DESIGN THINKING
DIFFERENT STAGES OF DESIGN THINKING
THE FIVE STAGES OF DESIGN THINKING

Stage 1: EMPATHIZE  
Stage 2: DEFINE  
Stage 3: IDEATE  
Stage 4: PROTOTYPE  
Stage 5: TEST
Stage 1

**EMPATHIZE**

- What is Empathize?
- Why Empathize?
- How to Empathize
WHAT IS EMPATHIZE?

To identify or understand what others see, feel and experience.

Observe  +  Listen  &  Engage

In order to relate to the problems that others might be facing.

You have to understand a problem before you can solve it.
WHY EMPATHIZE?

Observing what people do and how they interact with their environment gives you clues about what they think and feel.

It also helps you learn about what they need.
HOW TO EMPATHIZE?

**Observe**
- View people and their behavior
- Notice any disconnect between what someone says and what they does

**Engage**
- Talk to people about their problems to help you relate to the issue.
- Always ask “Why?” to uncover deeper meaning

**Watch and listen**
- Have them physically go through the steps, and talk you through why they are doing what they do
- Ask them to vocalize what’s going through in their mind
ACTIVITY: SCENARIO 1

Mr. Rao* is an old man who reaches home late in the evening after work. He stays in an apartment on the 1st floor. When he starts early in the morning, it is still dark and he finds it difficult to go down the stairs to reach the gate. By the time, he reaches home after his work, it is usually dark again and climbing up to reach his apartment on the first floor is again a challenging task for him. Is there some way in which we can help Mr. Rao?
Empathy Map

What are the emotions your user might be feeling?

What does He/She say or do?

What are some advices/comments that the user gets from his friends or relatives?

What does he/she see?
Stage 2: Define

- What is Define?
- Why Define?
- How to Define
WHAT IS DEFINE?

Analyze and create your observation of the user from the ‘Empathize stage’

Define to craft a meaningful and actionable problem statement
WHY DEFINE?

The Define stage is critical to the design process because it results in your point-of-view (POV), the explicit expression of the problem you are striving to address.
HOW TO DEFINE?

Identify your Audience
Develop an understanding of the type of person you are designing for – your Audience.

Reveal Needs
Create and select a limited set of NEEDS that you think are important to fulfill.

Articulate Insights
Work to express INSIGHTS you developed through the information gathered through empathy and research work.

POINT OF VIEW
**Activity: Create a POV Statement**

<table>
<thead>
<tr>
<th>Audience Need Statements</th>
<th>POV Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I am seven-years-old and I hate doing homework because it takes me forever to finish.&quot;</td>
<td>How can we create a way for this student to do his or her homework more efficiently?</td>
</tr>
<tr>
<td>I am a college student and I hate folding laundry because I can't seem to fold it the right way.</td>
<td>How can we create a tool to help the college student fold laundry?</td>
</tr>
<tr>
<td>I am the mother of five-year-old twins who hate vegetables of all kinds. I am worried about their nutritional needs.</td>
<td>How can we help the mother succeed in getting her children to eat vegetables?</td>
</tr>
</tbody>
</table>
Mr. Rao is an old man who reaches home late in the evening after work. He stays in an apartment on the 1st floor. When he starts early in the morning, it is still dark and he finds it difficult to go down the stairs to reach the gate. By the time, he reaches home after his work, it’s usually dark again and climbing up to reach his apartment on the first floor is again a challenging task for him. Is there some way in which we can help Mr. Rao?
Research / Observe

List the main facts, data and background information of relevance here.

1. Old Man
2. Steep staircase
3. First floor residence
4. Difficulty in climbing
5. No way to see properly in the dark
6. No light
7. Need to be careful
8. Old man’s helplessness
9. Old man’s fear of injury
10. Remote village
11. Poor infrastructure
12. Building was not well planned

Design Challenges

Write down all the problems you can think in the boxes provided:

- Old man’s difficulty in walking
- Pain in the legs
- No light
- Nobody to help
- Fear and insecurity
- Cant afford to install it
I am trying to reach home safely

I am struggling unable to climb

Because of darkness fear of falling

I feel helpless insecure

The problem is the lack of light in the passage as it does not let the old man reach his room safe

Point of View Statement
Formulate one very precise sentence that summarizes exactly the problem you want to solve

How might we solve the problem of lack of safety in climbing the stairs faced by the old man?
Stage 3

IDEATE

WHAT IS IDEATE?
WHY IDEATE?
HOW TO IDEATE
WHAT IS IDEATE?

The third stage of the design process in which you concentrate on idea generation.
WHY IDEATE?

To step beyond obvious solutions
To connect the collective perspectives
To uncover unexpected areas of exploration
To create easy and flexible innovation options
HOW TO IDEATE?

Regular Brainstorming  Reverse Brainstorming
Mr. Rao is an old man who reaches home late in the evening after work. He stays in an apartment on the 1st floor. When he starts early in the morning, it is still dark and he finds it difficult to go down the stairs to reach the gate. By the time, he reaches home after his work, it’s usually dark again and climbing up to reach his apartment on the first floor is again a challenging task for him. Is there some way in which we can help Mr. Rao?
Generate as many ideas as possible to serve these identified designed needs

<table>
<thead>
<tr>
<th>Ideas Generated</th>
<th>Novelty</th>
<th>Ease of use</th>
<th>Ease of design</th>
<th>Durability</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Match Box</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Torch</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Come Home Early</td>
<td>✓</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Lift</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>X</td>
</tr>
<tr>
<td>Change Home</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2 Way Switch</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Stage 4

PROTOTYPE

- WHAT IS PROTOTYPE?
- WHY PROTOTYPE?
- HOW TO PROTOTYPE
WHAT IS PROTOTYPE?

Prototyping is a rough and quick portion of the design process.
WHY PROTOTYPE?

1. To test possibilities
2. To fail quickly and cheaply
3. To break a large problem down into smaller, testable chunks
HOW TO PROTOTYPE?

Build with the user in mind

Identify what's being tested

Don't spend too long

Start building
ACTIVITY : SCENARIO 1 CONTINUED

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ABSTRACT - Rough Sketch of the Prototype

Supply
220 AC or
110

Neutral
Phase

ON

2-Way Switch

Door

Stair

2-Way Switch
CONCRETE - Detailed Sketch of the Prototype
Stage 5

TEST

WHAT IS TEST?
WHY TEST?
HOW TO TEST
WHAT IS TEST?

Solicit feedback, about the prototypes you have created from your audience.
WHY TEST?

1. To refine prototypes and solutions
2. Informs the next iterations of prototypes
3. To refine your POV (Point of View)
4. Yields unexpected insights
HOW TO TEST?

Ask users to compare

Watch how they use

Show don't tell

Create Experiences
Mr. Rao is an old man who reaches home late in the evening after work. He stays in an apartment on the 1st floor. When he starts early in the morning, it is still dark and he finds it difficult to go down the stairs to reach the gate. By the time, he reaches home after his work, its usually dark again and climbing up to reach his apartment on the first floor is again a challenging task for him. Is there some way in which we can help Mr. Rao?
# TESTING QUESTIONS

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>User Testing Questions</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What do you like and dislike about this product?</td>
<td>What I like is that it provides light</td>
</tr>
<tr>
<td>2.</td>
<td>What do you think this product should do?</td>
<td>It should work at all times</td>
</tr>
<tr>
<td>3.</td>
<td>What could be done to make you want to use this</td>
<td>I would like to have it all automated i.e it should switch on if</td>
</tr>
<tr>
<td></td>
<td>product more?</td>
<td>somebody comes near the stairs.</td>
</tr>
<tr>
<td>4.</td>
<td>What do you think of the way this product looks</td>
<td>I think the look of the switch is boring.</td>
</tr>
<tr>
<td></td>
<td>(the aesthetics)?</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Is this product efficient, safe, and comfortable</td>
<td>Yes, it is comfortable to use. Can it be made more beautiful?</td>
</tr>
<tr>
<td></td>
<td>to use? If not, how could it be improved to make</td>
<td></td>
</tr>
<tr>
<td></td>
<td>more ergonomic?</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>What do you see as some problems with this</td>
<td></td>
</tr>
<tr>
<td></td>
<td>product?</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>What can be done to solve these problems?</td>
<td></td>
</tr>
</tbody>
</table>
TESTING OBSERVATIONS

Observations

1. What does the user do with this product?
2. What are the user’s perceptions of the product?
3. How successful or unsuccessful does the user think the product is?
4. How does it meet or fail to meet the user’s needs?
5. How safe is the product?
THANK YOU