

# Pre-course Platform Registration

## ICT INOV Platform & Ms Teams



- Register account
- Code : JMpWqmnDkX
- Enrol in class



- Login 365 account (yourUsername@365.um.edu.my)
- Team code : j3pi4zb



# ICT-INOV

MODERNIZING ICT EDUCATION  
FOR HARVESTING INNOVATION

## **Design Thinking the present education challenge**

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Unaizah Obaidellah

Universiti Malaya

ICT INOV

3 – 4 July 2023

# Ice Breaking

30 minutes



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Take one!

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I'M JUST HERE  
FOR THE  
Candy



# Ice breaking

- Name of activity : The sales champion
- Duration : 10 minutes
- Type : Group activity
- Task :
  1. From a team based on candy type received and be seated at the same table.
  2. Create a **novel, fun and lively 3 minutes** live advertisement for the candy using *Haka style*.  
(swaying, slapping of the chest and thighs, stamping, and gestures)
  3. All members in the team must participate.



Presenting .....





# Ice breaking

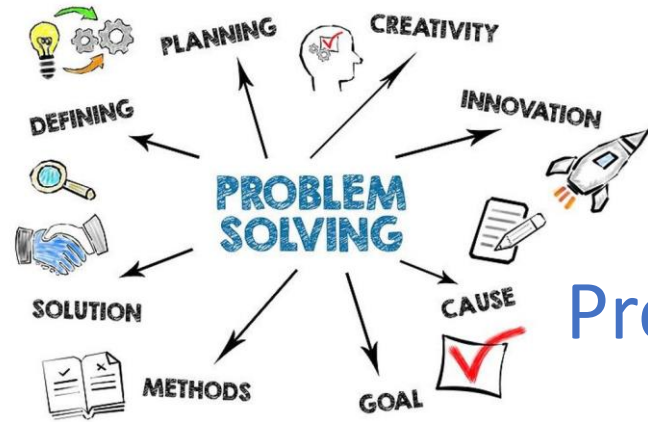


Communication skills

Get to know classmates



What did we learn from this activity?



Problem solving

Teamwork





# Intro to Design Thinking

15 minutes





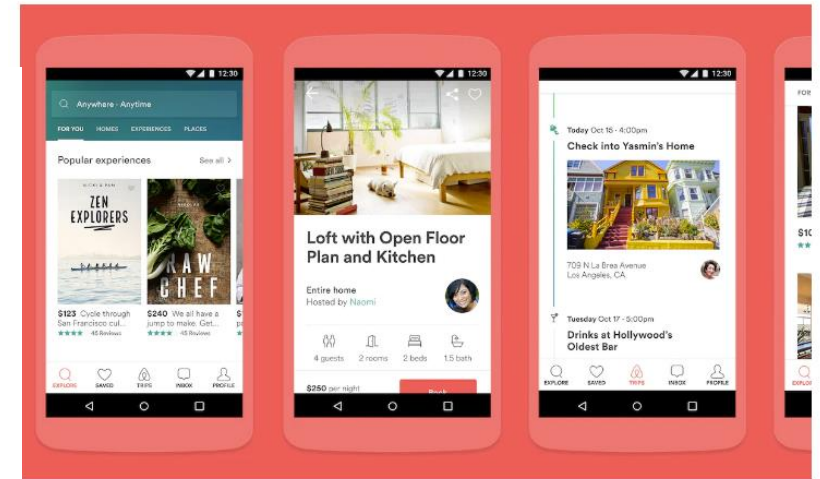
# DT Products and services



Uber Eats, an app that's redefining food delivery



Airbnb, the online platform that lets you stay anywhere



**PillPack**  
by amazon pharmacy

Prefer your meds  
in packets?

Visit PillPack >

# NETFLIX



# Design Thinking

Iterative process

Non linear

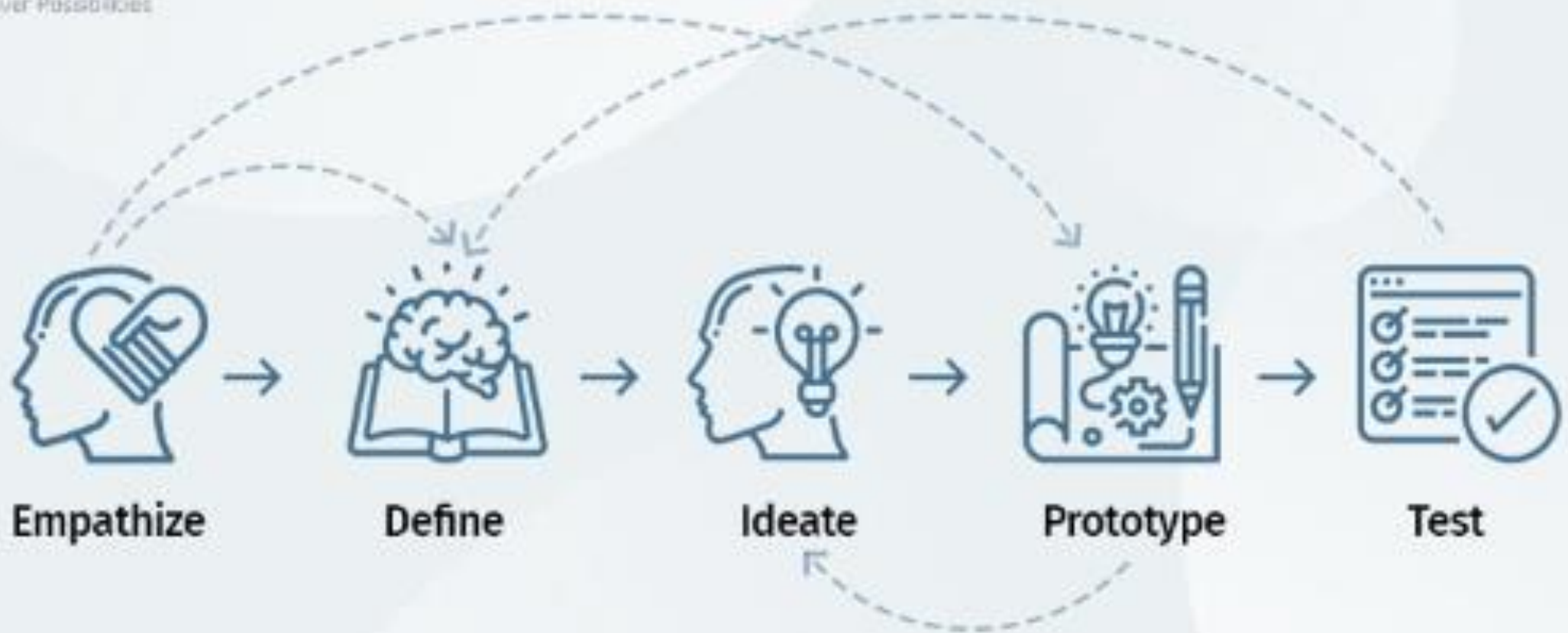


- Service
- Product
- Experience

Problem solving  
(Innovative + Creative)

Aims to achieve **practical solutions**

- Technically feasible
- Economically viable
- Desirable for user



- **Empathize**: research your users' needs.
- **Define**: state your users' needs and problems.
- **Ideate**: [challenge assumptions](#) and create ideas.
- **Prototype**: start to create solutions.
- **Test**: try your solutions out.

# Learning Outcome & Objective

5 minutes

# Learning outcome

By the end of this workshop, you will be able to **demonstrate five DT stages in redesigning products/services** for students learning experience



# Workshop objective

1. Identify 5 stages of Design Thinking.
2. Generate ideas for each stage of Design Thinking.
3. Propose solutions for the given Design Thinking challenge.

# Content

## Contents

### Why we need design thinking

Tackle complex challenges

### Empathize

The heart of design

### Define

Reframe the problem

### Ideate

Beyond basic brainstorming

### Prototype

Get smarter, faster

### Test

Early and often

# The Challenge

5 minutes

*“Attending lectures is a waste of time. I can get better materials from MOOCs”*

*“Assignments are waste of time. I can get all answers online!”*

*“I don’t need teachers. I can learn on my own.”*

## The education challenge today ....

*“What I learn now isn’t what I will use when I work later...”*

*“I can learn everything online. Why should I attend classes?”*

*“With ChatGPT, I can get work done faster. I don’t understand why I need to memorise course content for exams!”*





# Reflection

5 minutes

- Why

# Activity (Reflection)

- Question : What will design thinking get me? / I expect Design thinking will get me to ....
- Group activity
- Duration : 5 minutes
- To do :
  - Write your initials on 3 post it notes
  - 3 Post-it notes (1 point each note) (3 minutes)
  - Paste on wall closest to your desk



# Phase 1 (a) : Empathize

60 minutes

# Phase 1

EMPATHIZE

“To create meaningful innovations,  
you need to know your users  
and care about their lives.”

- You can feel **what another person** (REAL people!) is **feeling**.
- Tell about **attitude and behavior** of users/customers/clients.
- **“Say Think Does Feel”**
- Empathy map

"Empathy is at the heart of design. Without the understanding of what others see, feel, and experience, design is a pointless task."

Tim Brown — IDEO



*In empathy work, connect with people and seek stories*



What does she

**THINK AND FEEL?**

What matters to her?

What is her primary focus?

What worries her?

What are her aspirations?

What does she...

**HEAR?**

What are students/teachers/staff/parents saying to influence her thinking?  
What does she hear SLT saying to her and others?

What does she hear matters to the school?

What does she...

**SEE?**

What is the environment like and how does it influence her?  
What does she see students doing?  
What does she see colleagues doing?  
What does she see SLT doing?



What does she

**SAY AND DO?**

What is her attitude towards others?

What does she do around school?

How does her behaviour change?



## Says

"It's very stressful"

"They give us more work"

"We have to figure it out ourselves"

"In-person teachers actually teach the class"

"I missing seeing my friends."

## Thinks

Why do we have so many assignments?

Why do my teacher teach differently online?

Why Google Meet sessions aren't helpful?

Why aren't there 1:1 tutoring sessions?

Why do my teachers take a long time to respond?



**Teresa**

## Does

Use educational websites

Complete many assignments

Attend scheduled Google Meets

Communicate with friends and teachers

Submit assignments in Google Classroom

## Feels

Anxious

Stressed

Annoyed

Concerned

Focused

Determined

Resourceful

Independent

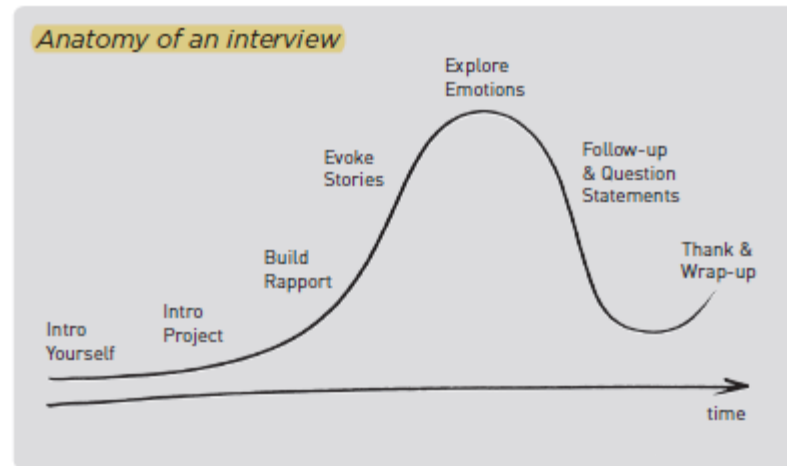
# How to interview?

How to interview?  
Have a conversation.

Be human.

Seek stories.

Talk about feelings.



Adapted from Michael Barry

## SAMPLE PROBLEM INTERVIEW OUTLINE

Introduce yourself - Disarm politeness

Determine if the prospect is in your customer segment (persona fit)

Problem setup - Introduce the problems / pains / passion

Gauge response – Do they have this problem? Or not?

Ask: “Tell me about the last time you [ insert problem ]”

Ask them to rate each problem/need (Must have, nice to have, don't care)

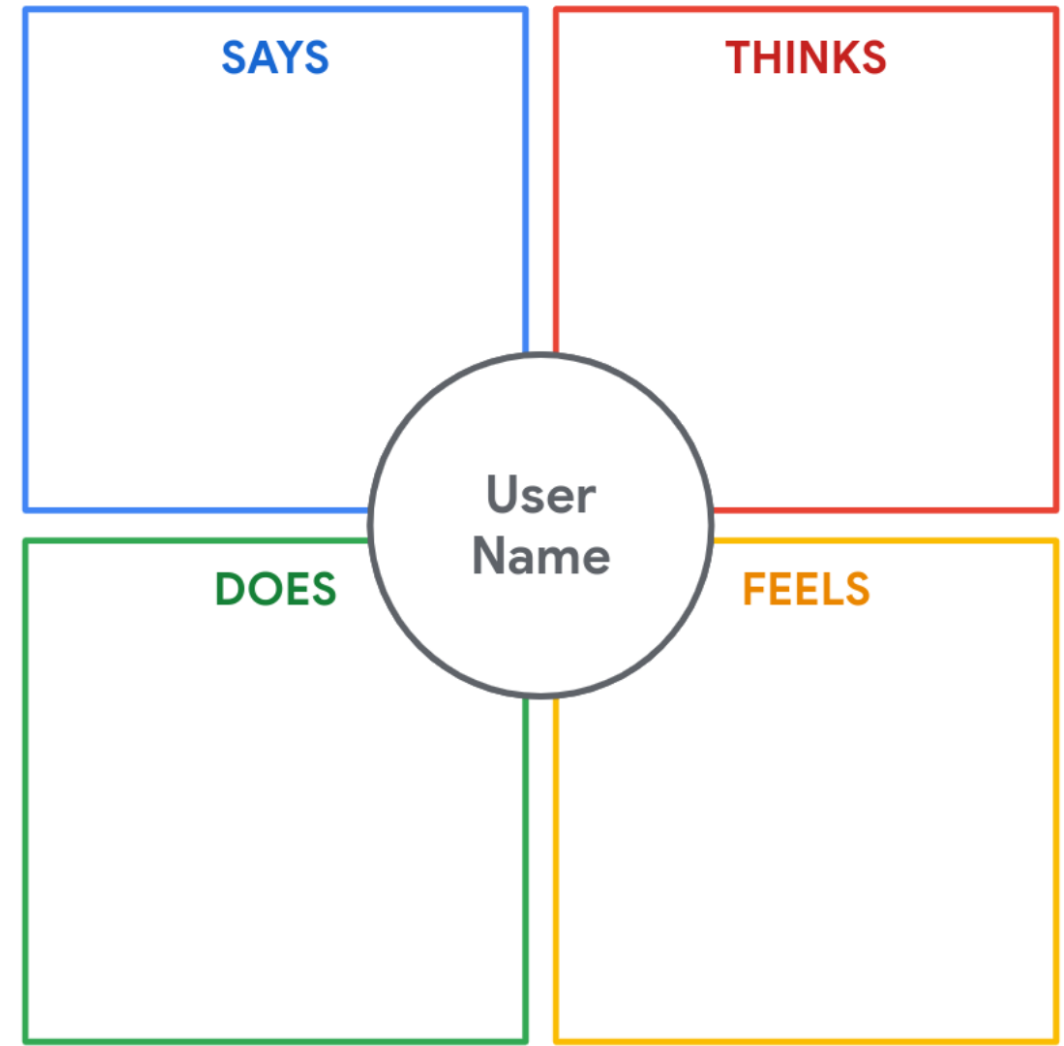
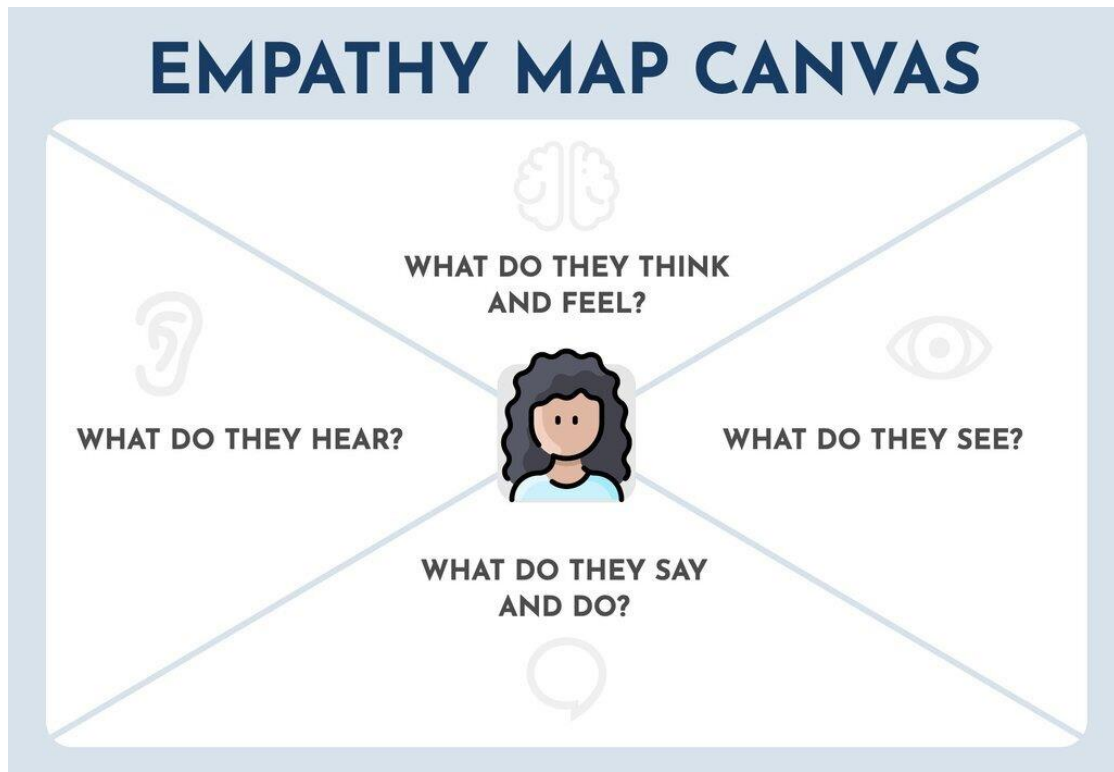
Why does this problem exist? What is their desired outcome?

Do they have other problems/needs?

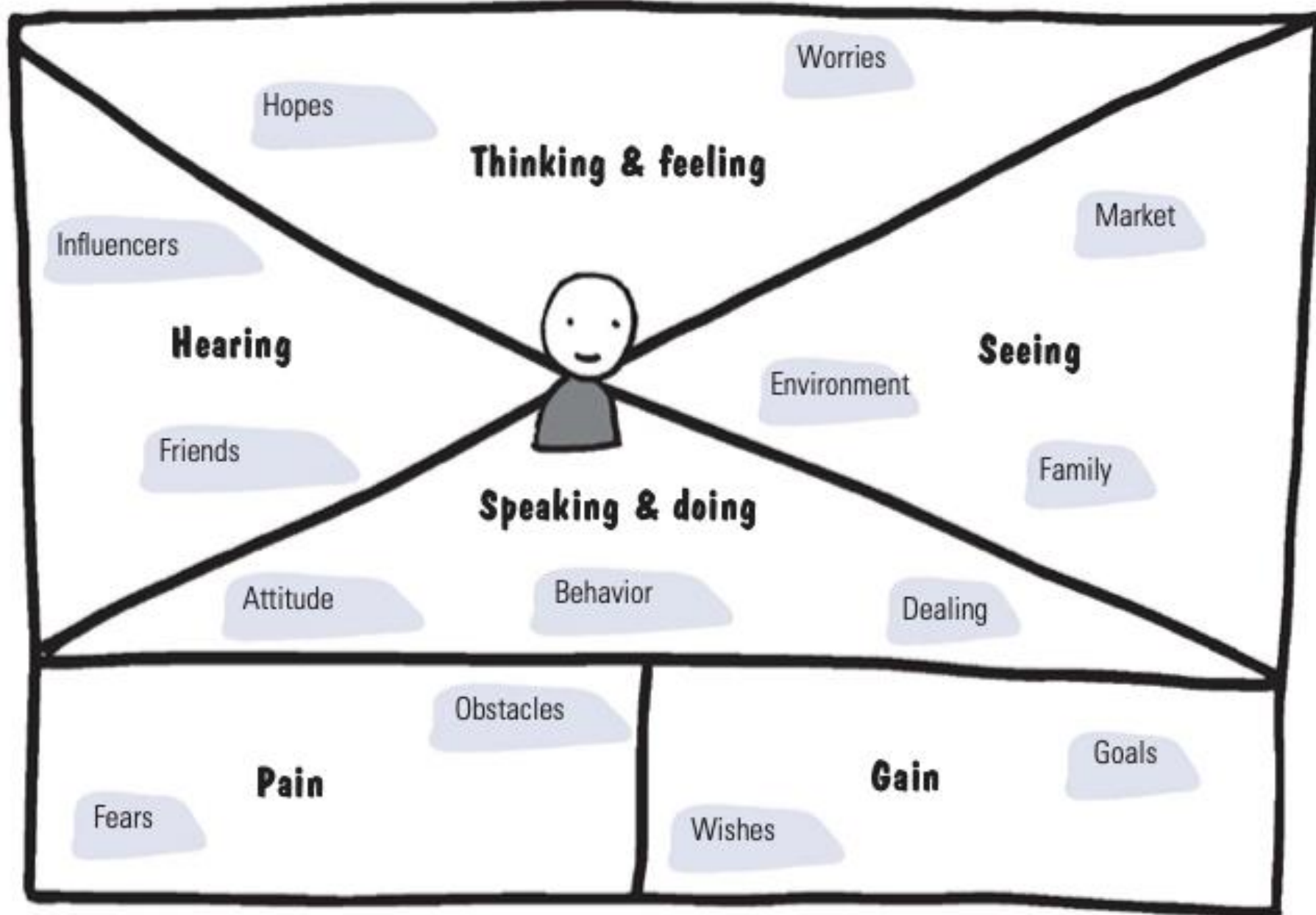
Thank Them

Ask For Referrals – who might they know who shares this problem?

# EMPATHY MAP CANVAS



# Empathy map



# Empathy Map

## 1 WHO are we empathizing with?

Who is the person we want to understand?  
What is the situation they are in?  
What is their role in the situation?

## GOAL

## 2 What do they need to DO?

What do they need to do differently?  
What job(s) do they want or need to get done?  
What decision(s) do they need to make?  
How will we know they were successful?

## 7 What do they THINK and FEEL?

### PAINS

What are their fears,  
frustrations, and anxieties?

### GAINS

What are their wants,  
needs, hopes and dreams?

What other thoughts and feelings might motivate their behavior?

## 3 What do they SEE?

What do they see in the marketplace?  
What do they see in their immediate environment?  
What do they see others saying and doing?  
What are they watching and reading?

## 6 What do they HEAR?

What are they hearing others say?  
What are they hearing from friends?  
What are they hearing from colleagues?  
What are they hearing second-hand?

## 4 What do they SAY?

What have we heard them say?  
What can we imagine them saying?

## 5 What do they DO?

What do they do today?  
What behavior have we observed?  
What can we imagine them doing?

# Activity 1 : Interview users

**Goal : To understand students' challenges**

**Output : Empathy map**

**Duration : 15 minutes**

To do :

1. Refer to empathy map canvas (Teams > Files > General > 1. Empathize and ICT INOV) .
2. Interview 2 – 3 students (undergraduate/postgraduate)
3. Ask questions according to empathy map sections
4. Complete the empathy map



# Discussion 1 : Empathy

- Present your findings to the class!
- Show your empathy map and describe your findings for each section.
- 5 minutes each team

# Reflection 1 (Empathy Map)

1. What is Empathy?

Ability to understand the feeling of others.

2. Name several quadrants of the Empathy Map?

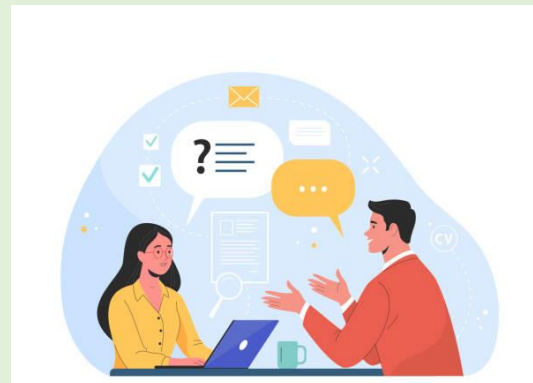
Say + Think + Does + Feel

3. What does the Empathy Map tell?

Attitude and Behaviour of users

4. How can we do Empathy?

Interview



# Congratulations!

You have now completed...



1. Empathy Map



# Phase 1 (b) : Empathize

60 minutes

- What
- Activity

# PERSONA CANVAS

Who are we designing for?



Fictional character

Who are the end users?

NEGATIVE TRENDS

Negative trends from the environment

POSITIVE TRENDS

Positive trends from the environment

Understand user **pain points** & **motivation**

HEADACHES

Professional and work related issues

NEED

What does this person really want?

OPPORTUNITIES

Professional and work related positive outcomes

FEARS

Personal issues

NAME \_\_\_\_\_

ROLE \_\_\_\_\_

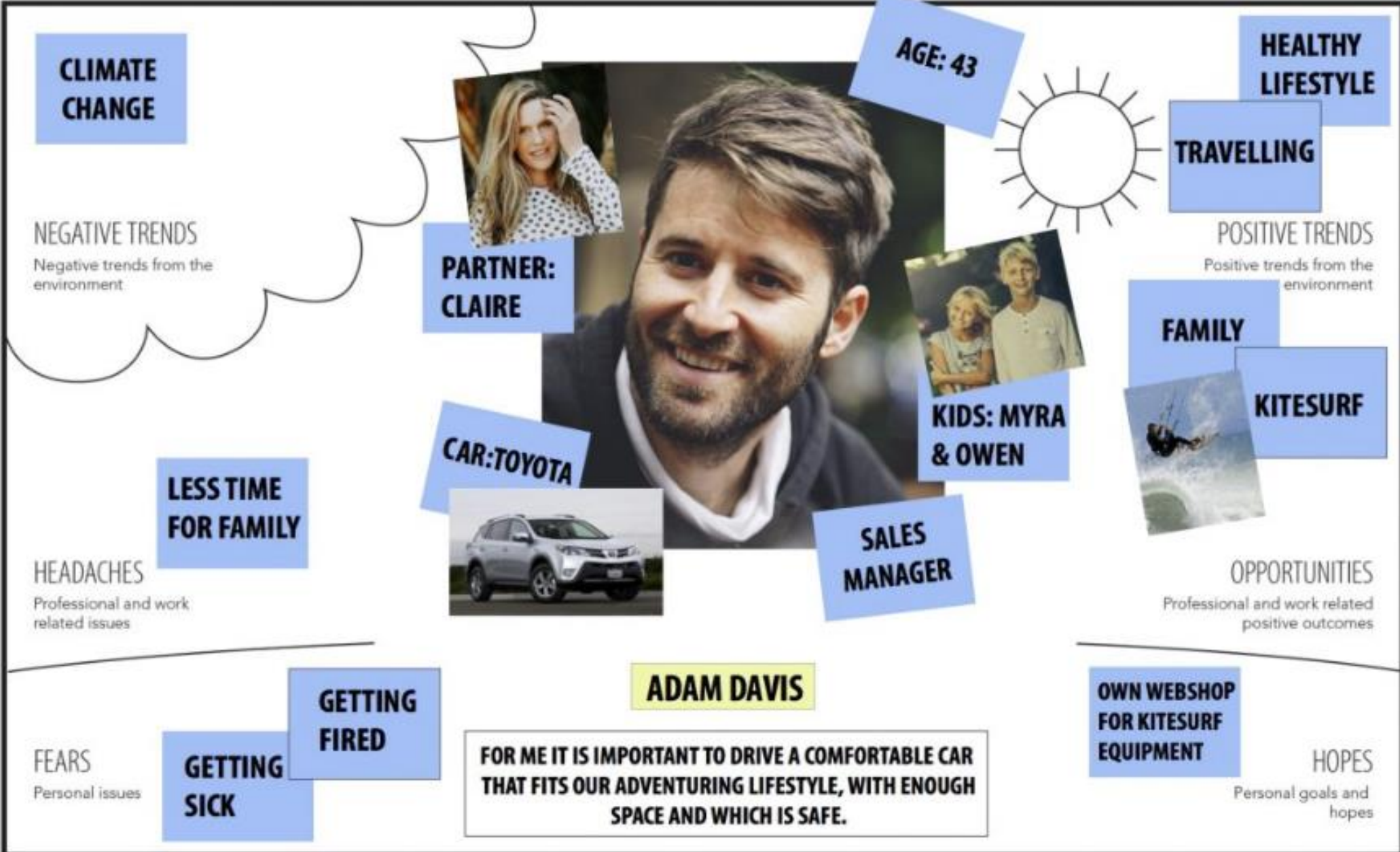
HOPES

Personal goals and hopes

Persona canvas

# PERSONA CANVAS

# TOYOTA DRIVER





# Activity 2 : User Persona

**Goal : To identify your users (i.e. students') profile.**

**Output : Persona canvas**

**Duration : 15 minutes**

To do :

1. Refer to Persona Canvas (Teams > Files > General > 1. Empathize and ICT INOV).
2. Discuss your findings with your team members.
3. Complete the Persona Canvas.

# Discussion 2 : Persona Canvas

- Present your findings to the class!
- 5 minutes
- Show :
  - Persona Canvas

# Reflection 2 (Persona Canvas)



1. Who is the person in the Persona Canvas?  
End user / client / customer / etc.
2. What does Persona Canvas tell?  
Understand pain points and motivation
3. What are some components of Persona Canvas?  
Need + Positive/Negative Trends + Opportunities  
+ Hope + Headache + Fear

# Congratulations!

You have now completed...



1. Empathy Map



2. Persona Canvas

# Congratulations!

You have now completed...







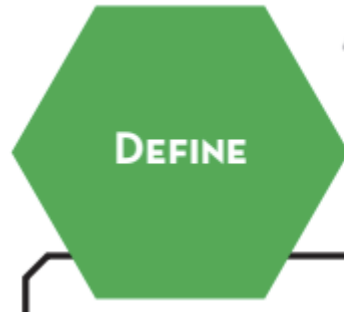


# Phase 2 (a) : Define (POV)

30 minutes

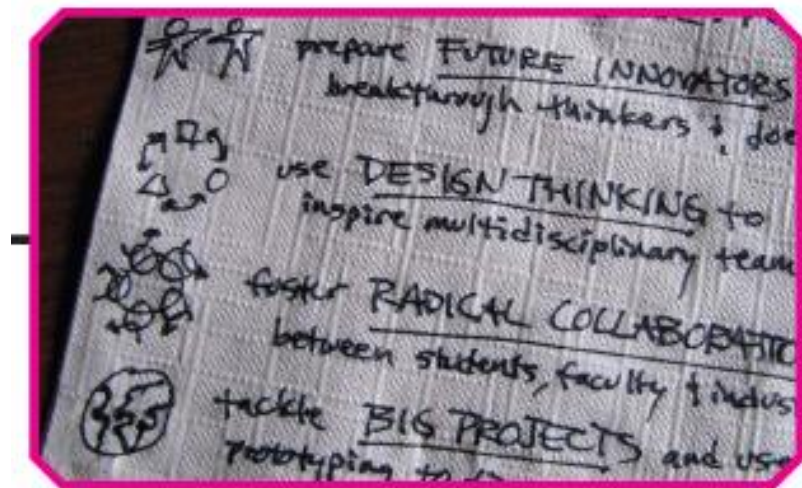
- What
- Activity

# Phase 2



“Framing the right problem is the only way to create the right solution.”

- **Make sense** of information gathered in Empathize stage.
- Bring clarity and focus.
- **Goal** : Craft meaningful and actionable **problem statement** (i.e. Point Of View)
- **POV** determines right **CHALLENGE** to address



Articulate the meaningful challenge

# Point of View (POV)

- Clearly and coherently explains **what problem** your design process **aims to solve**.
- Defines the **user**, their **need**, and **why** the need is **important** to that user.
- Identifies the **gap** between the **current state** (i.e., the user's problem) and the **desired state** (i.e., the goal) of a product or service.

USERS  
(Be very specific)

NEEDS  
(verb)

Surprising  
INSIGHTS

Defines the type of specific user  
whom you're writing your POV about.

Identifies the users' essential  
needs/goals.

Synthesizes the gathered information  
into a key takeaway.  
This statement can be used to  
design a solution.

needs to

because

## Point of View Template – Example

User	Need	Insight
<p>An adult person who lives in a city</p>	<p>To use a car for 10-60 minute trips 1-4 times per week</p>	<p>The user would not want to own his own car as it would be too expensive compared to his needs. He would like to share a car with others who have similar needs, however, there are no easy and affordable solutions for him. It's important for the user to think and live green and to not own more than he truly needs.</p>

# POINT OF VIEW STATEMENT

\_\_\_\_\_ needs a way to \_\_\_\_\_  
(User name) (Verb)

because \_\_\_\_\_.  
(Surprising Insight)

# Point of View Statement (example)

An adult person who lives in the city...  
needs access to a shared car 1-4 times  
for 10-60 minutes per week ... because he  
would rather share a car with more  
people as this is cheaper, more  
environmentally friendly, however, it  
should still be easy and safe for more  
people to share.

## POINT OF VIEW STATEMENT

\_\_\_\_\_ needs a way to \_\_\_\_\_  
(User name) (Verb)

because \_\_\_\_\_  
(Surprising Insight)



# Activity 3 : POV

**Goal : To synthesize insights from your users.**

**To identify problem that needs to be solved.**

**Output : POV statement**

**Duration : 10 minutes**

To do :

1. Refer to POV Template (Teams > Files > General > 2. Define and ICT INOV).
2. Gather insights from your findings with your team members.
3. Produce one (1) POV statement.

# Discussion 3 : POV

- Present your findings to the class!
- 5 minutes
- Show :
  - POV statement



## Reflection 3 (POV)

1. What is Define for?

Make sense of information previously gathered.

2. Why is POV important?

Identify problems that design aims to solve.

3. How many components POV has and what are they?

Three. User + Need + Insights (why need important to user)

4. POV determines right CHALLENGE to address

# Congratulations!

You have now completed...



1. Empathy Map



2. Persona Canvas



3. POV

# Congratulations!

You have now completed...

1. Empathy Map
2. Persona Canvas



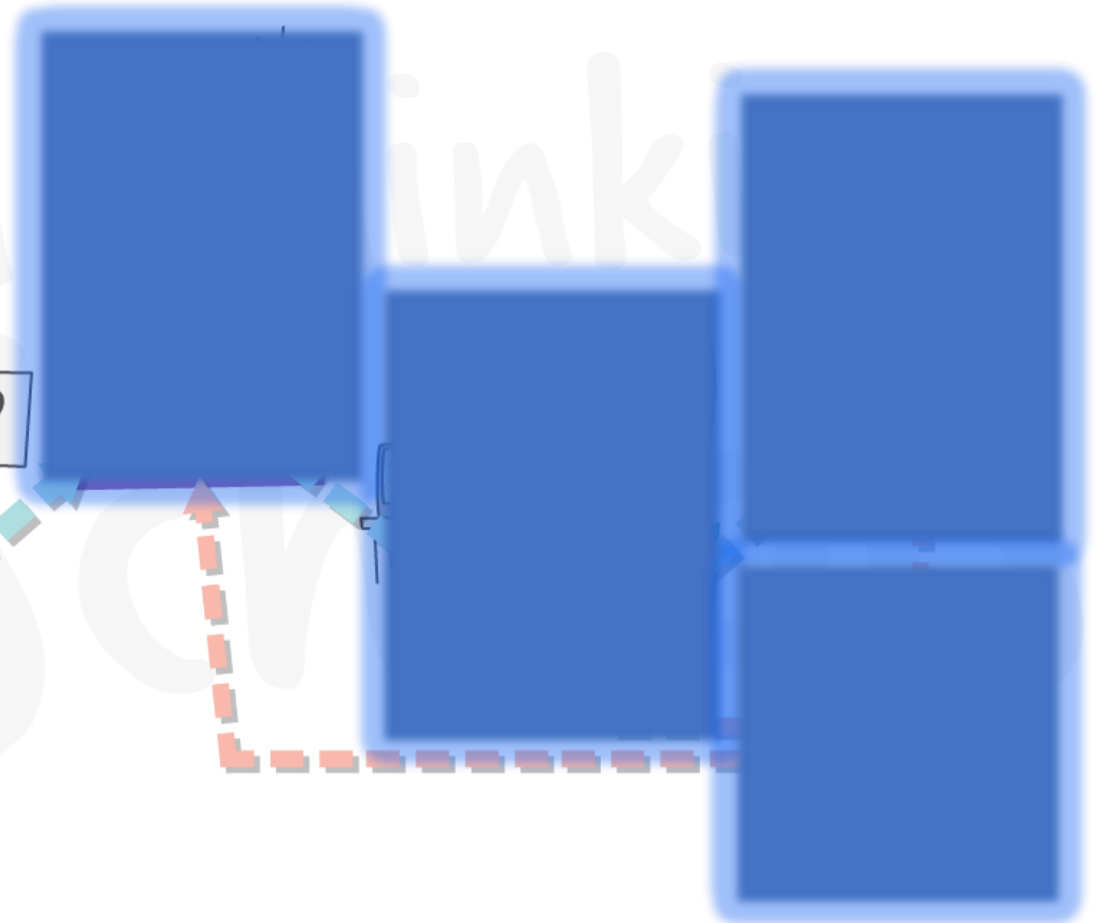
Empathise



Define



3. POV

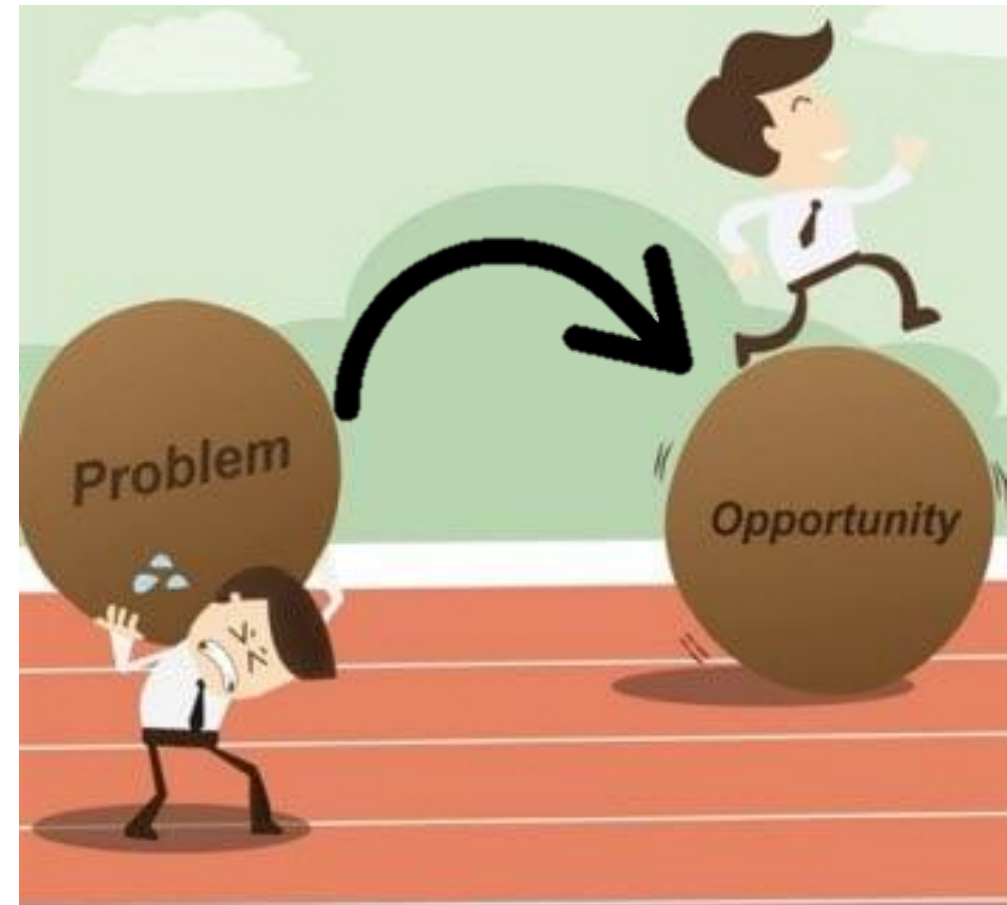




# Phase 2 (b) : Define (HMW)

30 minutes

# How Might We (HMW)





# How Might We...?

HMW:

Create multiple patient profiles

HMW:

Keep the layout simple?

HMW:

Use autofill to reduce repetition?

# HOW MIGHT WE?

HMW

Make s/t big feel small?

HMW

Make the user feel heard?

HMW

Make it seem like a good deal?

HMW

Simply tell our story?

HMW

Make it feel like it is for me?

HMW

Make it relateable?

HMW

Make the outcome ~~inevitable~~ NATURAL

HMW

Satisfy the data-driven?

HMW

Include expert validation

HMW

Sell a client that doesn't want to be sold

HMW

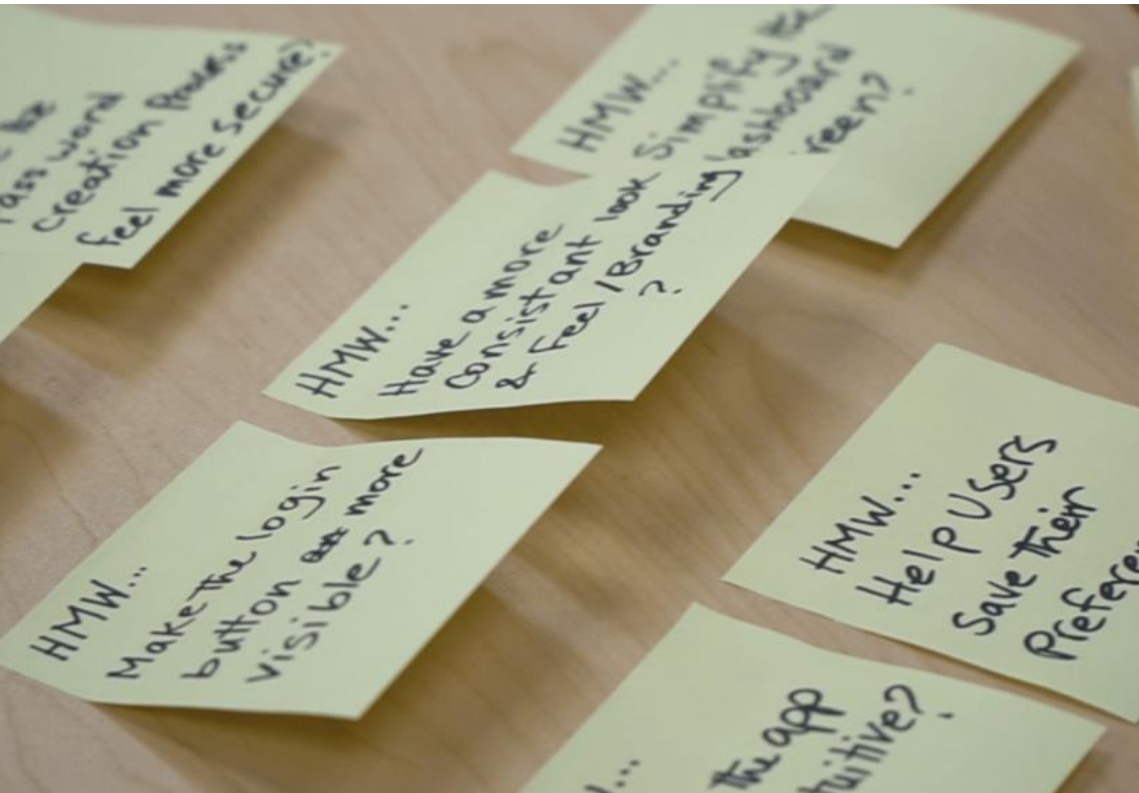
Shape a users criteria?

HMW

create social validation for the product?

HMW

Make the user feel like they are the decision maker



# how might we...?

KNOW

define  
identify  
describe  
match  
recognise  
select  
examine  
tell  
visualise

UNDERSTAND

predict  
associate  
demonstrate  
distinguish  
discover  
research  
transform  
describe  
compare

APPLY

solve  
apply  
construct  
choose  
prepare  
produce  
chart  
judge  
transfer

ANALYSE

focus  
compare  
experiment  
question  
test  
correlate  
separate  
analyse  
compare

EVALUATE

reframe  
recommend  
support  
convince  
defend  
assess  
consider  
critique  
persuade

CREATE

create  
develop  
modify  
rewrite  
devise  
imagine  
negotiate  
design  
structure

- For example, you have observed that youths tend not to watch TV programs on the TV at home, some questions which can guide and spark your solution...
  - How might we make TV more social, so youths feel more engaged?
  - How might we enable TV programs to be watched anywhere, at anytime?
  - How might we make watching TV at home more exciting?



# How Might We...?

HMW:

Create multiple patient profiles

HMW:

Keep the layout simple?

HMW:

Use autofill to reduce repetition?

Be concise.

One idea per sticky note.

Not too broad, not too narrow.

If the ideas are not written, it can't be voted

# HOW MIGHT WE?

HMW

Make st big feel small?

HMW

Make the user feel heard?

HMW

Make it seem like a good deal?

HMW

Simply tell our story

HMW

Make it feel like it is for me?

HMW

Make it relateable?

HMW

Make the outcome inevitable  
NATURAL

HMW

Satisfy the data-driven?

HMW

Include expert validation

HMW

Sell a client that doesn't want to be sold

HMW

Shape a users criteria?

HMW

create social validation for the product?

HMW

Make the user feel like they are the decision maker



Avoid....

## Too BROAD

- HMW .... have a better education?
- HMW ...save the world?
- HMW ...get more customer?
- HMW....do more exercise?

## Too SPECIFIC

- HMW ... turn all website call to action buttons blue
- HMW ... get more paying

customers by running facebook ads

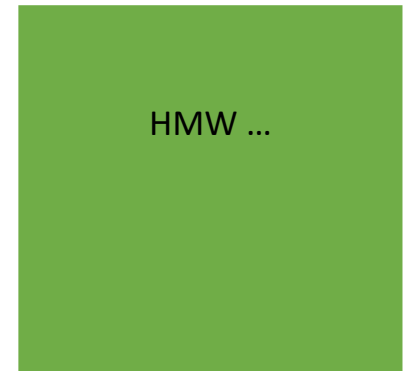
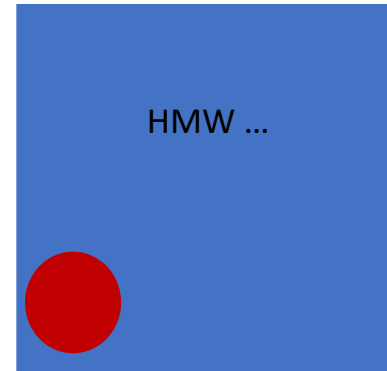
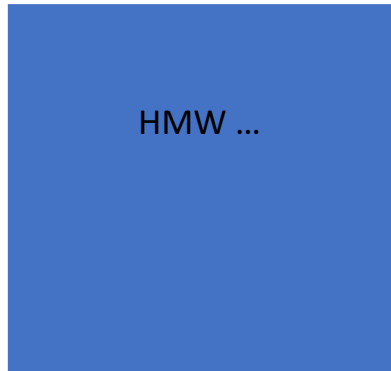
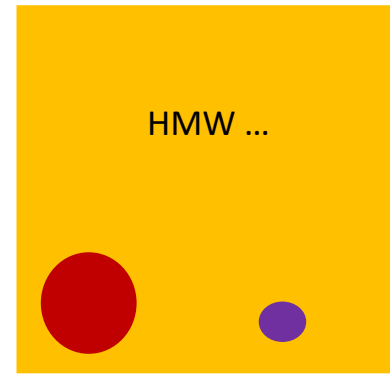
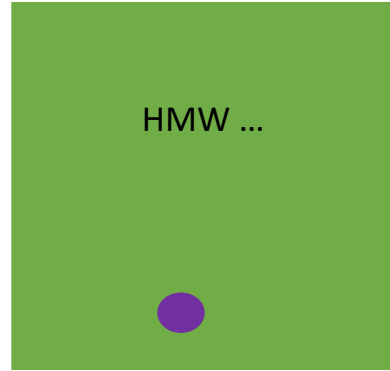
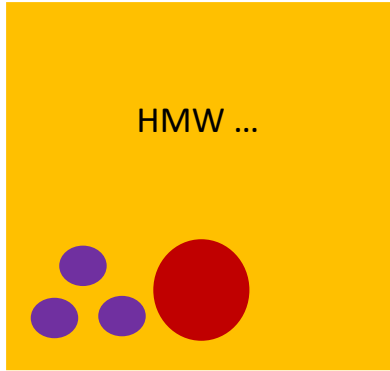
Don't combine two ideas!

“HMW ... be faster and better?”


to

- HMW ... be faster in product development
- “HMW ... have a higher quality standard?”

# “How Might We..”



 Purple dot refers to Individual votes

 Red dot refers to 3 most popular (highest) votes

# Activity 4 : HMW

**Goal : To produce questions that can spark ideation sessions**

**To explore ideas that can help solve the design challenge**

**Output : HMW questions and votes**

**Duration : 15 minutes**

To do :

1. Refer to POV Template (Teams > Files > General > 2. Define and ICT INOV.
2. Write down the POV.
3. All members think and write HMW questions individually.
4. Group the HMW questions.
5. Cast your votes.
6. The highest vote will be the challenge the team will design.



# Discussion 4 : HMW

- Present your findings to the class!
- 5 minutes

# Reflection 4 (HMW)



1. What is HWM for?
  - 1) Turn challenge into question.
  - 2) Turn problems into opportunities.
2. Why is HMW important?

Identify questions/explore ideas that design aims to solve.
3. Describe how to do HMW?

Write POV – Each individual write HMW – Group questions – Cast vote

# Congratulations!

You have now completed...



1. Empathy Map



2. Persona Canvas



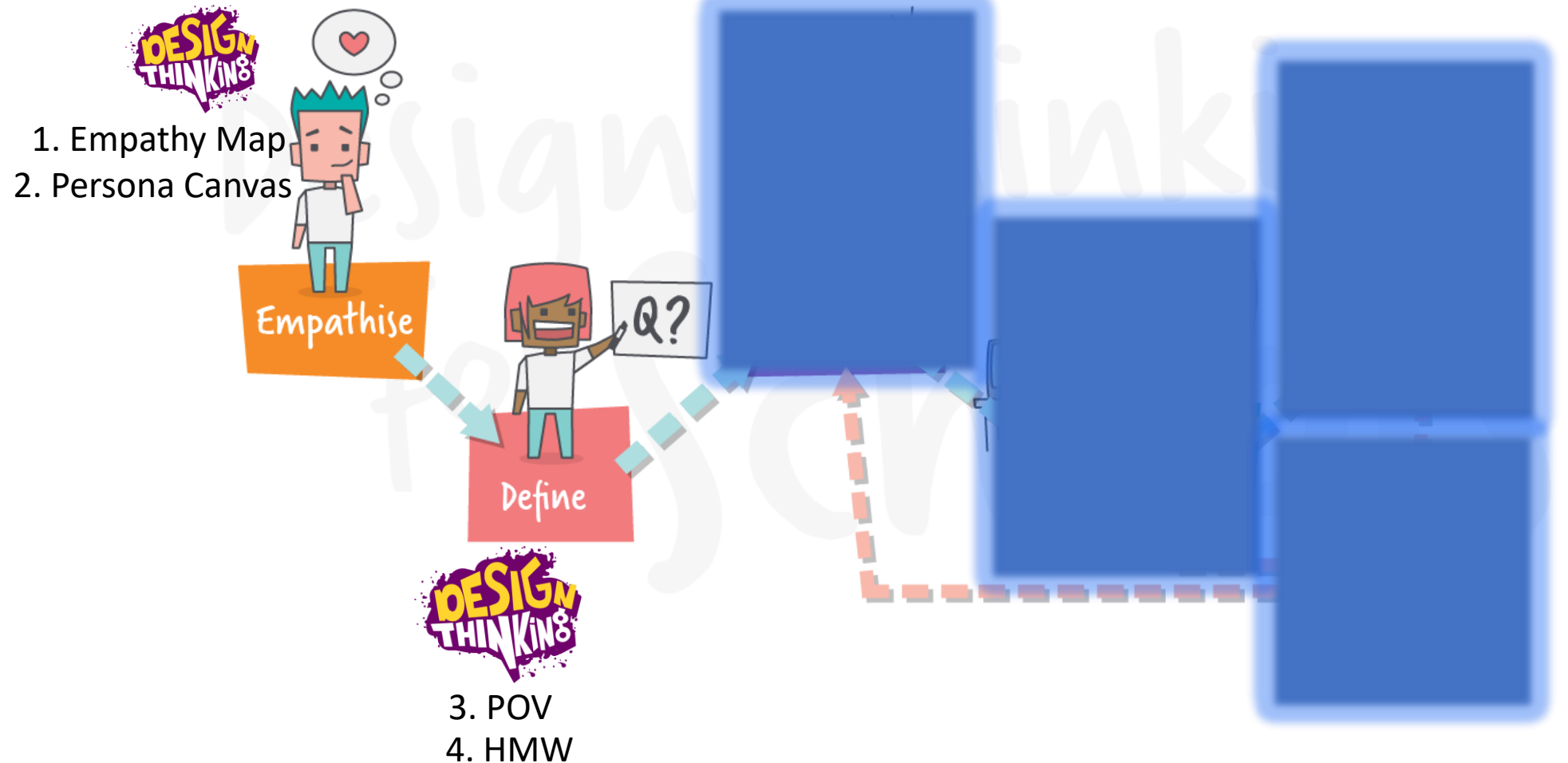
3. POV



4. HMW

# Congratulations!

You have now completed...





# Phase 3 (a) : Ideate (RS)

30 minutes

## Phase 3

IDEATE

“It’s not about coming up with the ‘right’ idea, it’s about generating the broadest range of possibilities.”

- Ideation means generating **lots of ideas**.
- **Brainstorming** encourages you to think expansively and without constraints.
- **Quantity** over quality!
- Remember **Brainstorming rules**



Maximize your innovation potential

# Useful Tips!

## Rules of Brainstorming

---



Defer Judgment



Encourage Wild Ideas



Build on the Ideas of Others



Stay Focused on the Topic



One Conversation at a Time



Be Visual



Go for Quantity



## BRAINSTORM RULES

1. DEFER JUDGEMENT
2. ENCOURAGE WILD IDEAS
3. BUILD ON THE IDEAS OF OTHERS
4. STAY FOCUSED ON TOPIC
5. ONE CONVERSATION AT A TIME
6. BE VISUAL
7. GO FOR QUANTITY

POST THE BRAINSTORM RULES.

## ***Brainstorming Rules***

These seven rules will make your brainstorming session focused, effective and fun. Introduce them at the start of every brainstorm, even if they merely serve as a reminder for experienced participants.

---

**Defer judgement.** There are no bad ideas at this point. There will be plenty of time to narrow them down later.

---

**Encourage wild ideas.** Even if an idea doesn't seem realistic, it may spark a great idea for someone else.

---

**Build on the ideas of others.** Think "and" rather than "but"

---

**Stay focused on topic.** To get more out of your session, keep your brainstorm question in sight.

---

**One conversation at a time.** All ideas need to be heard, so that they may be built upon.

---

**Be visual.** Draw your ideas, as opposed to just writing them down. Stick figures and simple sketches can say more than many words.

---

**Go for quantity.** Set an outrageous goal—then surpass it. The best way to find one good idea is to come up with lots of ideas.

---

# Activity 5 : Ideation 1 (Rolestorming)

**Goal : To produce questions that can spark ideation sessions**

**To explore ideas that can help solve the design challenge**

**Output : Rolestorming ideas and votes**

**Duration : 10 minutes**

To do :

1. Refer to Rolestorming Template (Teams > Files > General > 3. Ideate and ICT INOV).
2. Pick or identify a character you'd like to play a role (example : Sherlock Holmes, Hermoine Granger, Walt Disney, Oprah, Mary Poppins, Leonardo da Vinci, etc.).
3. List several ideas on how you would solve the challenge if you were that person. (5 mins)
4. Group the ideas with other team members. (3 mins)
5. Cast your votes. (2 mins)
6. The highest vote will be the foundation for solution the team will design.

 2 mins

# Rolestorming

Role : \_\_\_\_\_

Ideas

Drop fliers  
from sky

Write here

Write here

Write here

Write here

Write here


Write here

Write here

Write here

Need more sticky  
notes? →

Write here

 2 mins

# Rolestorming

## Example : Superman (feel free to change)

Ideas

Drop fliers  
from sky

Write here

Write here

Write here

Write here

Write here


Write here

Write here

Write here

Need more sticky  
notes? →

Write here

 2 mins

# Rolestorming

## Example : Influencer (feel free to change)

Ideas / Activities

Tik tok short videos

Instagram posts

Write here

Write here

Write here

Write here

Write here

Write here

Write here

Need more sticky notes? →

Write here

# Ideas compilation (Rolestorming)

- Ideas :

Infographics?

Tik tok short videos

Write here

Write here

Write here

Drop fliers from sky

Write here

Make a visit

Write here



# Phase 3 (b) : Ideate (What if)

30 minutes



# Activity 6 : Ideation 2 (What if..)

**Goal : To produce questions that can spark ideation sessions**

**To explore ideas that can help solve the design challenge**

**Output : What-if ideas and votes**

**Duration : 10 minutes**

To do :

1. Refer to What if Template (Teams > Files > General > 3. Ideate and ICT INOV).
2. What if you have ....\*Choose 1 constraint : 2 days / RM 100 / no internet / no manpower?
3. List several ideas on how you would solve the challenge for the chosen constraint. (5 mins)
4. Group the ideas with other team members by impact and effort. (3 mins)
5. Cast your votes. (2 mins)
6. The highest vote will be the foundation for solution the team will design.

 2 mins

# What if ...

## Constraint 1: "You had 2 days"

Ideas / Activities

Send whatsapp

Make phone calls

Write here

Write here

Write here

Write here

Write here

Write here

Write here

Need more sticky notes? →

Write here

 2 mins

# What if ...

## Constraint 2: "There was no internet"

Ideas / Activities

Make a visit	Write here	Write here
Write here	Write here	Write here
Write here	Write here	Write here

Need more sticky notes? →

Write here

 2 mins

# What if ...

**Constraint 3: "You had a budget of less than RM100"**

Ideas / Activities

Offer online  
freebies

Make gifts  
from recycle  
materials

Write here

Write here

Write here

Write here

Write here

Write here

Write here

Need more sticky  
notes? →

Write here



# Sort solutions by impact & effort



10 min

Copy & Paste all sticky notes from previous slide & move to the respective quadrant

**Impact**

Easy to execute,  
high impact

Difficult to  
execute,  
high impact

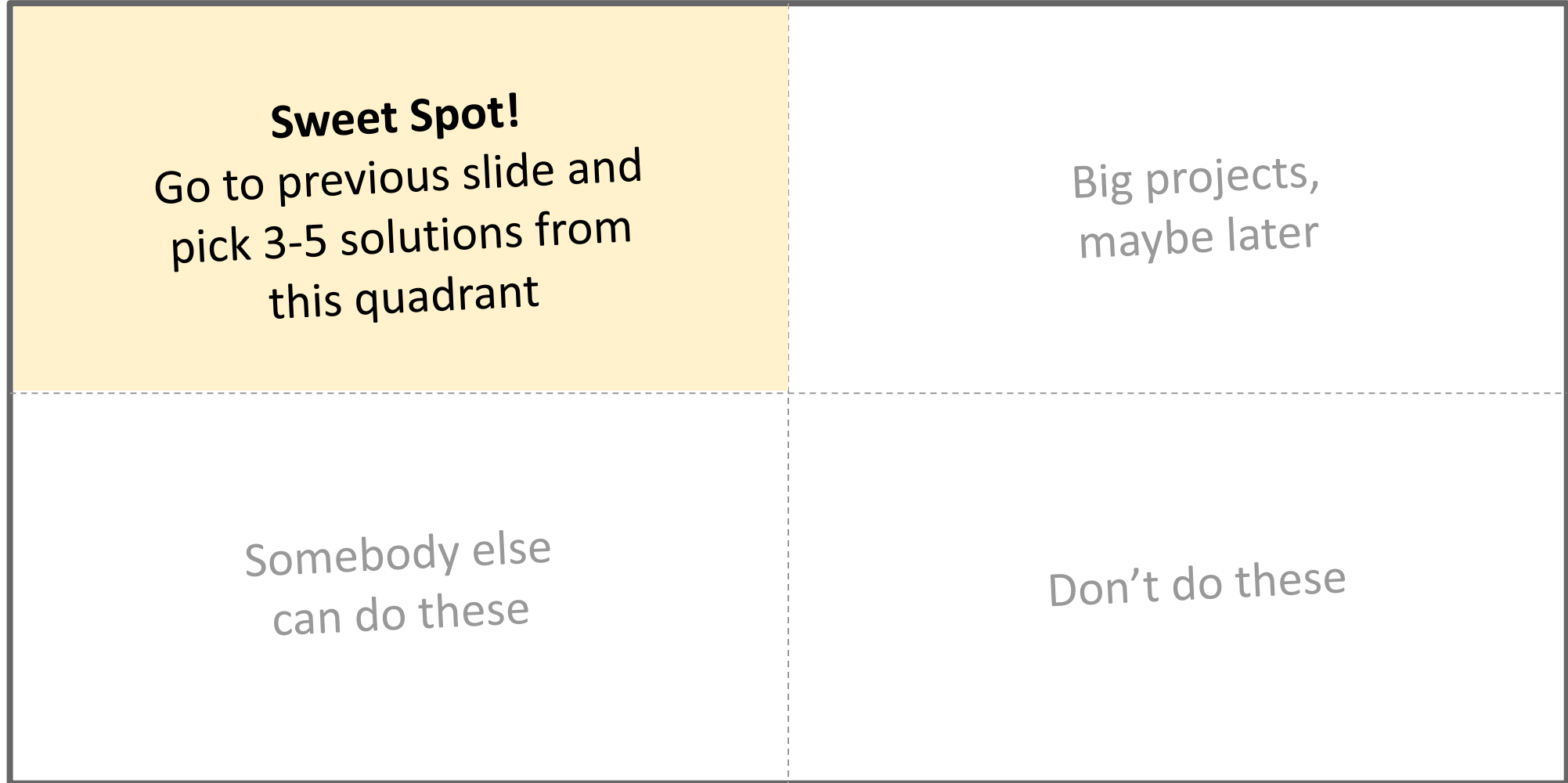
Easy to execute,  
low impact

Difficult to  
execute,  
low impact

**Effort**



**Impact**



**Effort**

# Discussion 5&6 : Ideation

- Present your findings to the class!
- 5 minutes



## Reflection 5&6 (Ideation)

1. What is Ideation for?

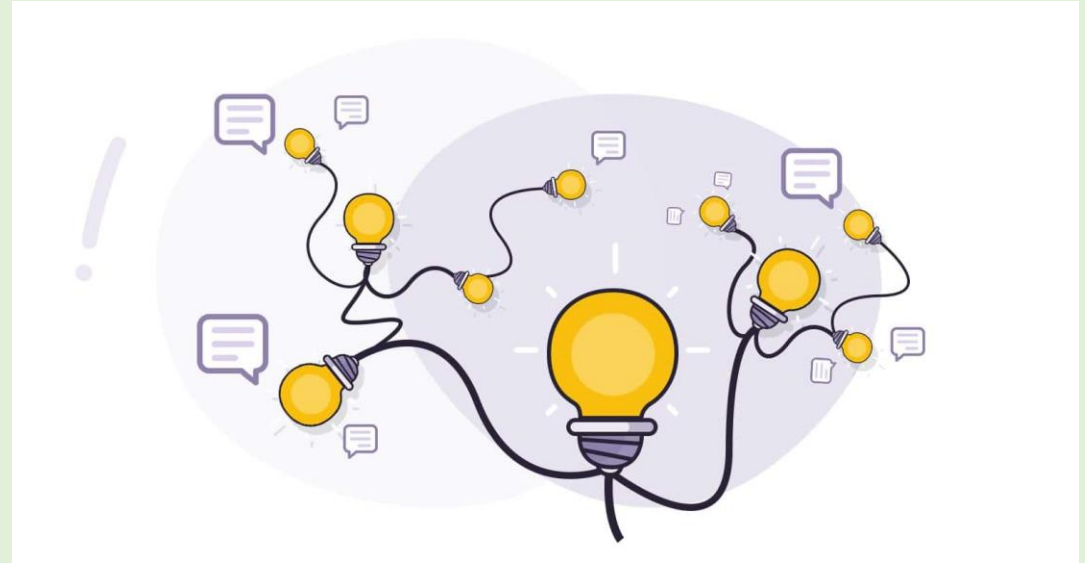
Generate lots of ideas.

2. State some rules of Brainstorming?

3. List some methods for Ideation?

Roleplaying

What-if



- Defer Judgment
- Encourage Wild Ideas
- Build on the Ideas of Others
- Stay Focused on Topic
- One Conversation at a Time
- Be Visual
- Go for Quantity



# Congratulations!

You have now completed...



1. Empathy Map



2. Persona Canvas



3. POV



4. HMW



4. Rolestorming



4. What if...

# Congratulations!

You have now completed...

- 1. Empathy Map
- 2. Persona Canvas



Empathise



Define

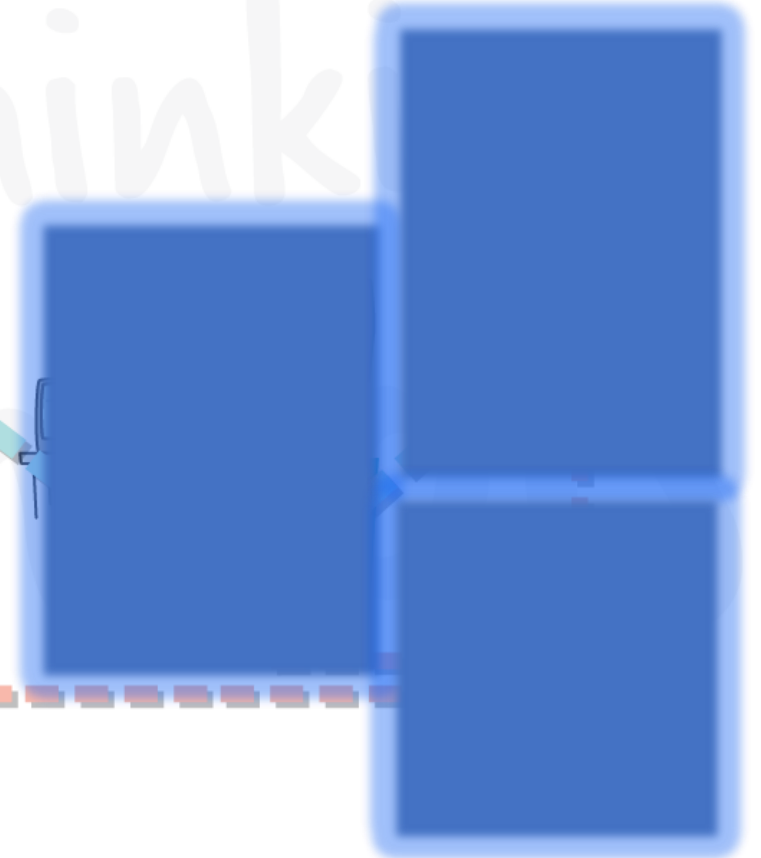


- 3. POV
- 4. HMW

- 5. Rolestorming
- 6. What if



Ideate





# Phase 4 : Prototype

30 minutes

# Phase 4

PROTOTYPE

“Build to think and test to learn.”

1. Making **ideas tangible**.
2. **Sharing** with others to gain **feedback** (direct response, improve, refine idea)
3. Low resolution (**Quick & Cheap**).
4. User can **interact**.
5. Test **possibilities**.
6. **Fail** quickly & cheaply.



*You can learn a lot from a very simple prototype*

Form and materials depend on the type of solution you developed, for example:



### **Services**

Role play, Video, Storyline, Flyer, etc.



### **Products**

Cardboard Model, Playdoh, etc.



### **Digital services/products**

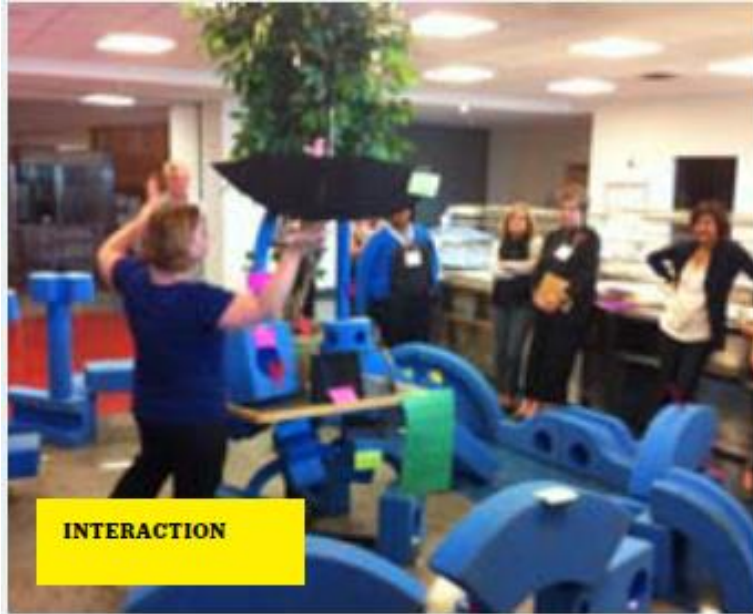
Paper sketch, PoP App, Mockup



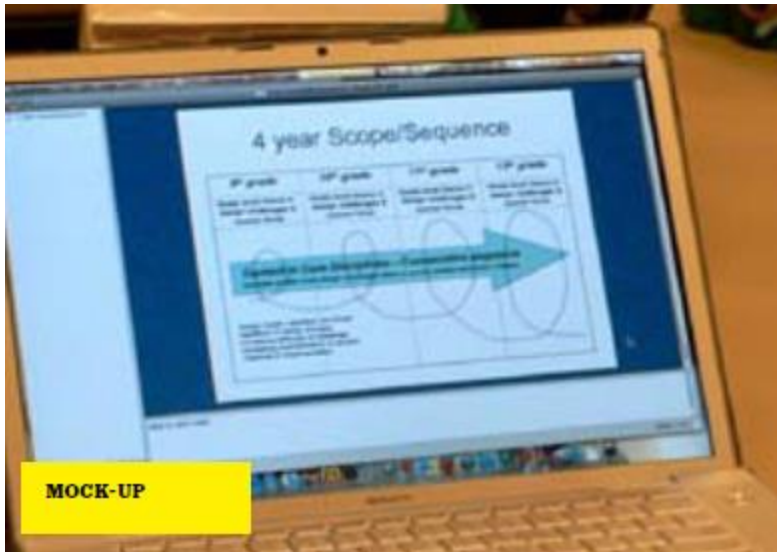
# Ways to prototype



DIAGRAM



INTERACTION



MOCK-UP



MODEL



ROLE PLAY





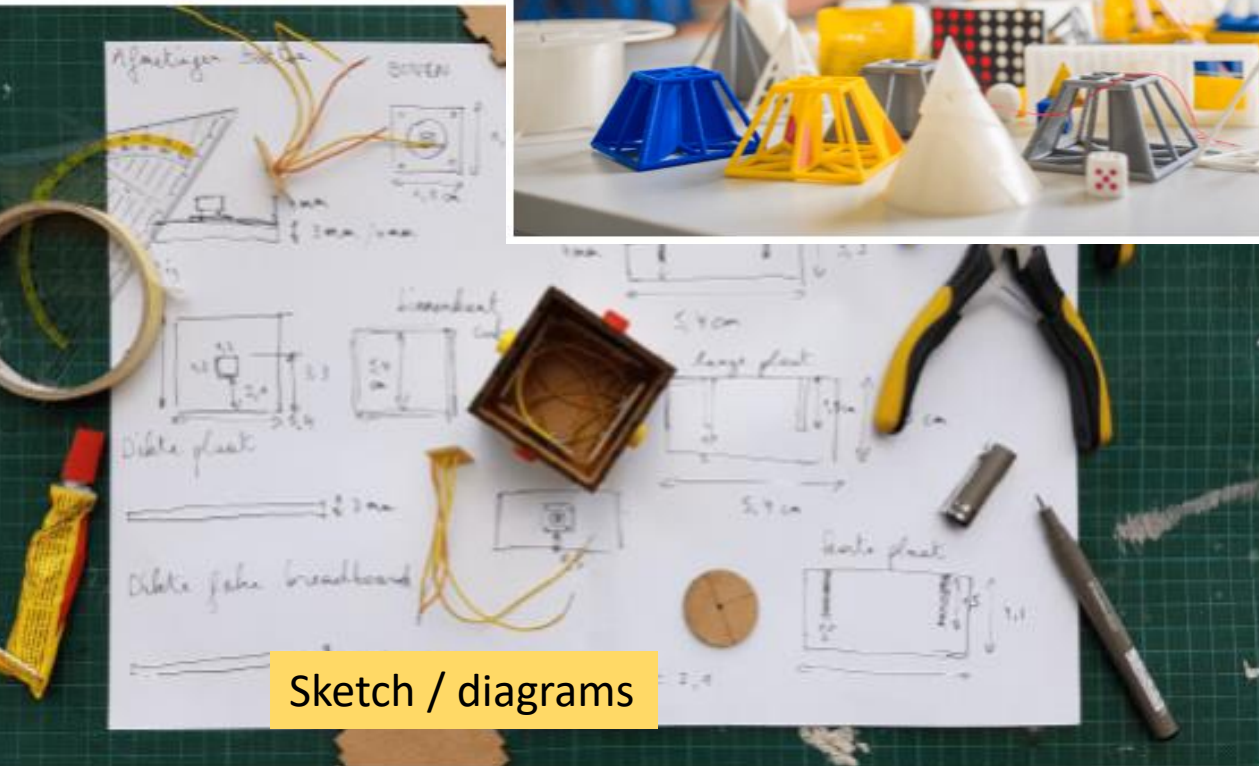
Lego prototype



Physical models



Wireframe / paper interface



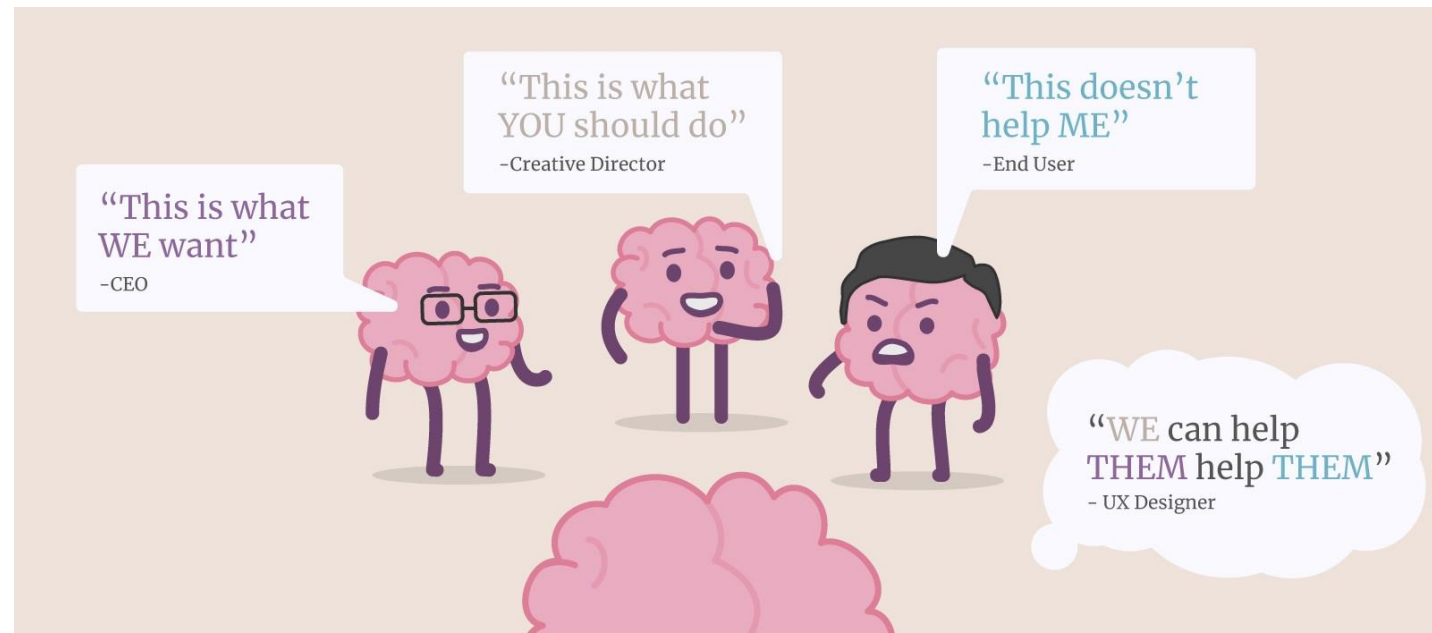
Sketch / diagrams



Storyboarding

# How to prototype

- **Start** building. → **What** to test?, **How** to test?
- Don't spend **too long** on one prototype (avoid emotional attachment!)
- A prototype **answer a specific question** when tested
- Build with **user in mind**
  - What to test?
  - What behavior to expect?



# Activity 7 : Prototyping

**Goal : To produce a tangible prototype (product) that answers your challenge**

**Output : Prototype of your choice**

**Duration : 15 minutes**

To do :

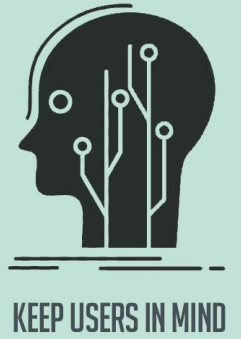
1. Refer to Prototype Tips and Template (Teams > Files > General > 4. Prototype and ICT INOV).
2. Design a product that answers your identified challenge (see Ideate).
3. Ensure that your prototype answers a specific question. (What and how to test?)
4. Present your prototype at the end of the session.

# Discussion 7 : Prototype

- Present your findings to the class!
- 5 minutes
- In your presentation, explain the following :
  1. What is your design challenge?
  2. What question are you testing?
  3. Who should be testing your prototype?
  4. State the type of prototype you built.
  5. Demo your prototype.



# Reflection 7 (Prototype)



1. What is Prototype for?

To test ideas and specific question.

2. What are 2 important questions in Prototyping?

**WHAT to test? and HOW to test?**

3. State some examples for Prototype?

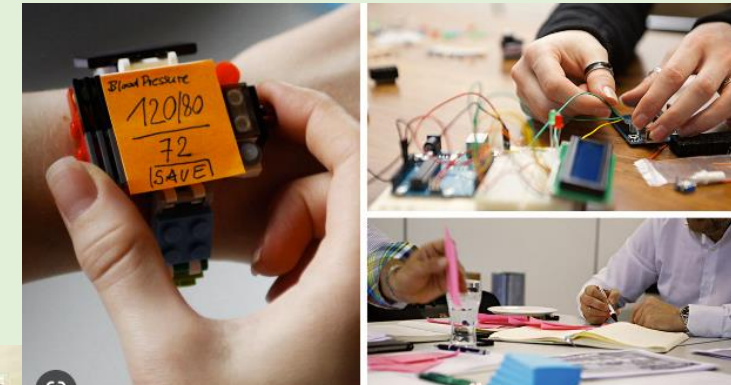
Roleplaying

Sketch/diagram

Wireframe / paper interface

Storyboard

Physical model



# Congratulations!

You have now completed...



1. Empathy Map



2. Persona Canvas



3. POV



4. HMW



4. Rolestorming



4. What if...



5. Prototype

# Congratulations!

You have now completed...

- 1. Empathy Map
- 2. Persona Canvas



Empathise



Define



- 3. POV
- 4. HMW

- 5. Rolestorming
- 6. What if



Ideate



Prototype



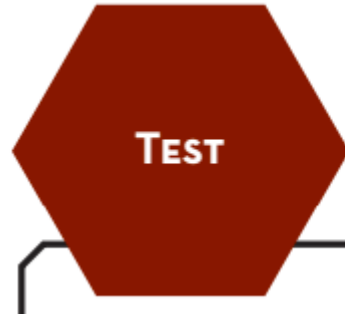




# Phase 5 : Test

30 minutes

# Phase 5



“Testing is an opportunity to learn about your solution and your user.”

- Get **feedback** about **prototype** from **user**
- Goal :
  - to refine prototype/solution
  - to learn about user
  - to refine POV
- Focus on **interaction** with user
- Ask – Do you **like** the solution? **Why?**
- Rule of thumb : **test as if you know you're wrong**
- Stay **neutral**



*The key to user testing is listening.*

# How to test?

- **Show don't tell**

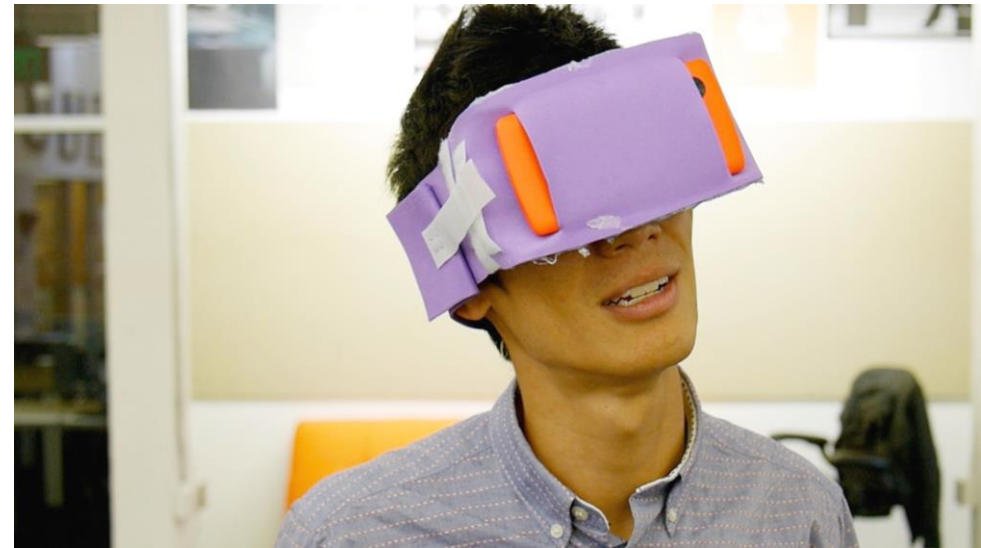
- Put prototype in users hands
- Don't explain (yet)
- Let tester interpret
- Watch how user use(or misuse)
- Listen to what they say(or questions)

- **Create experiences**

- Watch users reaction

- **Ask users to compare**

- Multi prototypes for users to test



# Activity 8 : Testing

**Goal : To let user use your solution and get feedback**

**Output : Testing**

**Duration : 15 minutes**

To do :

1. Refer to Test Sheet and Tips (Teams > Files > General > 5. Test and ICT INOV).
2. Find 2-3 target users (tester).
3. Let them test your prototype. Observe their behaviour and ask feedback (like? why? what is missing/confusing?).
4. Present your testing findings at the end of the session. Demo and Poster format.

# Discussion 8 : Testing

- Present your findings to the class!
- 5 minutes
- In your presentation, explain the following :
  1. What's your observation(and emotion) when user used your solution?
  2. What feedback user gave?
  3. What questions user asked?
  4. Based on this activity, what can be improved?
  5. What insights did you gain? / What did you learn?

# Reflection 8 (Testing)



1. What is Testing for?

To get feedback to improve solution. To learn about user.

2. What is the rule of thumb in Testing?

“Test as if you know you’re wrong”

3. State some methods on how to Test?

Show don't tell

Create experiences

Ask users to compare



# Congratulations!

You have now completed...



1. Empathy Map



2. Persona Canvas



3. POV



4. HMW



4. Rolestorming



4. What if...



5. Prototype

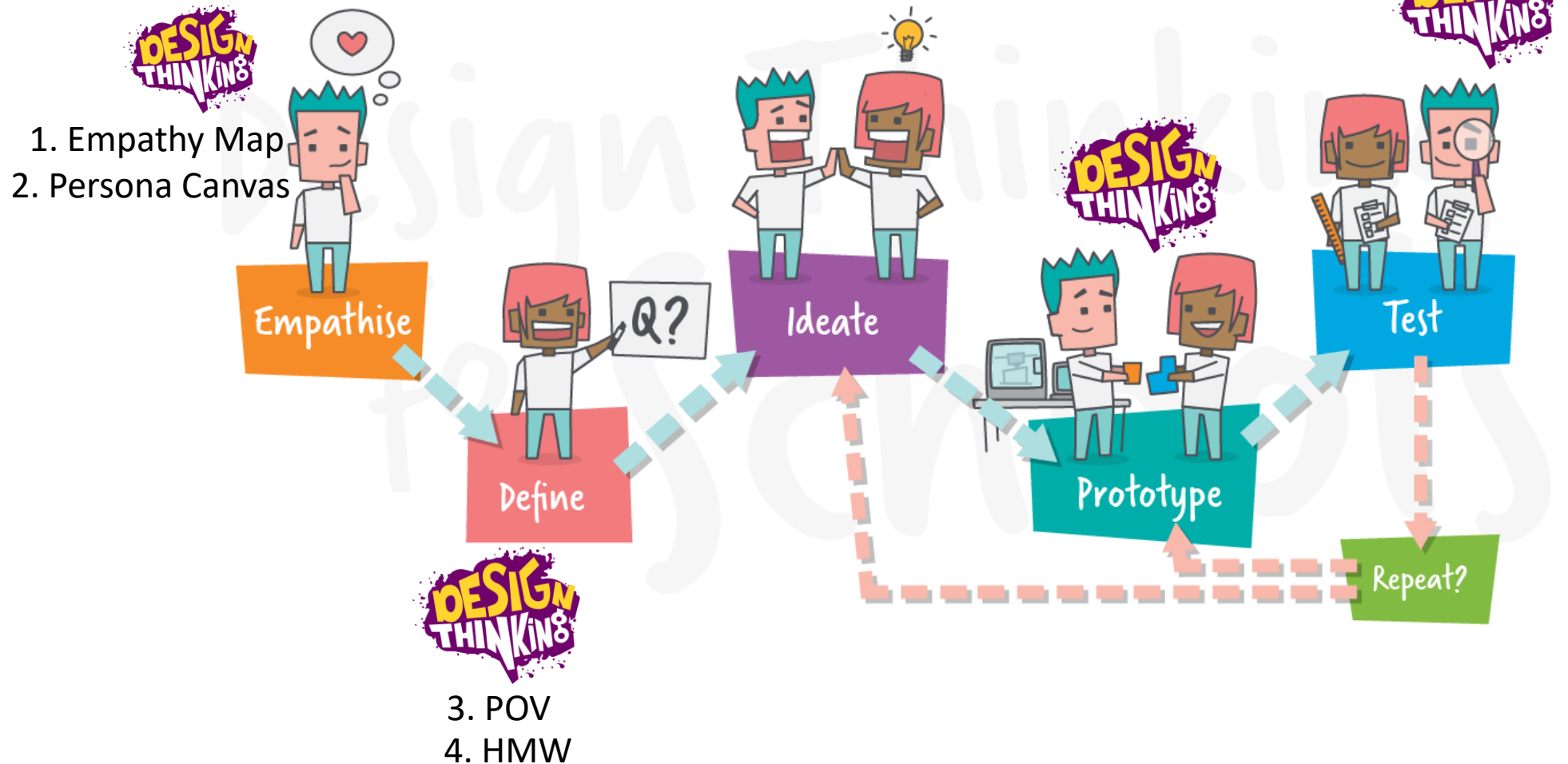


# Congratulations!

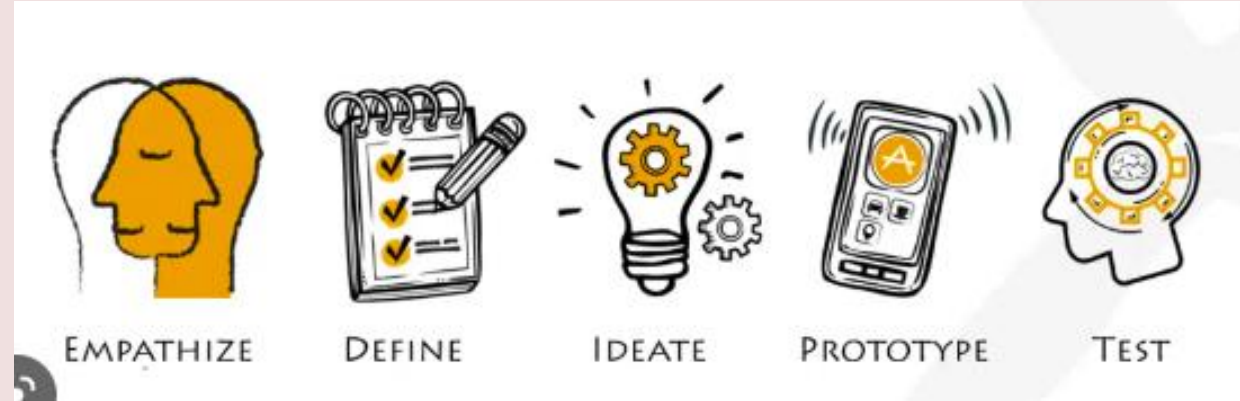
You have now completed...

- 1. Empathy Map
- 2. Persona Canvas

- 5. Rolestorming
- 6. What if





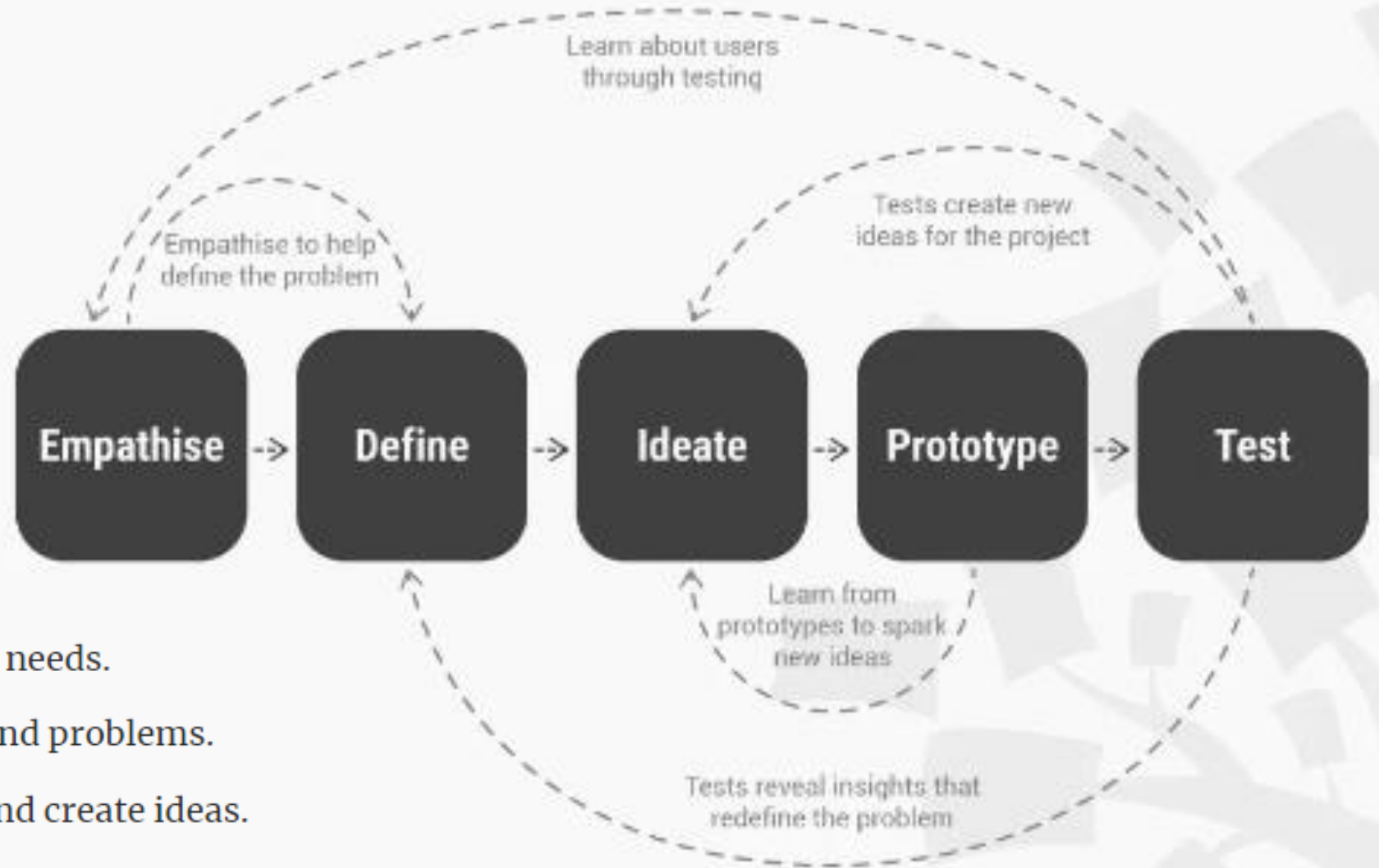


# Summary

15 minutes

# Summary

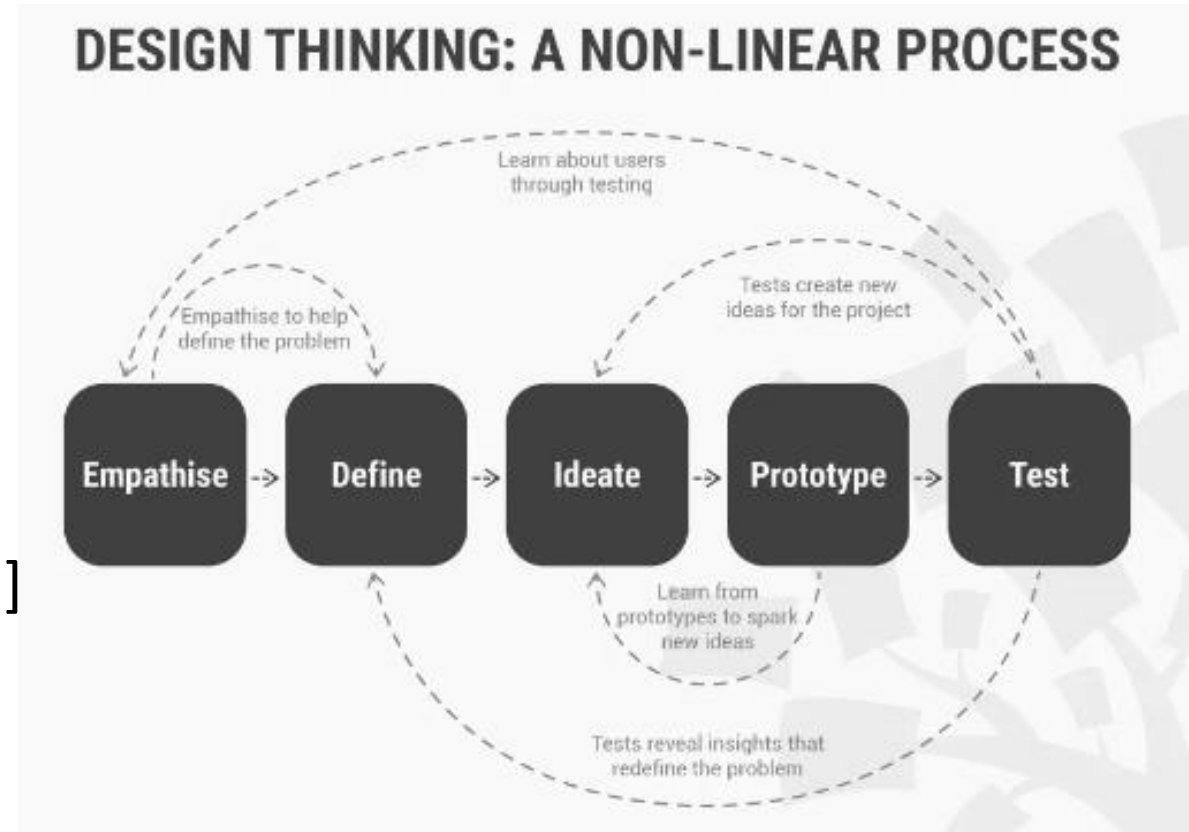
## DESIGN THINKING: A NON-LINEAR PROCESS



- **Empathize:** research your users' needs.
- **Define:** state your users' needs and problems.
- **Ideate:** challenge assumptions and create ideas.
- **Prototype:** start to create solutions.
- **Test:** try your solutions out.

# Summary

- What is DT?
  - 5 stage process , non-linear
  - Problem solving approach
  - User-centred perspective [**User is key!**]
- Goal
  - Create **innovative** solution **creatively**
- Application
  - Product / Service / Experience



*“Design thinking is a process for **solving problems by prioritizing the consumer's needs above all else**. It relies on **observing**, with **empathy**, how people **interact** with their environments, and employs an **iterative, hands-on approach** to creating **innovative solutions**.”*

*“Design thinking relies on the **natural** — and **coachable** — human ability to be **intuitive**, recognize patterns, and construct ideas that are **emotionally meaningful** as well as **functional**.”*

*David Kelly, founder of IDEO and d.School*

# Reflection 9

## What skills can DT nurture?

- Problem solving
- Confidence
- Team work
- Creativity
- Original thinking / novelty
- Empathy / awareness of people
- Curiosity
- Questioning



# Discussion 9 : Summary

1. Name all stages of DT.
2. Of all DT stages, which interests you the most? Why?
3. What is the 'key message' you gained from this workshop?
4. Do you think DT is useful?
5. How do you plan to use DT?

# Review objective outcome

1. Identify 5 stages of Design Thinking.



2. Generate ideas for each stage of Design Thinking.

3. Propose solutions for the given Design Thinking challenge.

# Learning point

- Design thinking can be applied in various domains. The process supports **creativity, problem solving, solution development**.
- It can be applied on **products, services** and **experiences**.
- Involving five phases—**Empathize, Define, Ideate, Prototype** and **Test**—it is most useful to tackle problems that are ill-defined or unknown.



THANK YOU!

