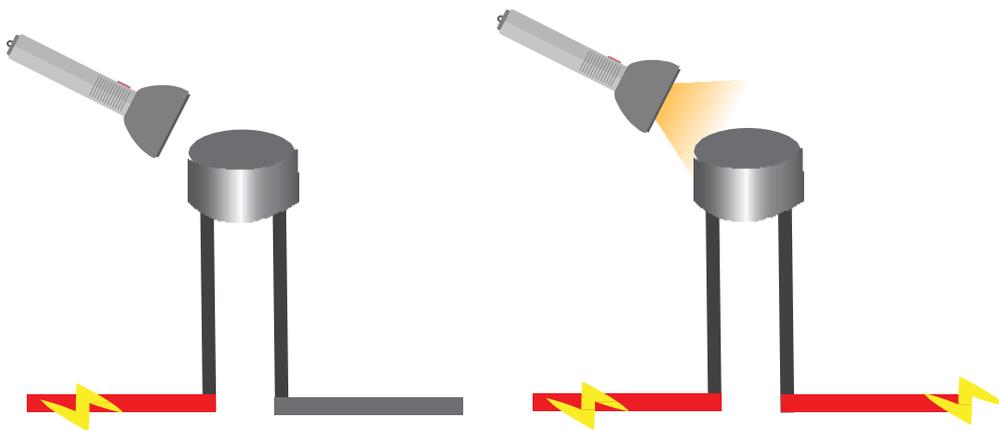


# ACTIVITY CARD - 1

## LDR SENSOR

### Introduction

LDR stands for Light Dependent Resistor. They allow you to detect light. Depending on the amount of light falling on LDR, its resistance changes. As shown as in below figure whenever light falls on LDR, its resistance decreases, allowing current (mentioned in red line) to pass through it.



### Objective:

During this activity, you will help students to achieve following objectives:

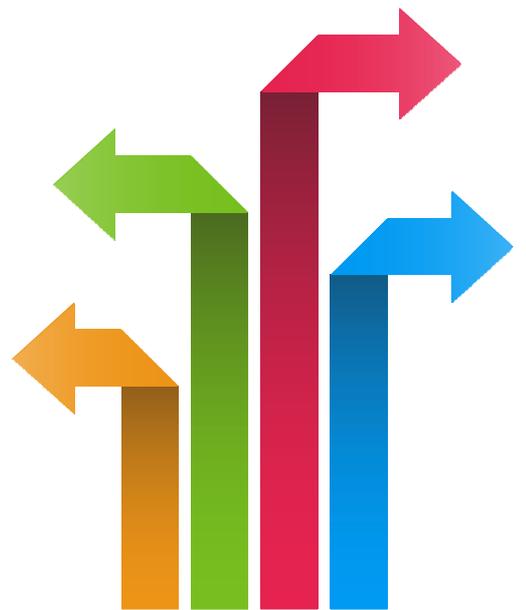
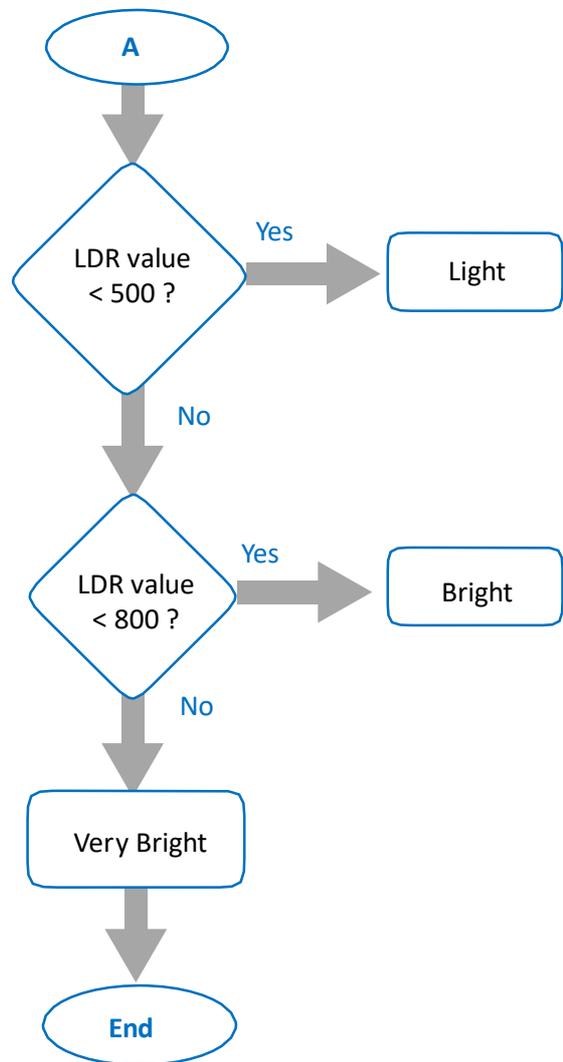
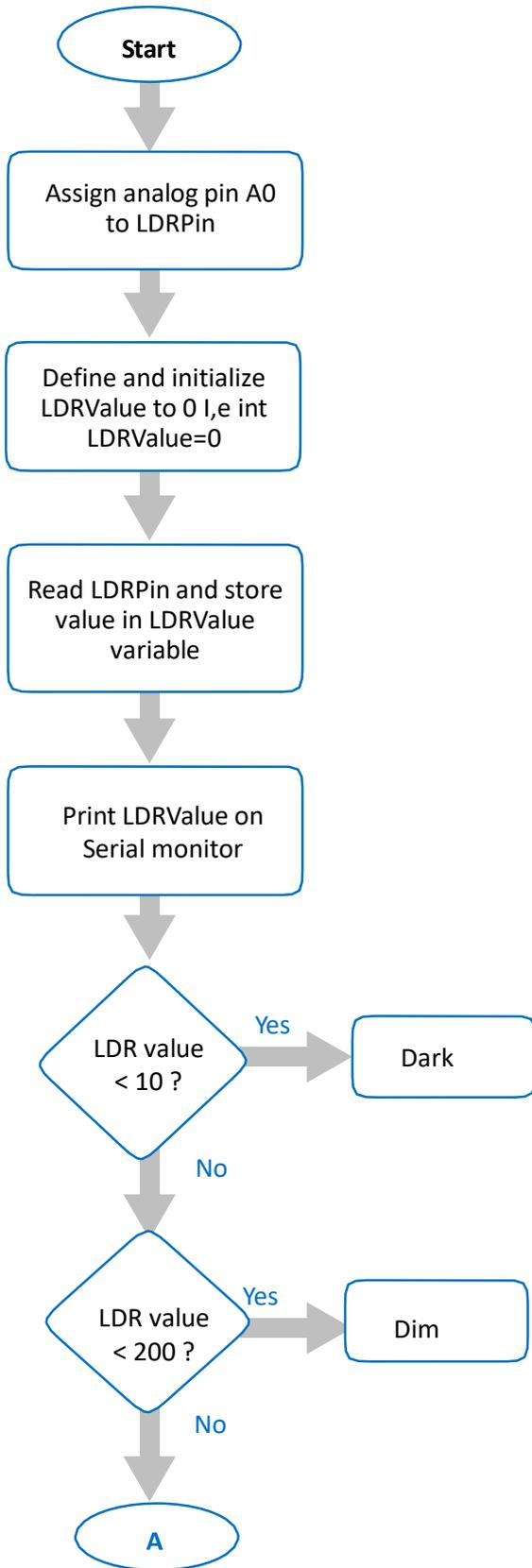
- Understanding principle and operations of LDR sensor.
- Design algorithm and flowchart to sense light using LDR sensor.
- Programming LDR sensor using Arduino API for Arduino
- Interfacing LDR sensor with Arduino using analog pin A0.

# Algorithm

- Step 1 Assign analog pin A0 to LDRPin
- Step 2 Define and initialize LDRValue to 0 I,e int LDRValue=0
- Step 3 Read LDRPin and store value in LDRValue variable
- Step 4 Print LDRValue on Serial monitor
- Step 5 If LDRValue is less than 10, print "Dark" on serial monitor
- Step 6 If LDRValue is less than 200, print "Dim" on serial monitor
- Step 7 If LDRValue is less than 500, print "Light" on serial monitor
- Step 8 If LDRValue is less than 800, print "Bright" on serial monitor
- Step 9 Else print "Very Bright" on serial monitor



# Flowchart



# Programming

```
int LDRPin= A0; int
LDRValue=0;      void
setup()

{
Serial.begin(9600);
}
void loop(void)
{
LDRValue= analogRead(LDRPin);

Serial.print("Analog reading = ");
Serial.print(LDRValue);

if (LDRValue < 10)

{
Serial.println(" - Dark");
}

else if (LDRValue < 200)

{
Serial.println(" - Dim");
}

else if (LDRValue < 500)

{
Serial.println(" - Light");
}

else if (LDRValue < 800)
{
Serial.println(" - Bright");
}
else
{
Serial.println(" - Very bright");
}
delay(1000);
}
```



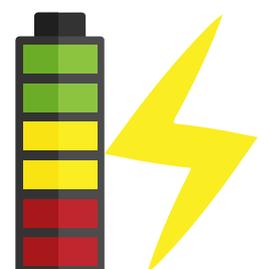
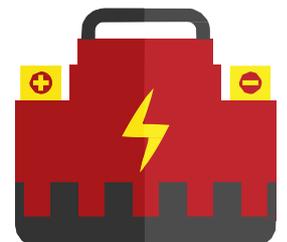
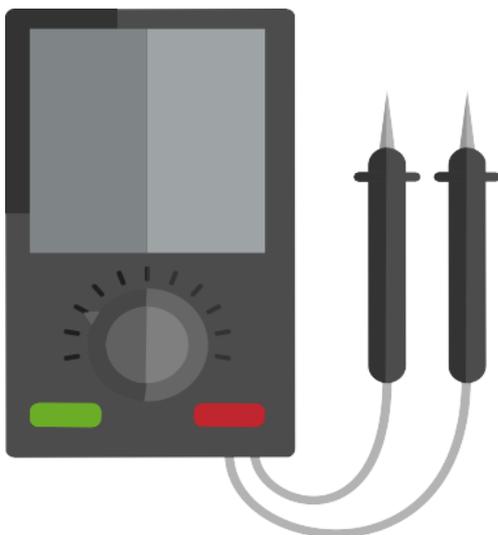
# Hardware

## Instructions:

- Connect GND pin of LDR sensor to GND on the Genuino 101
- Connect Out pin of LDR sensor to A0 on the Genuino 101.
- Connect VCC pin of LDR sensor to 5V on the Genuino 101
- Connect power supply to the Genuino 101 and USB to USB Client Port on the Genuino.
- Open Arduino IDE under Tools → Board select Intel® Genuino 101
- Under Tools → Serial Port select the Com # where the Genuino is connected to.
- Write the above code on Arduino IDE.
- Upload to the Genuino by clicking the upload button.
- Monitor the value of the LDR sensor in the Serial Monitor.

## Hardware Connection

| Genuino pin  | LDR Sensor Pin |
|--------------|----------------|
| 5V           | VCC            |
| GND          | GND            |
| Analog pin 0 | Out            |



# Circuit Diagram:

