efficiency.

It has the potential to revolutionize the way people cook, especially those with limited time or those living in regions with extreme temperatures. By simplifying the fermentation process, Zymo can save time and effort, making it easier for individuals to enjoy traditional dishes.

The team behind Zymo has ambitious plans to further enhance the device. They aim to make Zymo fully automatic, equip it with a battery backup, and explore the possibility of solar power operation. Additionally, they intend to increase Zymo's capacity and expand its functionality to accommodate other fermentation processes, such as setting curd.

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Together, Chinmayi and Cherishma have combined their skills and expertise to develop Zymo, a groundbreaking invention that has the potential to make a significant impact on the way people cook and live.

Notes

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