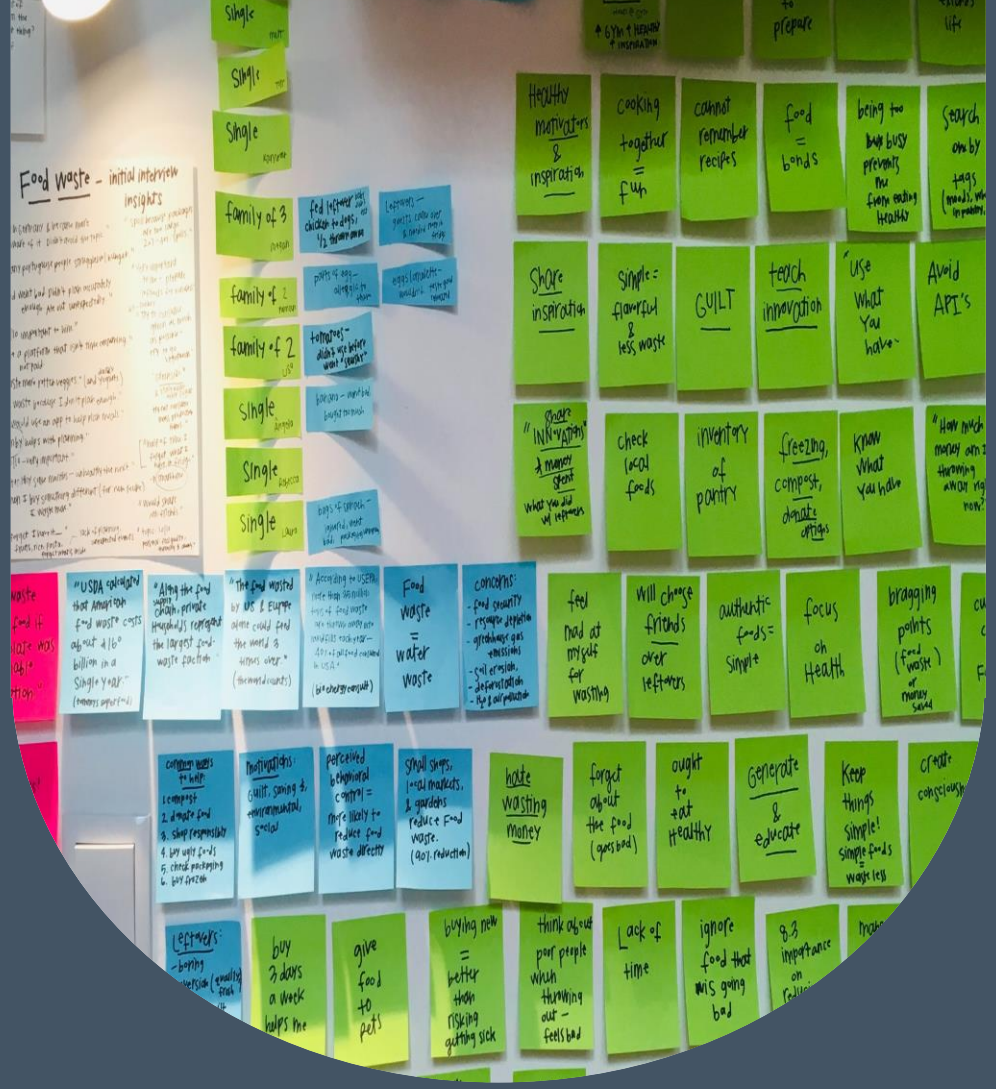
GROWTHhub
Entrepreneurship: Awareness, Intent & Action

Digital Information Systems Design Sprint



Dr John Organ

SETU
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South East Technological University

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INSPIRING FUTURES

The need...?

In today's rapidly changing world, there is a critical need for collaborative innovations that drive sustainable solutions to address pressing environmental, social, and economic challenges. As we face complex issues such as climate change, resource scarcity, and social inequality, there is an urgent demand for a structured approach to foster collaboration among diverse stakeholders and develop innovative strategies that promote long-term sustainability.

The need...?

Why does the Computer Industry need to be more Creative and Innovative in China?

TECHNOLOGY

Apple Faces New Challenge in China as Huawei Releases High-Speed Phone

Device creates buzz among Chinese fans after Beijing bans the use of iPhones at some government offices

By Yang Jie Follow *in Tokyo, Yoko Kubota* Follow *in Shenzhen, China, and Aaron Tilley* Follow *in San Francisco*

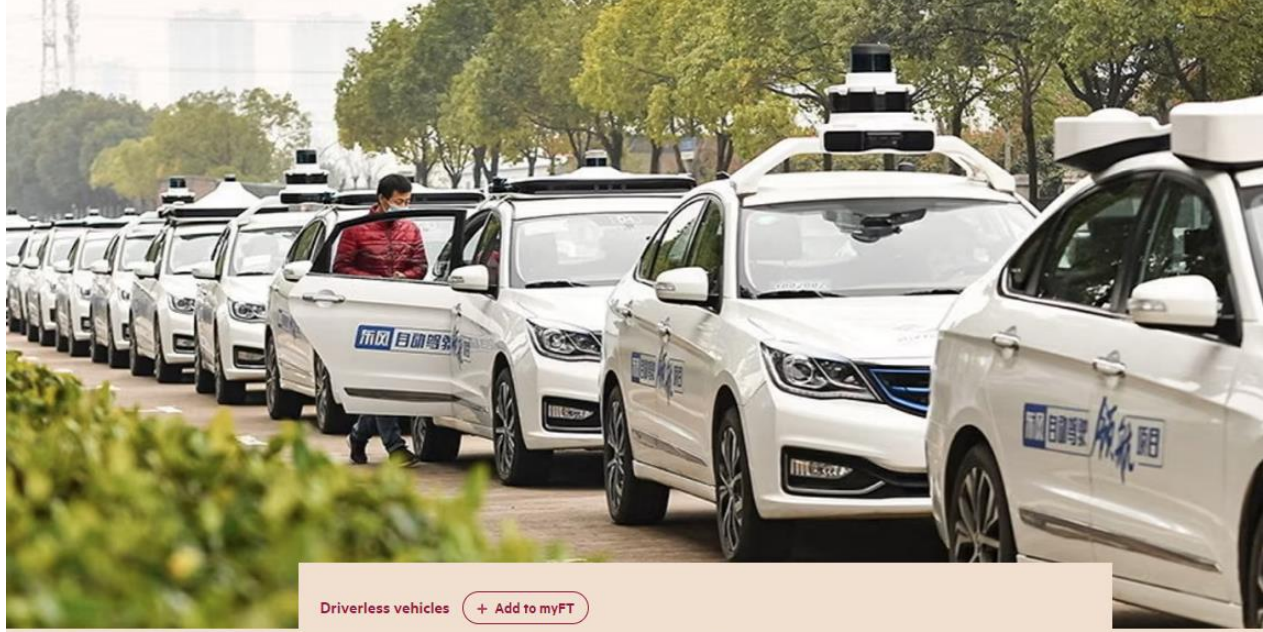
Updated Sept. 7, 2023 7:21 pm ET

Share Resize Listen (2 min)

Why Chinese automakers are poised to shake up the world

Over the past two years, the total number of passenger vehicle exports from China to the global market has increased by 211 percent.

Cheng Xie



Driverless vehicles + Add to myFT

China challenges the west for driverless car supremacy

Experts believe carmakers and tech companies are closing gap with US rivals despite Beijing's safety concerns

Self-driving robotaxis con
Yongsheng/VCG/Getty Im

Huge challenges and opportunities

China's race to become global AI superpower

China wants to be world leader in artificial intelligence (AI) by the end of the decade. But US trade sanctions affecting technology imports and a brain drain of the best engineers mean it won't be easy.

Flood of Used Batteries Could Supercharge China's Electric Car Market

The flood of used cells could be a key advantage for China, if it gets it right.

By Bloomberg News

'An Act of War': Inside America's Silicon Blockade Against China

The Biden administration thinks it can preserve America's technological primacy by cutting China off from advanced computer chips. Could the plan backfire?

- Mastering design thinking is essential for addressing complex challenges and creating innovative solutions.
- This workshop is designed to equip you with some creative problem-solving skills needed to navigate the evolving world of sustainability in education.

Ensuring that every child can go to school remains a challenge

Limited funding for infrastructure, materials and trained teachers

The quality of education can vary widely

Challenge conventional wisdom

Question established practices

To re-imagine your role?

Explore better solutions

Understand the needs of all stakeholders

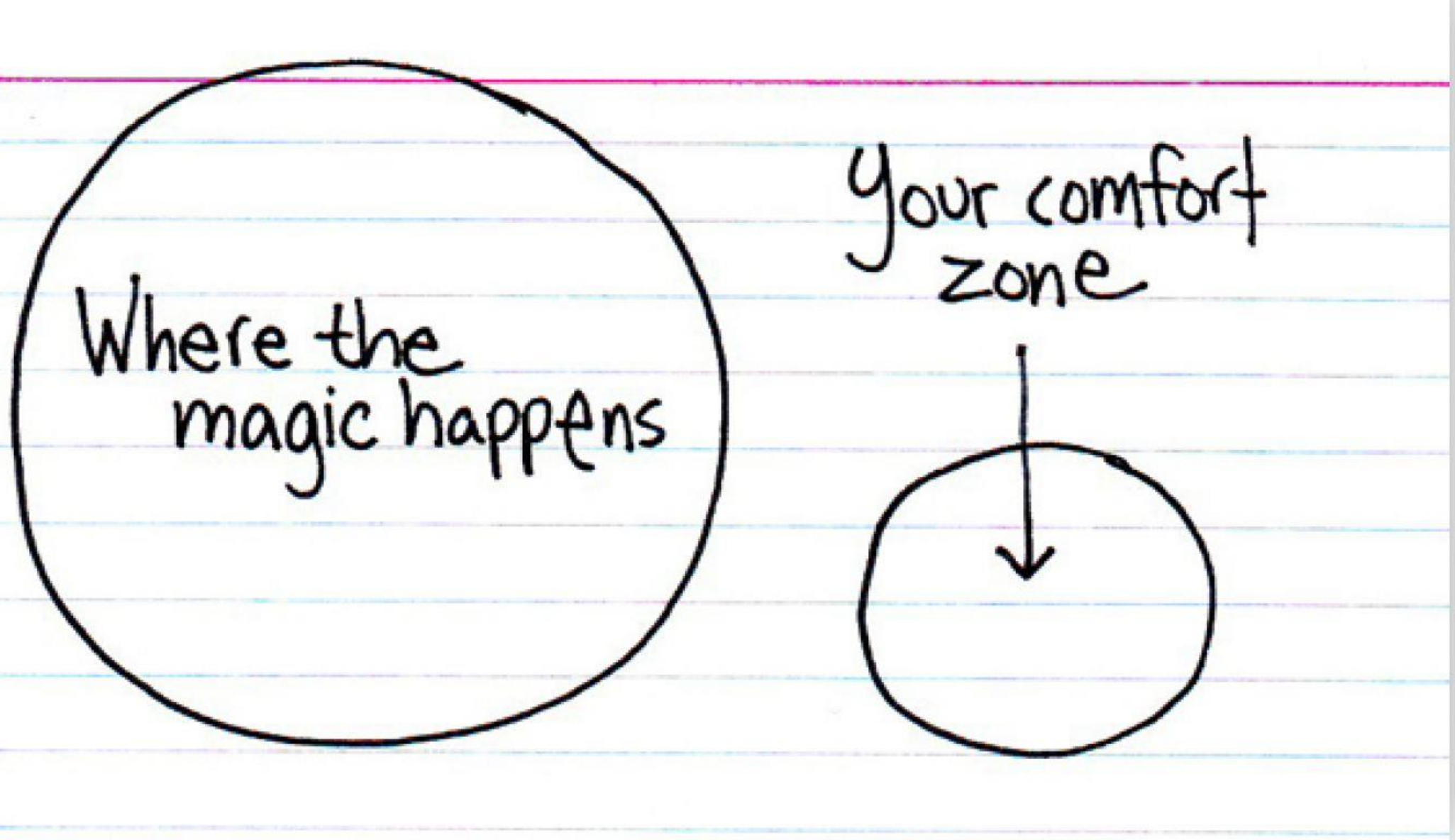
Explore the WHY

Iterate and refine

Take ownership

An invitation

Collaborate and share ideas



Remember, the most significant transformations often start with one person or one idea.

Problem

Solution

Messy...

Ice Breaker

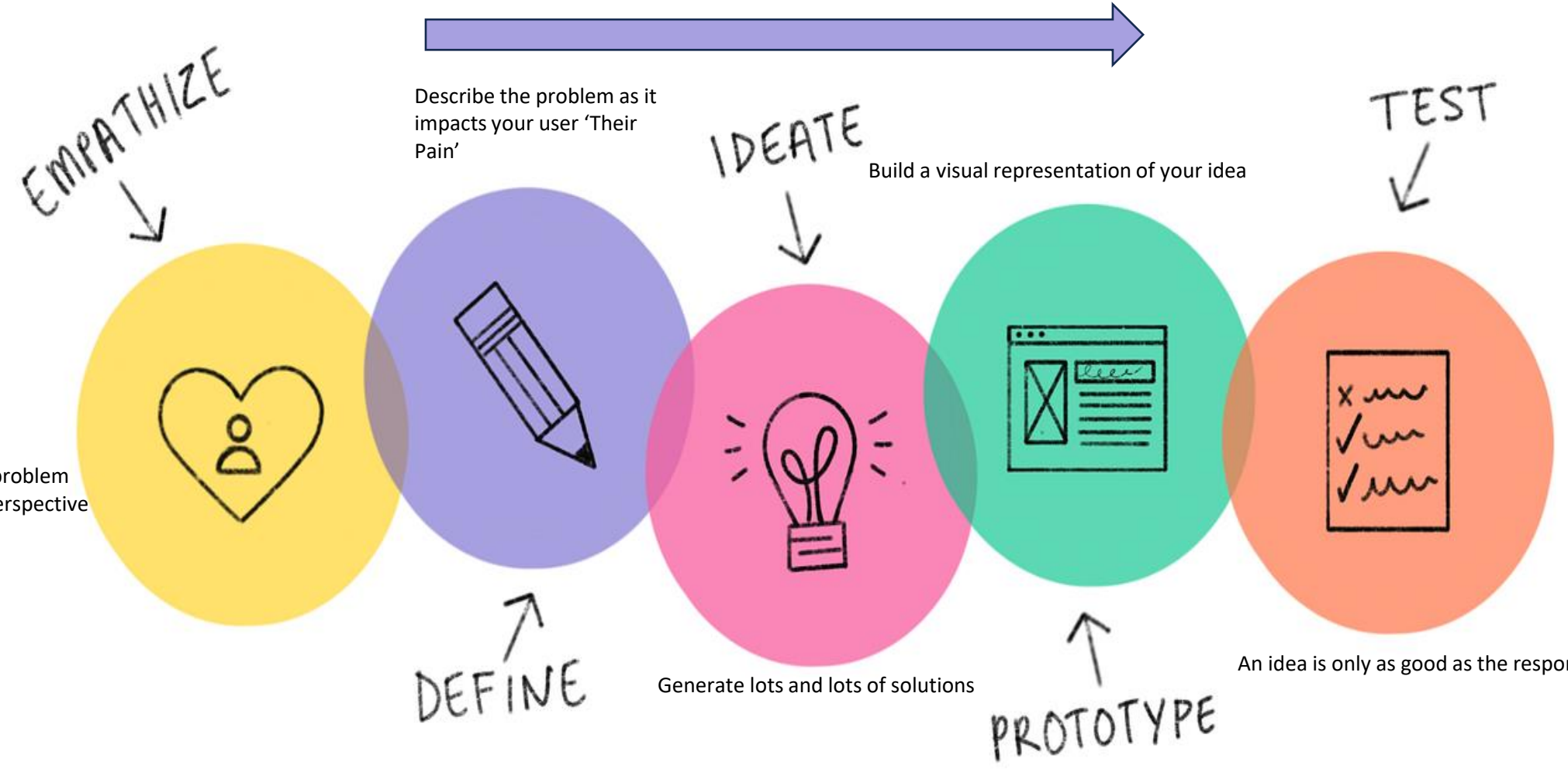
Combine pairs of objects to generate a new product or service

Round 1

Challenge

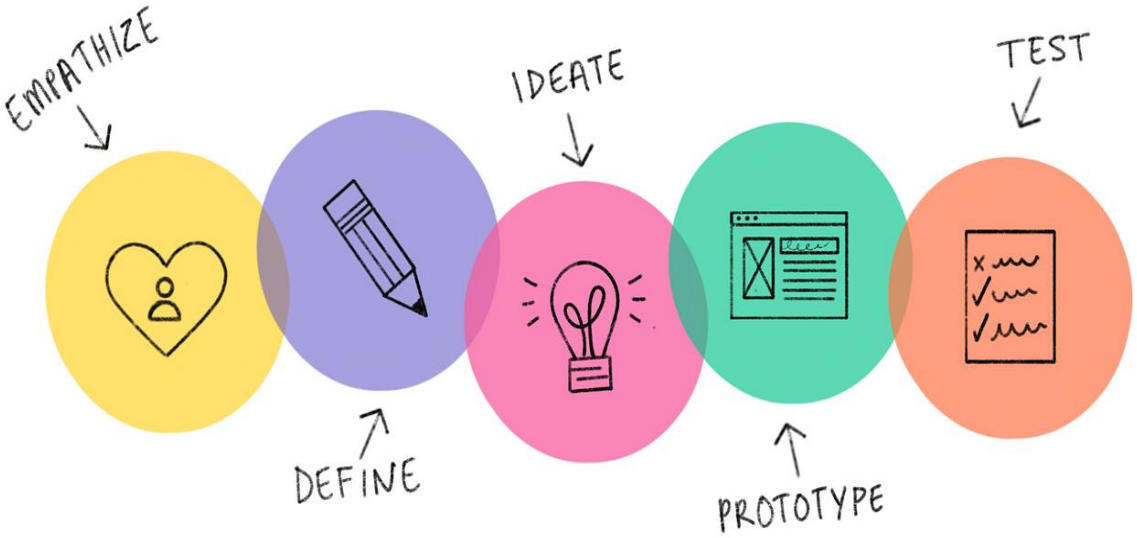
Identify a common problem or challenge in daily life that could be improved or solved using technology, and design an innovative solution to address it?

Design Thinking



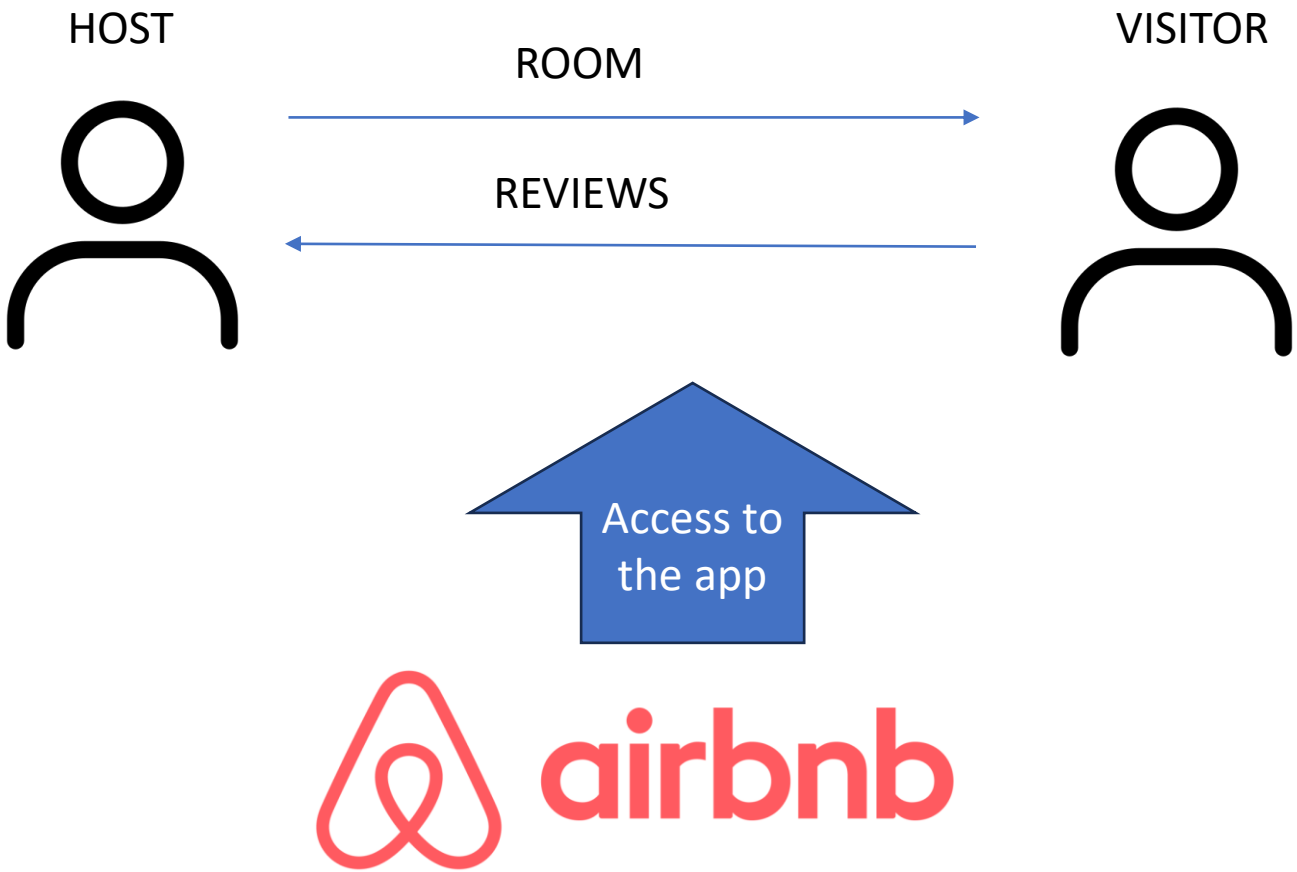
Design Thinking

- Design thinking is a human centred approach to innovation.
- **We look at the needs of people**
- **The possibilities of technology**
- **And the requirements for education success.**



- **AVOID THE TEMPTATION TO JUMP TO A SOLUTION TO A PROBLEM**
- **SPEND SOME TIME EXPLORING THE ROOT ISSUE THAT NEEDS TO BE ADDRESSED**
- **YOU CAN'T FIND A SOLUTION UNTIL TO DETERMINE THE PROBLEM**

Examples of the use of Design Thinking



Problem Identification: the cost and lack of personalisation in traditional lodging

Examples of the use of Design Thinking

Problem Identification: the need for a more intuitive and user-friendly smartphone experience

Examples of the use of Design Thinking

Deep understanding of its audience

Transition from DVD to streaming

Data-driven insights

NETFLIX

Culture of continuous improvement

Personalised viewing experience

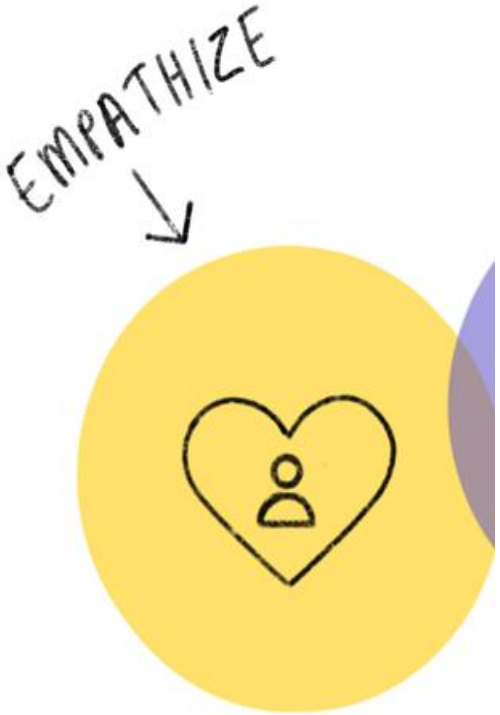
Examples of the use of Design Thinking

Problem Identification: The need to make a high-tech device that provided in-depth data on their customers brushing performance

Examples of the use of Design Thinking

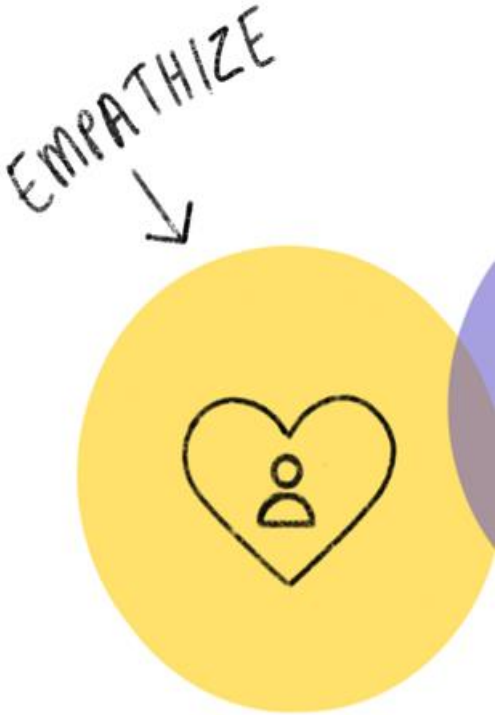
Problem Identification: How does Nike avoid going out of trend.

Design Thinking



FALL IN LOVE WITH THE PROBLEM, NOT THE SOLUTION.

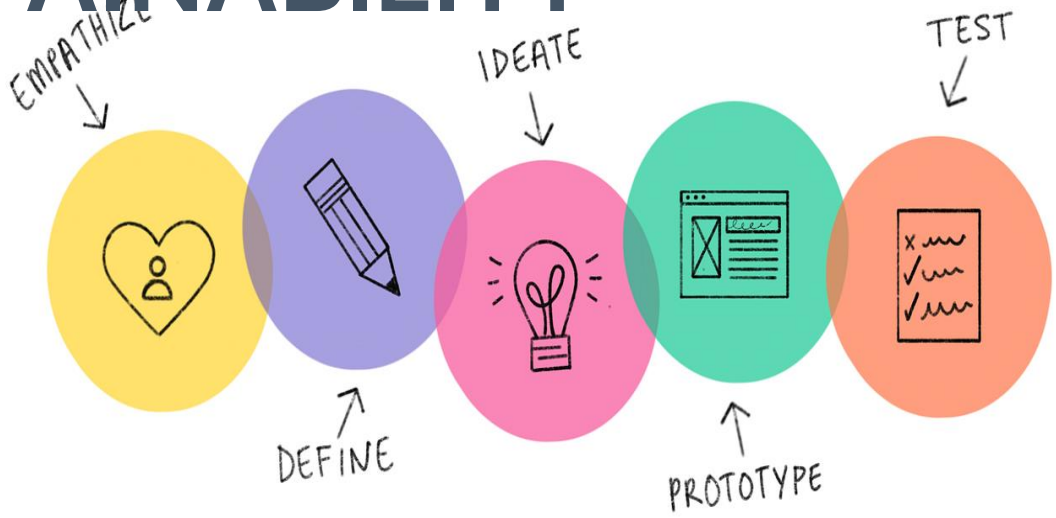
Design Thinking

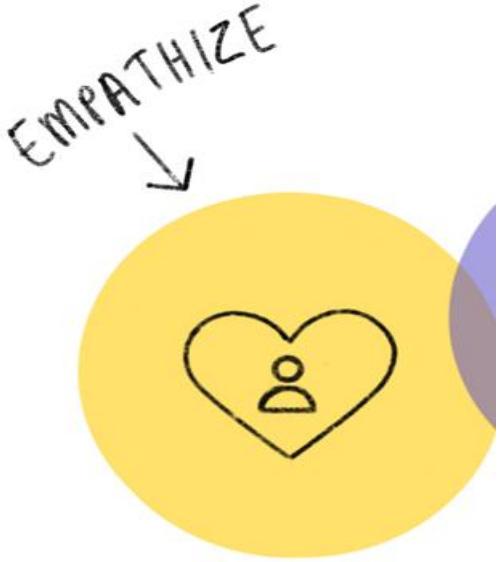


FALL IN LOVE WITH THE PROBLEM, NOT THE SOLUTION.

EMPATHY IN RESOLVING SOCIETAL CHALLENGES AND SUSTAINABILITY

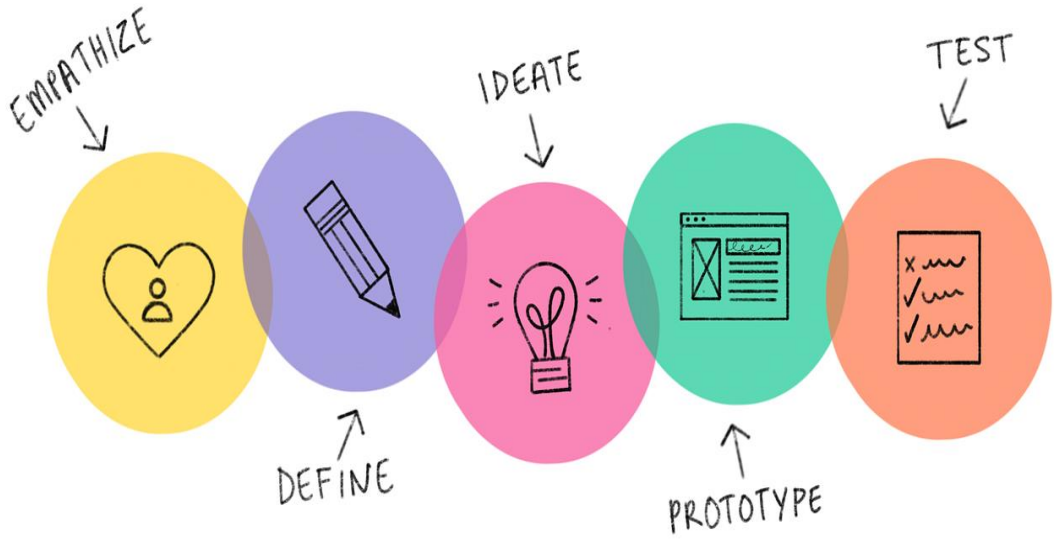
- Empathy in design thinking helps us deeply understand the needs, challenges, and aspirations of people affected by societal challenges and sustainability issues.
- This understanding is crucial for developing effective and meaningful solutions.

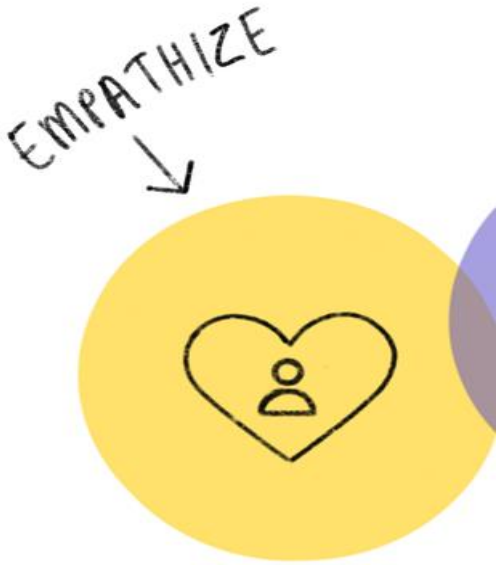




EMPATHY

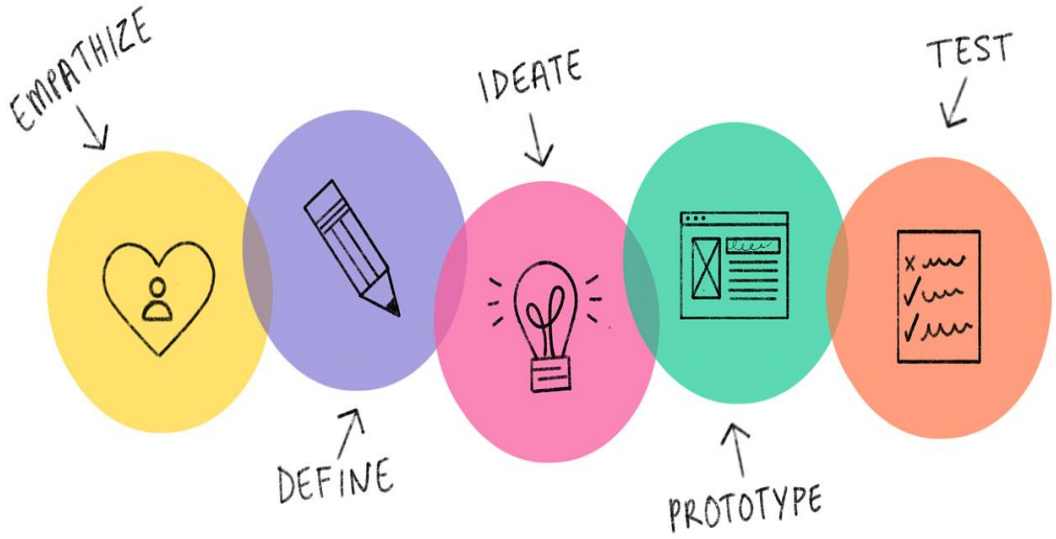
- By empathising with users, designers can create solutions that are more human-centered, ensuring that they address the root causes of problems and are more likely to be accepted and adopted by the community.

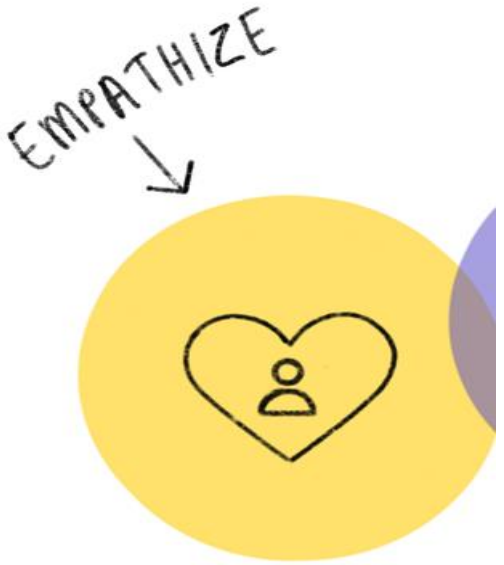




EMPATHY

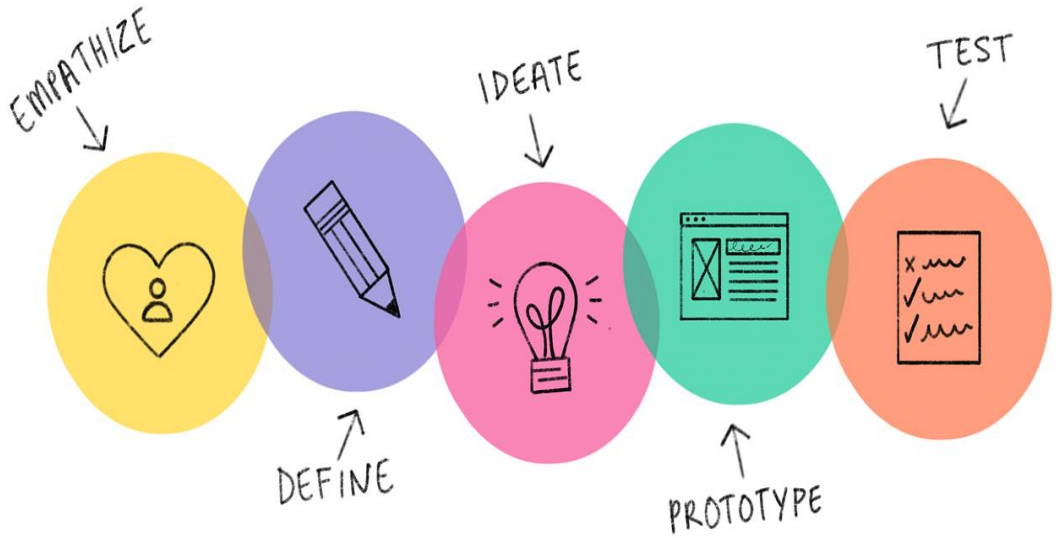
- Empathy can lead to more innovative solutions by uncovering insights and perspectives that may not be immediately apparent. This can help in designing solutions that are truly transformative and impactful.

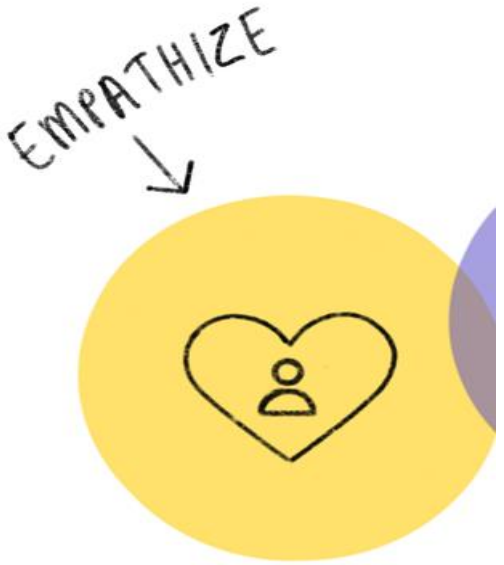




EMPATHY

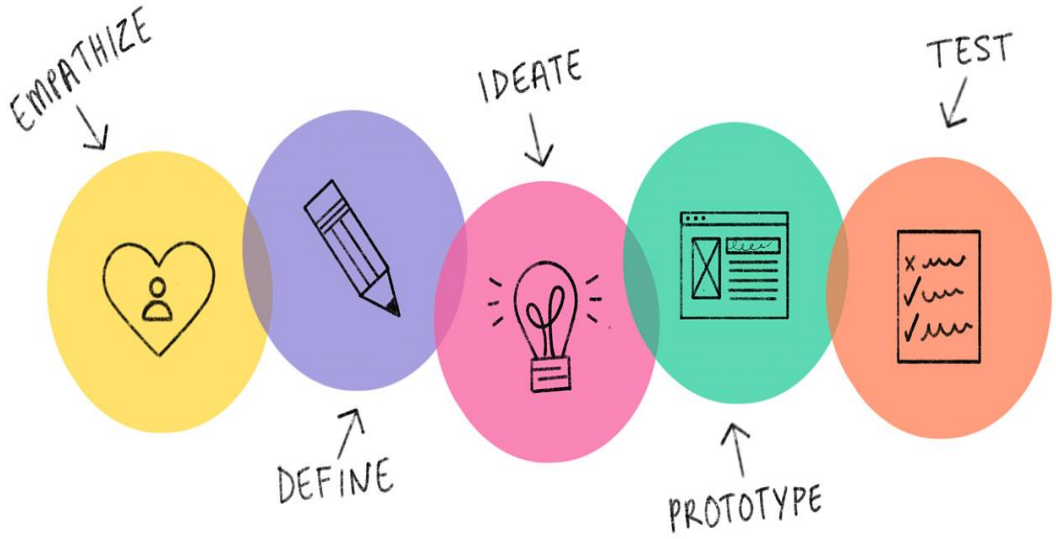
- Empathy helps in engaging with stakeholders more effectively, including local communities, policymakers, and other key players. This can lead to more collaborative and sustainable solutions that are supported by all stakeholders.

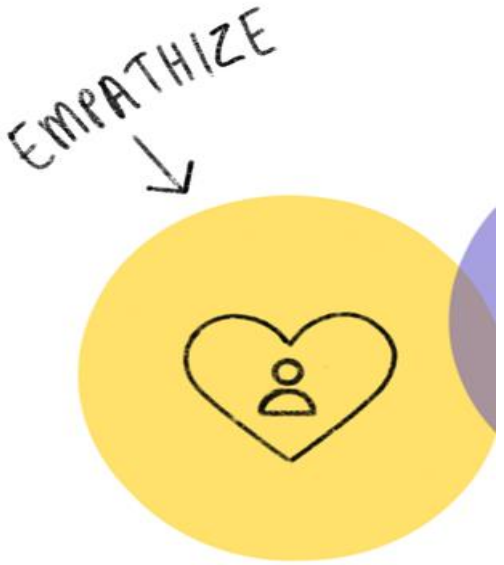




EMPATHY

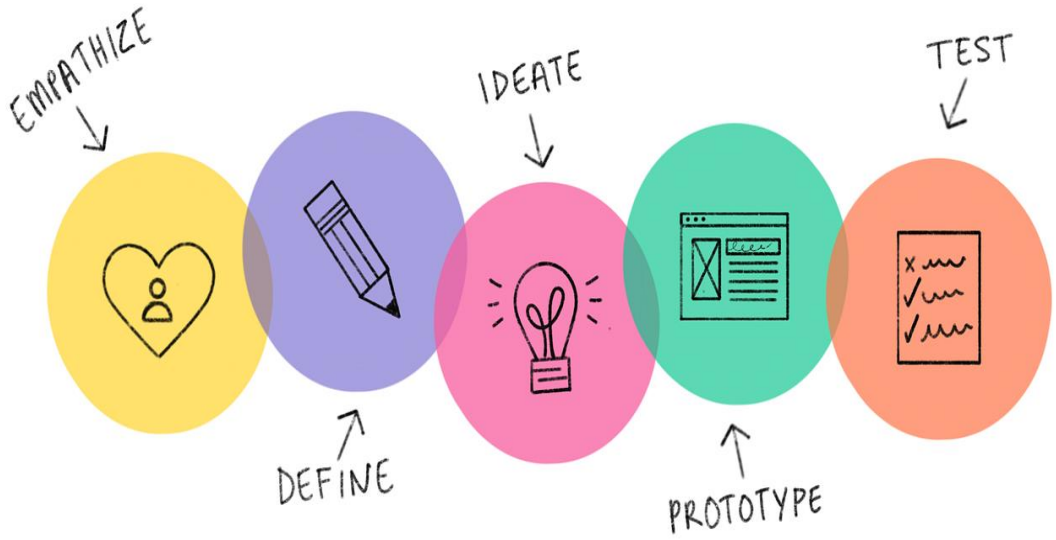
- Design thinking empathy ensures that solutions are not just quick fixes but are sustainable in the long run. By understanding the needs and motivations of users, designers can create solutions that have a lasting impact on society and the environment.

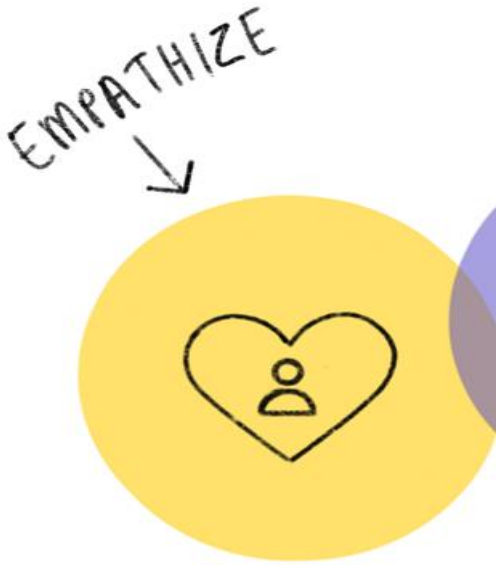




EMPATHY IN COMPUTER INDUSTRY

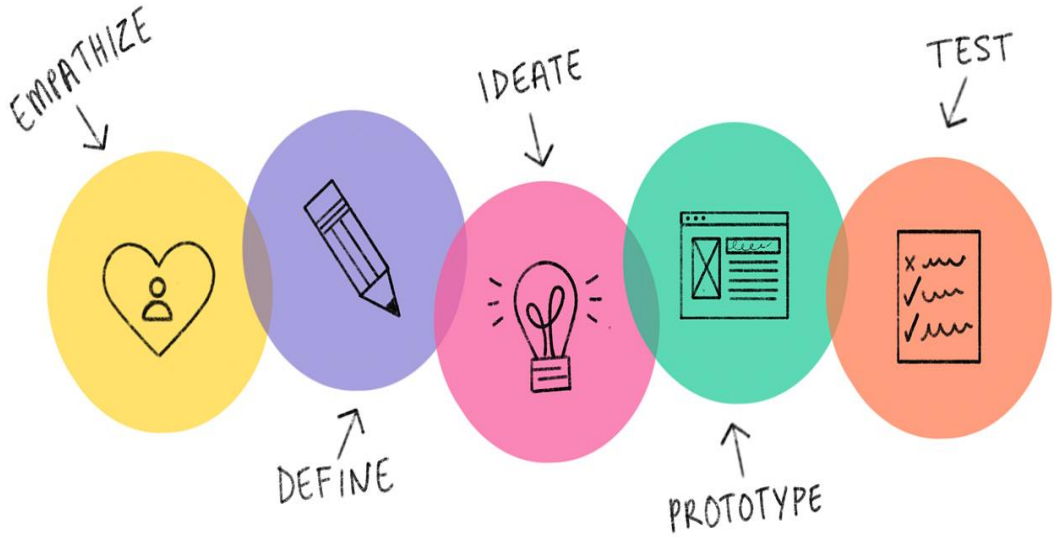
- Crucial role in the computer industry
- Used a lot in user experience design, customer support and team collaboration

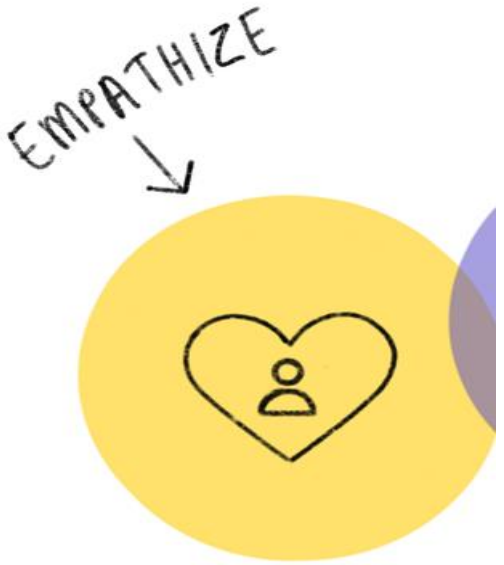


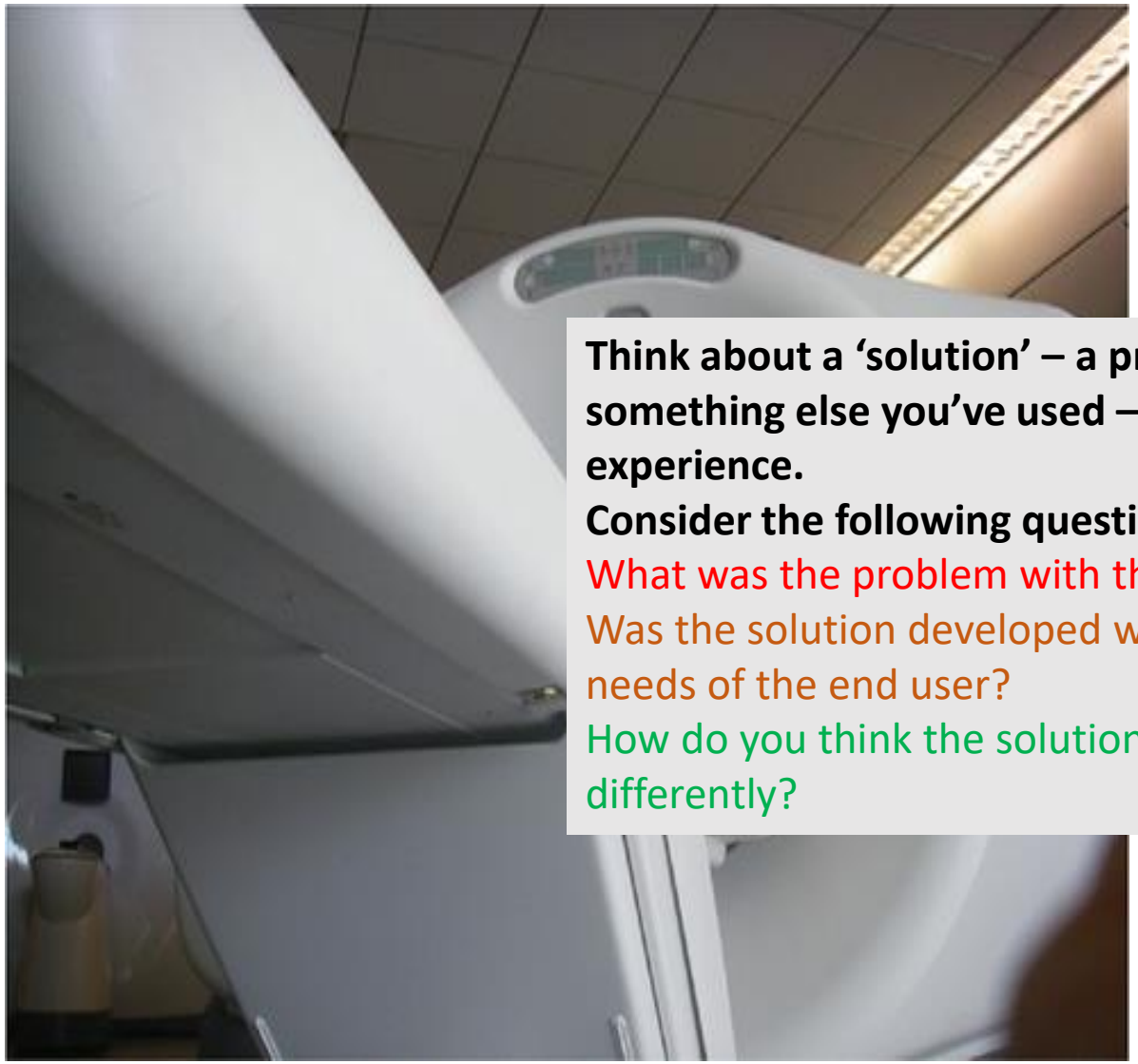


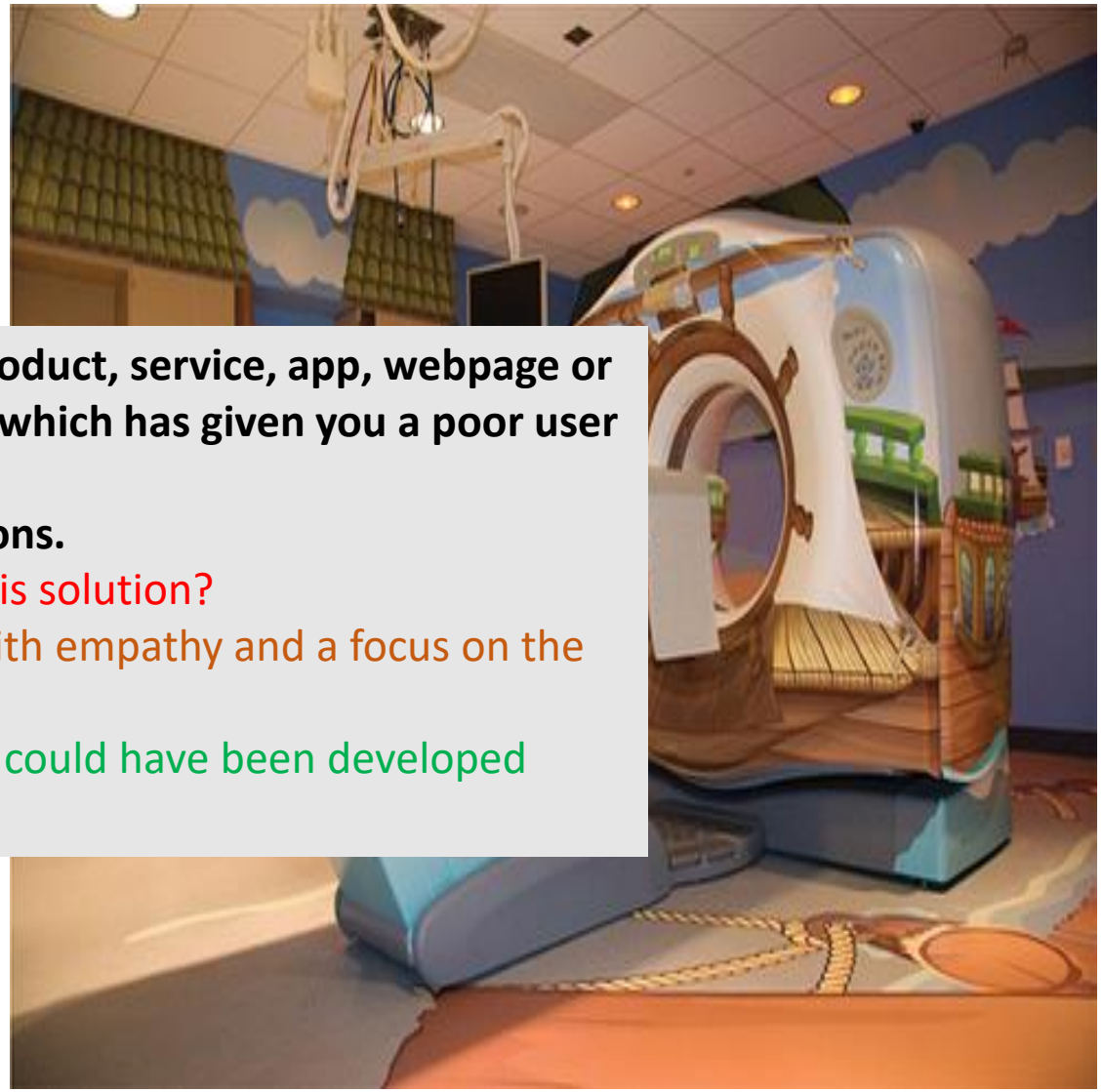
EMPATHY IN COMPUTER INDUSTRY

- **User-Centered Design**: Empathy helps designers understand the needs, preferences, and limitations of users. This understanding leads to the creation of products and services that are more intuitive, accessible, and user-friendly.
- **Innovation**: Empathy drives innovation by encouraging professionals to think creatively about how technology can solve real-world problems and improve people's lives.









Think about a ‘solution’ – a product, service, app, webpage or something else you’ve used – which has given you a poor user experience.

Consider the following questions.

What was the problem with this solution?

Was the solution developed with empathy and a focus on the needs of the end user?

How do you think the solution could have been developed differently?

The medical team needs to take scans of the child for medical diagnosis

Scanner rooms were transformed into children’s adventure games.

Problem

Problem Definition

Design Brief

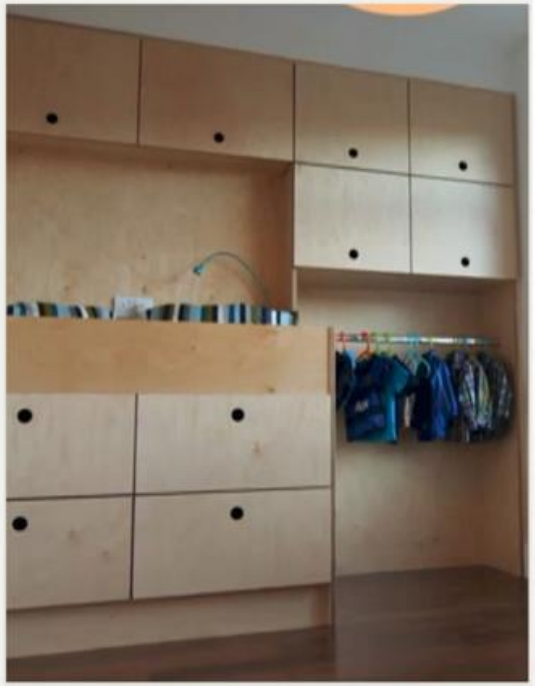
Solution

Understand features of the problem

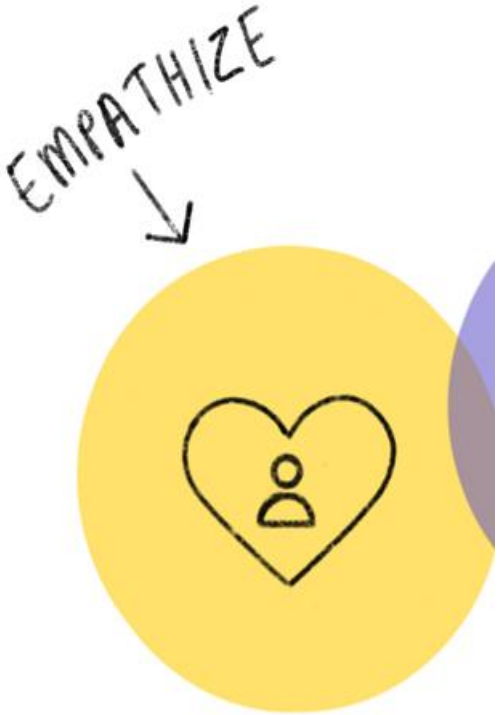
- Maturing child – desire to be independent
- Limited in height and reach due to wheel chair
- Family budget is low
- Limited floor space

To prioritise features of the solution

- Allow child to be able to choose own clothes and dress himself
- Measure height for rails and open wardrobe (no doors)
- Make bedroom of simple inexpensive materials
- Stack room vertically



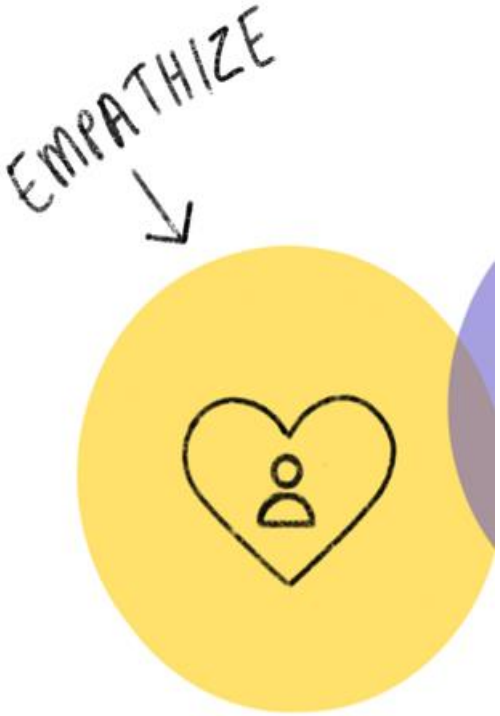
Design Thinking



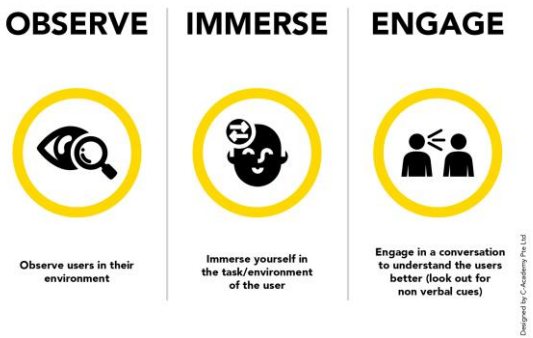
Introduction to the challenge.
Conduct interviews, do some research, gather data.

Design Thinking

What is your user's experience?



- Talk to the user, non-user. Use your network, strangers on the street, social network



- Observe people interacting with your product, experience or service or their experience of the challenge

- Secondary Research

- Bodystorming

Physically put yourself in the shoes of the user. Note the issues and experiences

Design Thinking

Make data visible – one idea per post-it.

In an era of fake news, it's important to evaluate the quality of your sources of information

Empathy
Walk in their Shoes

setu.ie
INSPIRING FUTURES

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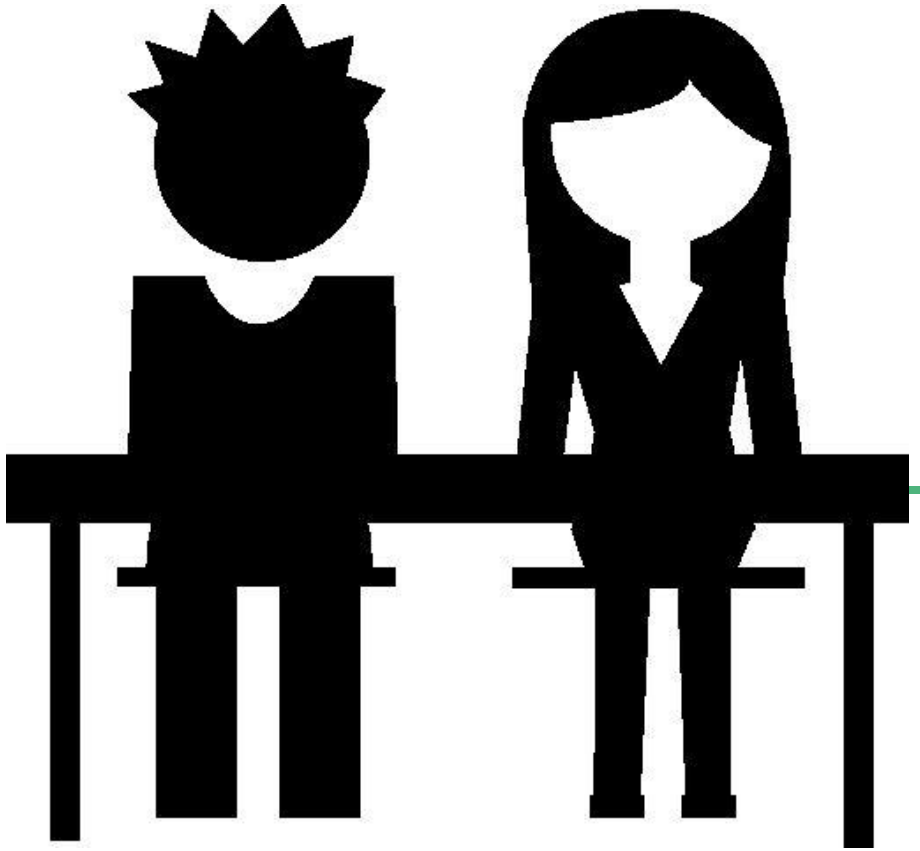
South East Technological University

Help you gain empathy for your peers' experiences, understandings, perspectives on societal challenges and sustainability

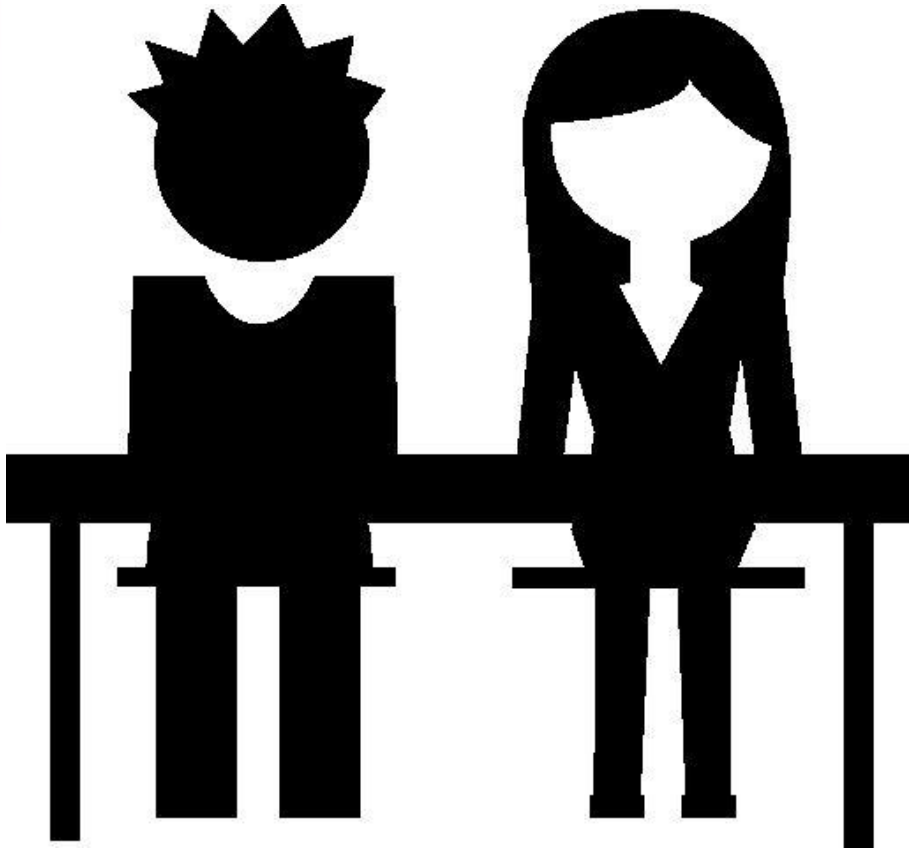
By actively listening to each other's stories and reflecting on their emotions and perspectives, you can develop a deeper understanding of the human aspects of societal challenges and sustainability.

Empathise the importance of empathy in fostering understanding and collaboration



- Students should put themselves into small groups (try and ensure a diversity in terms of background, interest and experience)
- Each group will take turns being the **“LISTENER”** and the **“SPEAKER”**

“SPEAKER”

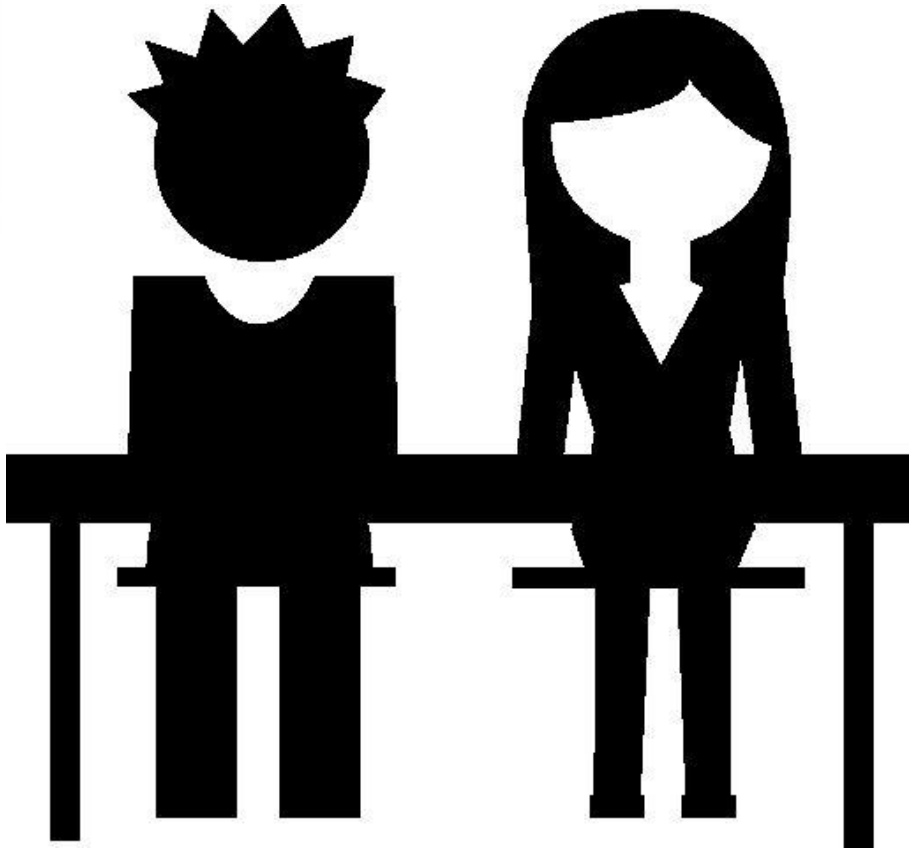


- The Speaker group will share their experiences, challenges or their successes related to societal issues or sustainability

Share your experience

Challenges of empowering students to address complex societal and sustainability challenges?

“LISTENER”



- The Listener group will actively listen to your peers **without interrupting** or offering advice.
  - Pay attention to verbal and non-verbal cues and empathise with your peer’s emotions and perspectives.
  - Summarise what the listener is saying using phrases like **“It sounds like you’re feeling” or “I understand that you’re facing challenges with…”**
  - SWITCH ROLES –Listener group becoming the speaker and vice versa

USING Post-it

- Write down key takeaways or insights from the exercise.
- One insight per post-it

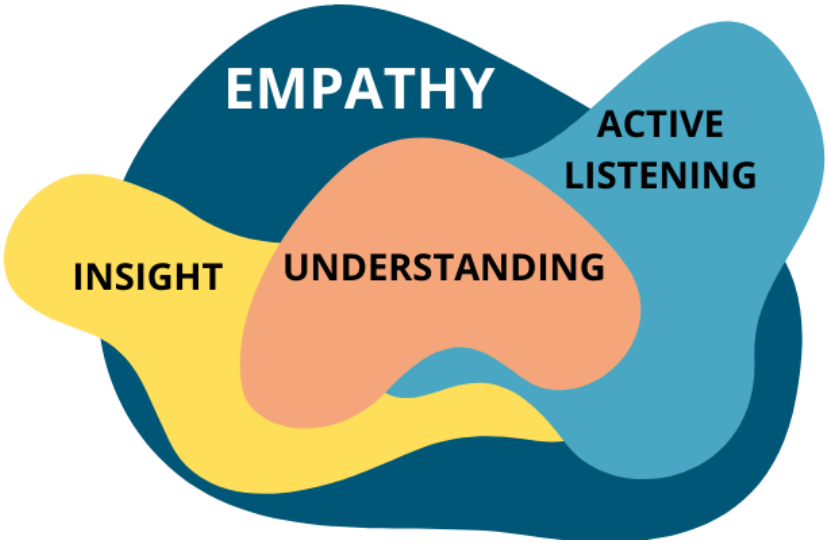
Reflect on

- Your experience as both a speaker and listener
- What emotions did you feel
- What insights did you gain about your peers' experience
- Any common themes, or challenges shared by teams

WHAT WAS THE POINT

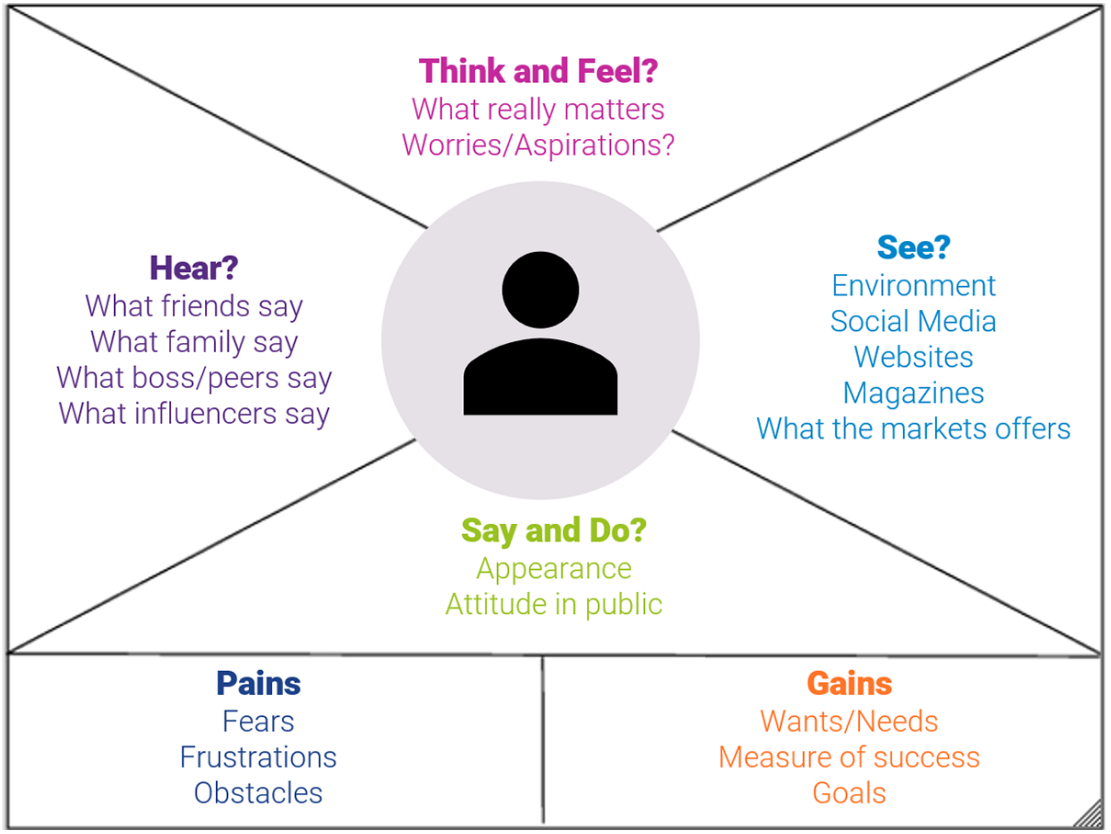
- Walk in their shoes helps you develop empathy for your peer's experience within the industry.
- Foster understanding of diverse perspectives and challenges in the industry.
- Explore ways in which empathy can enhance collaboration, communication and problem-solving in the computer industry.
- How understanding others' perspectives can lead to better outcomes in team projects as well as better solutions that people will use.

EMPATHY



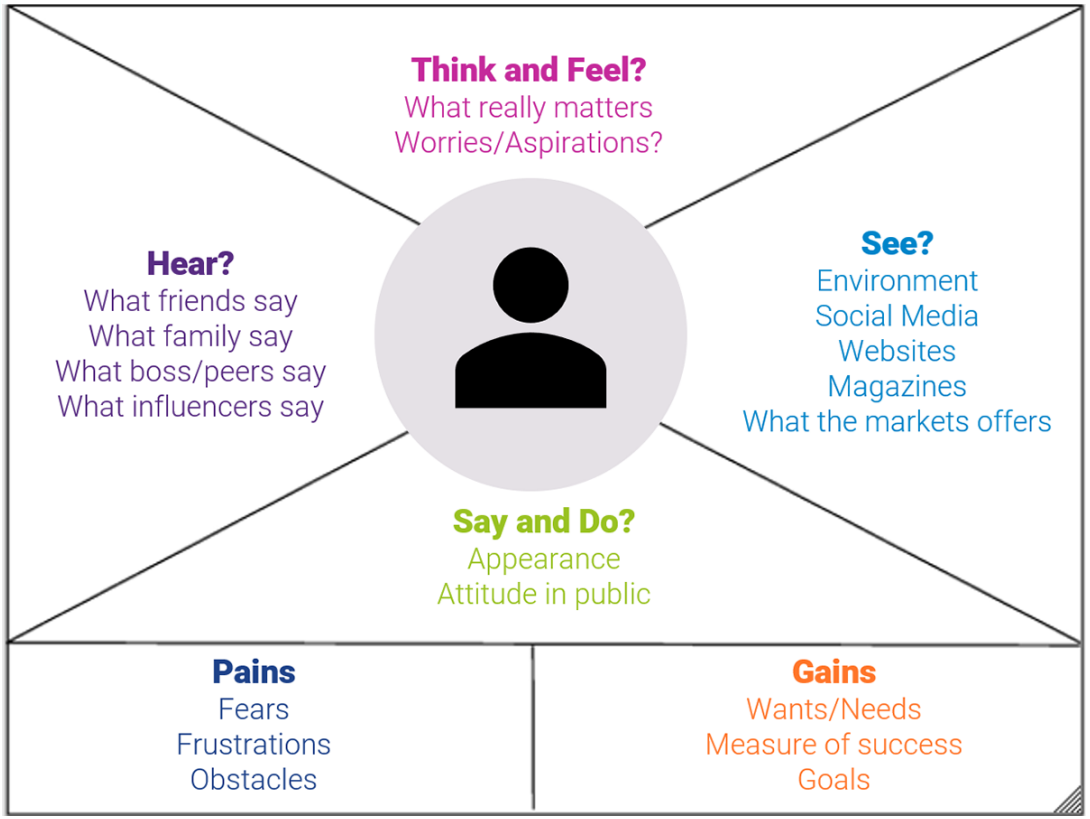
- You need to have empathy for and understand the needs of the end users who will use your solutions.
- You need to understand how sponsors (investors etc) will fund and derive benefit from them.
- Lots of companies with cool technology looking for a problem to solve

EMPATHY



- Think less about the cool technology and much more about people's experience of using it.
- No substitute for witnessing and observing people.
- It allows you to identify an unmet need or desire that you didn't know existed.

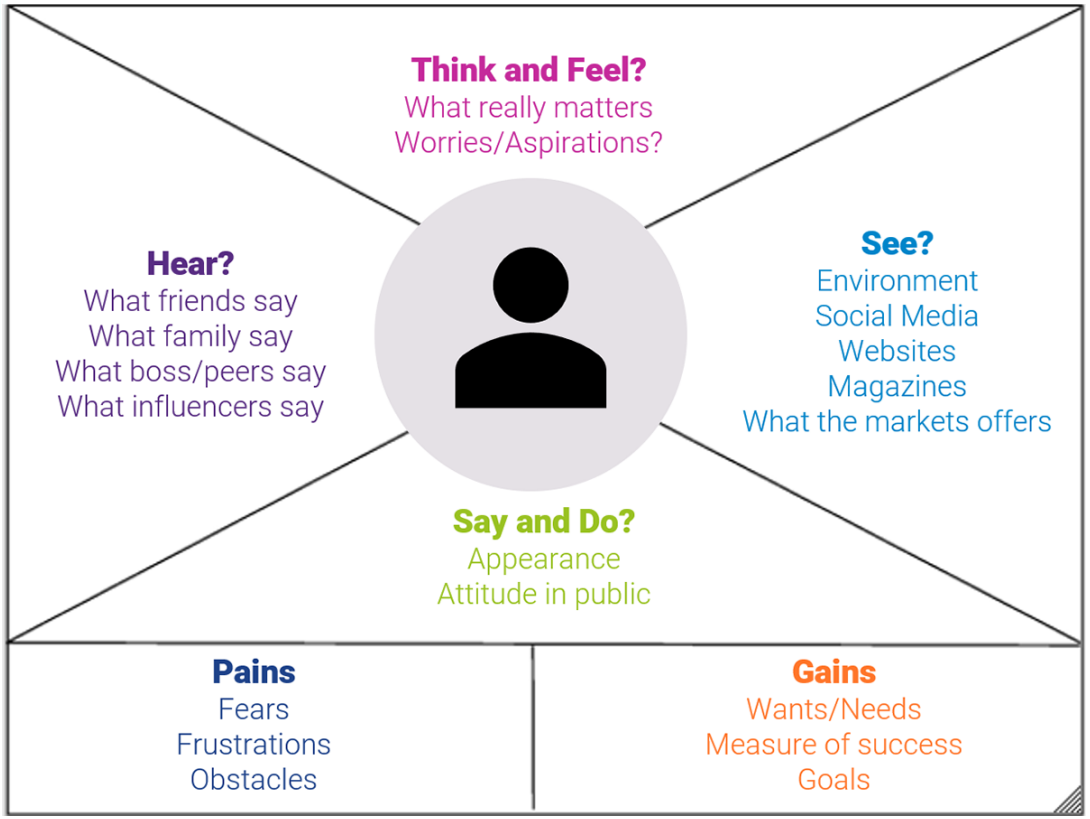
Empathy Mapping



Empathy mapping helps in understanding the needs, desires, motivations, and challenges of users or customers. By creating a visual representation of their thoughts and feelings, it becomes easier to empathize with them and design products or services that cater to their requirements effectively.

Collaboratively creating empathy maps encourages team members to step into the shoes of the users and understand their experiences from different angles. This fosters empathy within the team, leading to better collaboration and communication throughout the design and development process.

Empathy Mapping

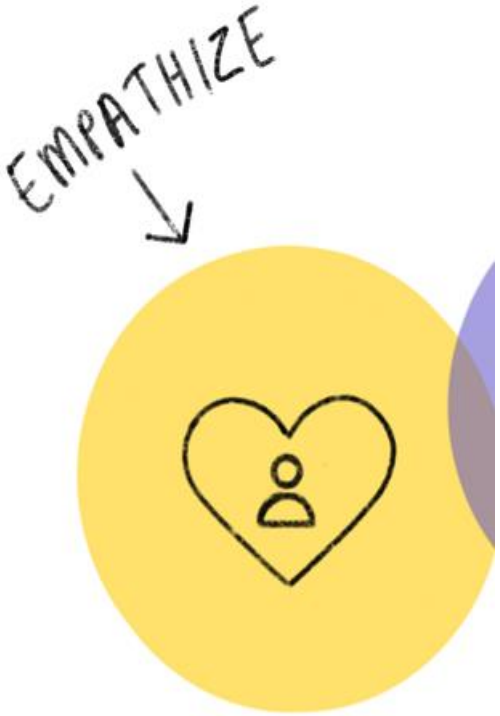


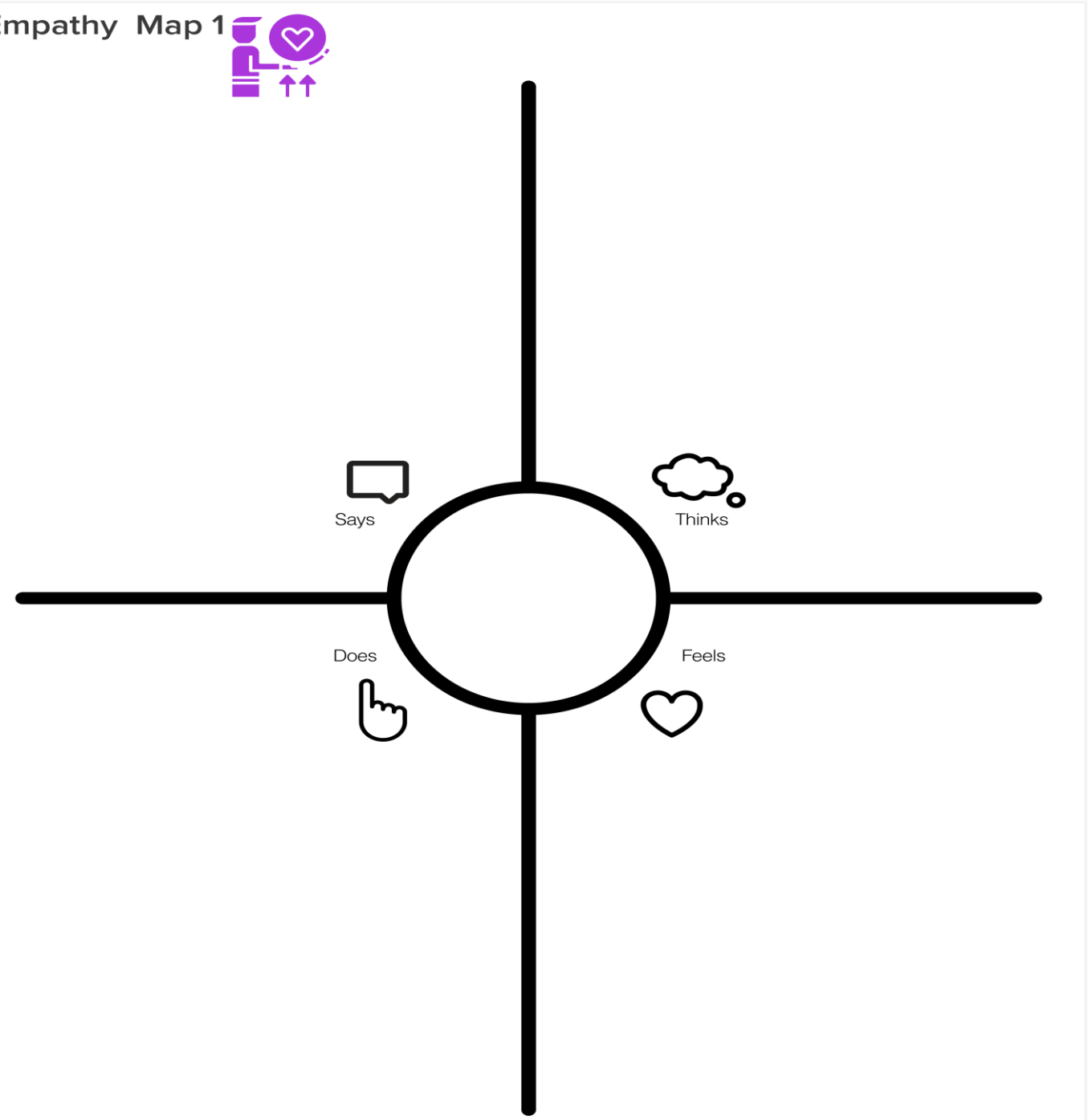
- Identify the stakeholder group relevant to the challenge or problem you are focused on e.g. local community, workers, policy makers etc,

Write down observations, insights and or assumptions about your target stakeholder group in each section of the empathy map.

After completing the empathy map, invite participants to share their observations and insights with the group.

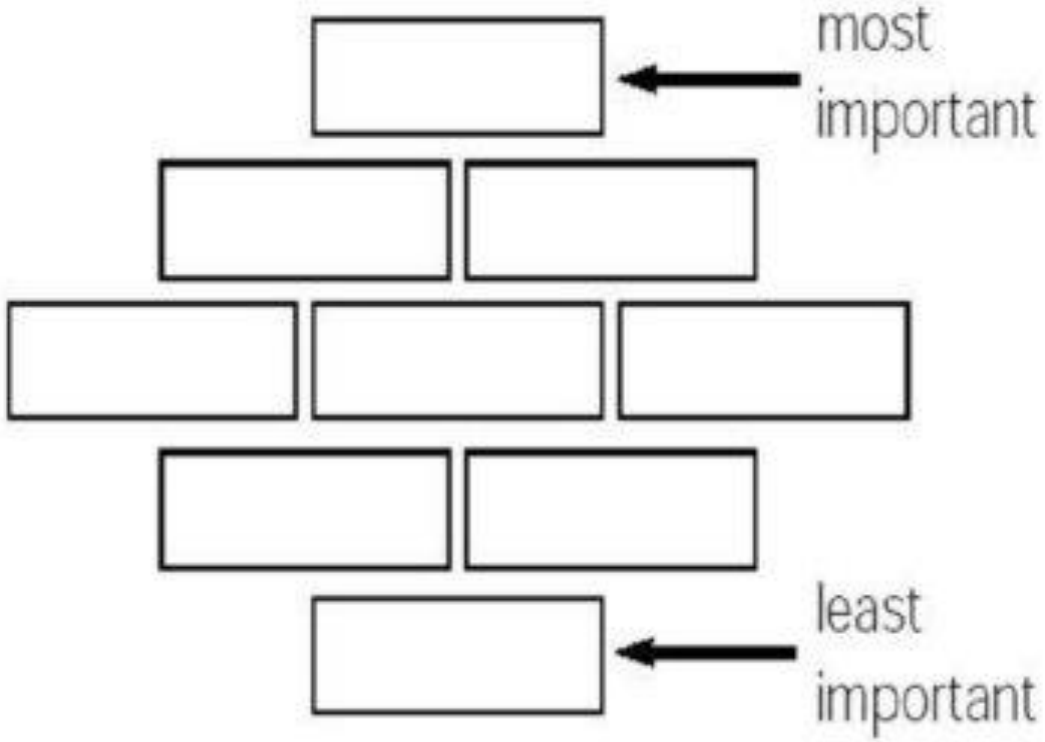
Design Thinking





Empathy Discussion

- Explore your top 3 themes of quality education
- Ask yourselves **"What is your experience of this theme in your own working context?"**



Start researching your challenge

DESIGN THINKING - RESEARCH - DR. JOHN ORGAN

RESEARCH:

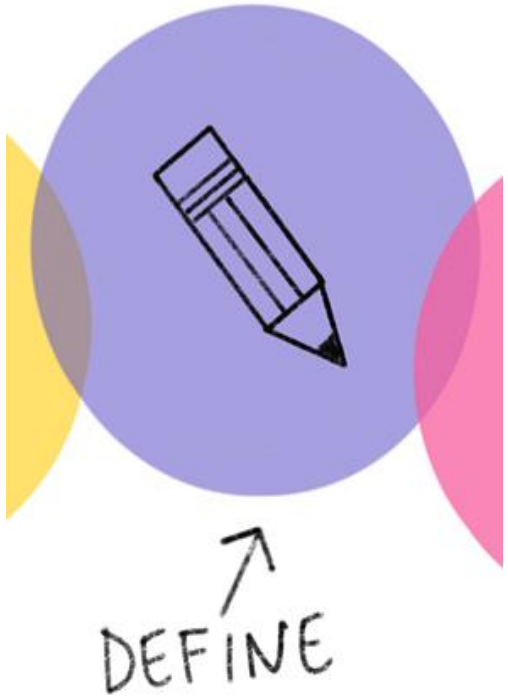
RESEARCH:

Uncover as much as Possible

CURRENT SITUTATION:

Assumptions:

Design Thinking



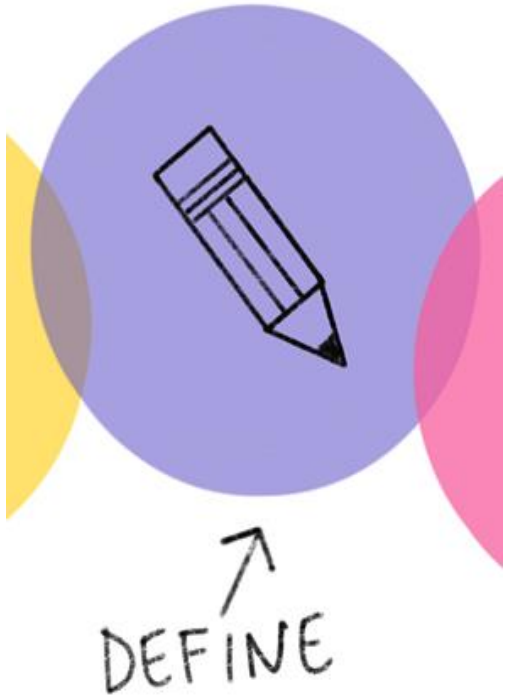
Organise empathy info

Look for patterns

Identify user pains

Define the *problem* you will solve

Design Thinking



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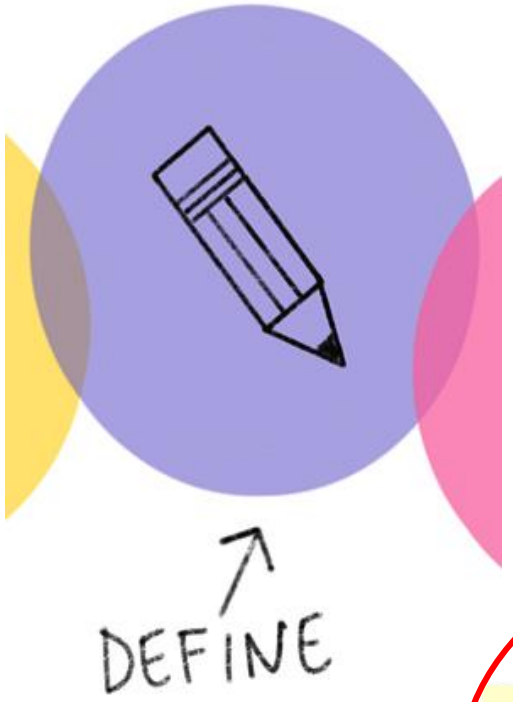
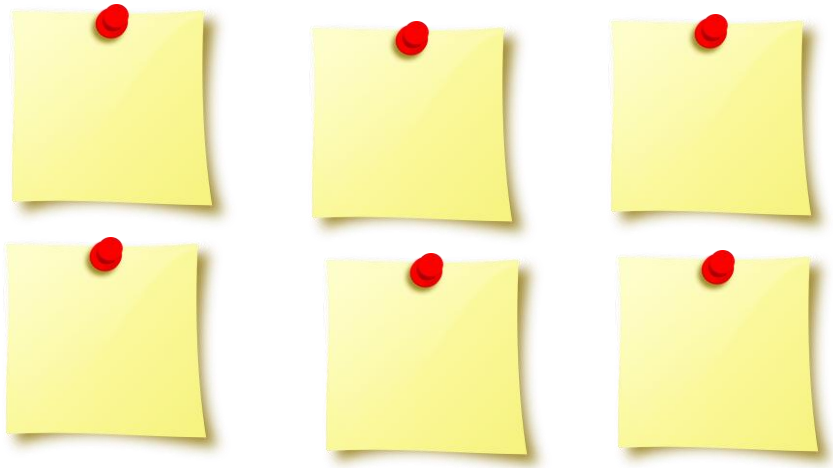
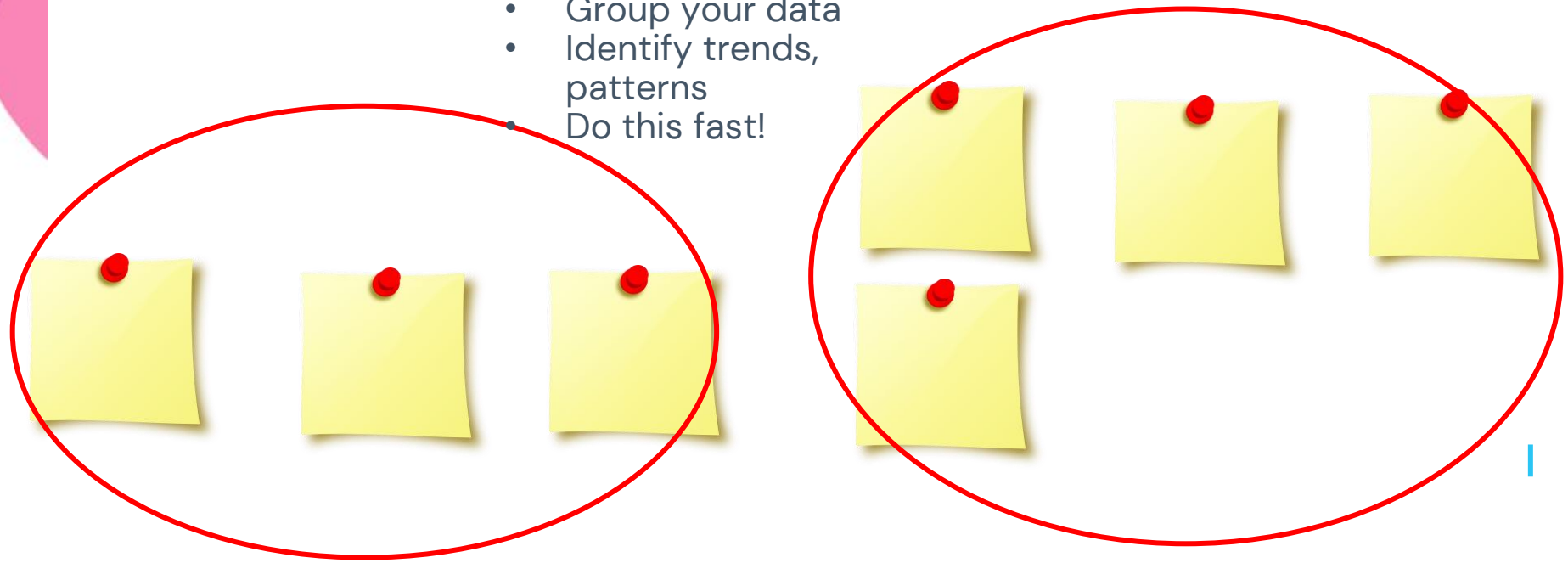


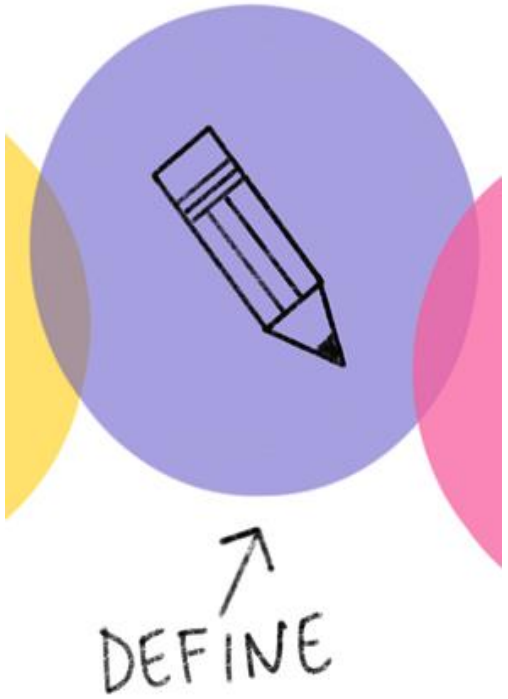


- One piece of information per post-note
- Populate your board with all the information you gathered from empathy.

- Group your data
- Identify trends, patterns
- Do this fast!



Design Thinking



- Make Data Visible
- Organise data into themes to identify interesting patterns, trends, insights
- Choose one insight to focus on
- Develop a problem statement

DEFINE THE PROBLEM:

THE PROBLEM STATEMENT CANVAS

CONTEXT: When / where does the problem occur?	**CUSTOMERS:** Who has the problem most often / severely? (*This is the customer group you will focus on*)	**CAUSE OF THE PROBLEM:** What are the root causes of the problem?
PROBLEM IMPACT: Practical – How does it impact *what* they do? Emotional – How does it make the customer feel? Quantifiable – How does it impact them in terms of units (e.g. *time, cost, distance, life-span etc*.)	**ALTERNATIVES:** What do these people do now to try to solve the problem?	**ALTERNATIVE SHORTCOMINGS:** What are the disadvantages of current alternatives?

https://www.acceleratedfw.org/web/toolkit/problem-statement-canvas

THE PROBLEM STATEMENT CANVAS

The problem we are tackling is: _____

CONTEXT: When / where?	**CUSTOMERS:** Who has the problem most often / severely?	**CAUSE OF THE PROBLEM:** What are the root causes of the problem?
PROBLEM IMPACT: Practical: Emotional: Quantifiable:	**ALTERNATIVES:** What do these people do now to try to solve the problem?	**ALTERNATIVE SHORTCOMINGS:** What are the disadvantages of current alternatives?

https://www.acceleratedfw.org/web/toolkit/problem-statement-canvas

Problem Statement

- Who is experiencing the problem?
- What is the problem they experience?
- When do they experience the problem?
- Why is it important to solve?

USER needs **USER NEED**
Because **INSIGHT**
LEARNED THROUGH EMPATHY

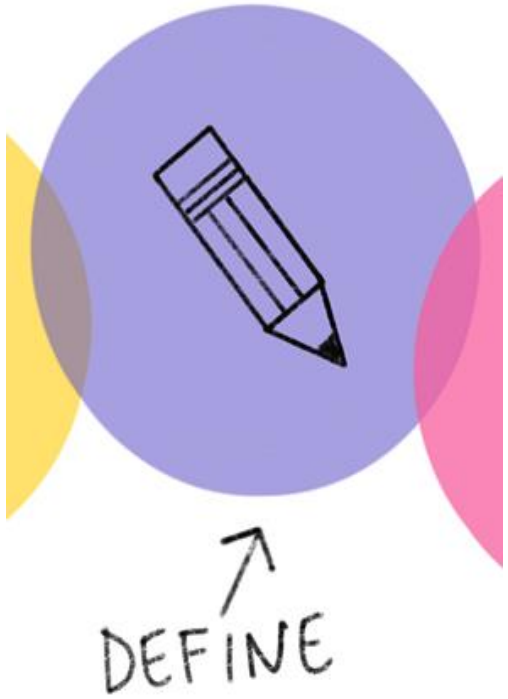
Problem Statement

- Who is experiencing the problem?
- What is the problem they experience?
- When do they experience the problem?
- Why is it important to solve?

For your one chosen area, identify a user and state their problem

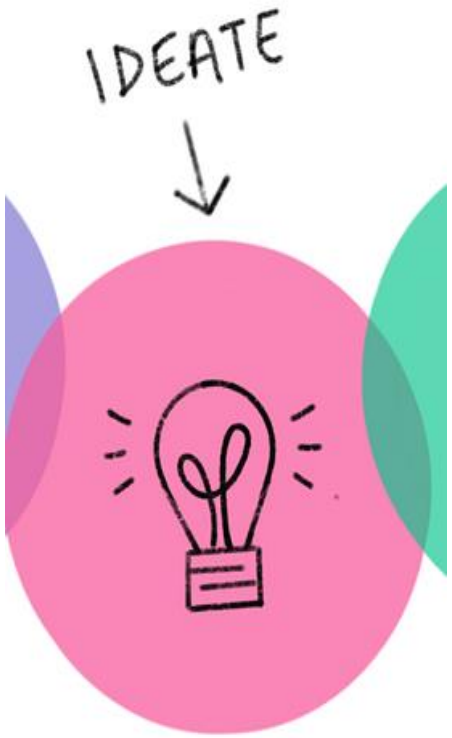
USER needs **USER NEED**
Because **INSIGHT**
LEARNED THROUGH EMPATHY

Design Thinking



What patterns do you notice?
Any interesting outliers?
What is intriguing to you and what would you like to continue exploring?

Design Thinking

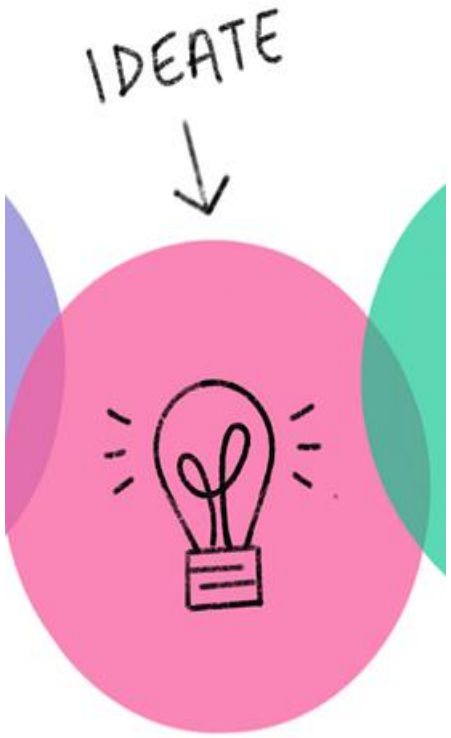


We move from the problem space to the solution space

Reframe the problem “How might we”

Design Thinking

- One idea voiced at a time
- Encourage wild ideas
- Defer judgement for the 1ST half
- Build on the ideas of others
- Generate further ideas



Brainwriting

Start by generating some ideas independently. Use this to start a conversation with your group.

Build on ideas

'Yes and...' is a powerful way to build on each others' ideas. Don't dismiss ideas yet.. stretch them to their limits!

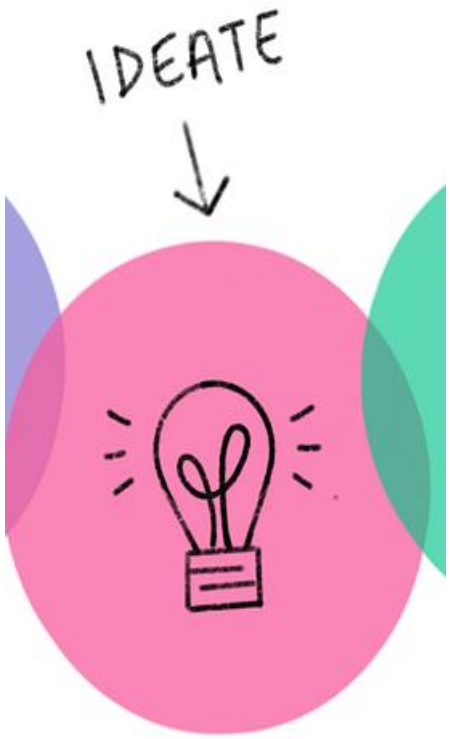
Expand ideas

Challenge your team to come up with a range of ideas including those that are radical. blue sky thinking.

Choose your idea

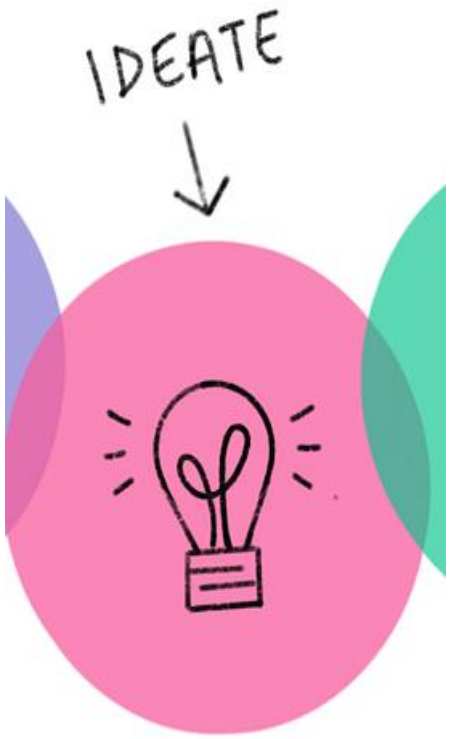
As a group choose the idea that you think best solves your problem statement.

Design Thinking: Let's explore solutions



- Pass your sheet of post-it’s to the person to your right
- Read the ideas generated by your team member
- Build upon each other's ideas
- Add new ideas, insights or variations on what they have written
- **Expand on their existing ideas**

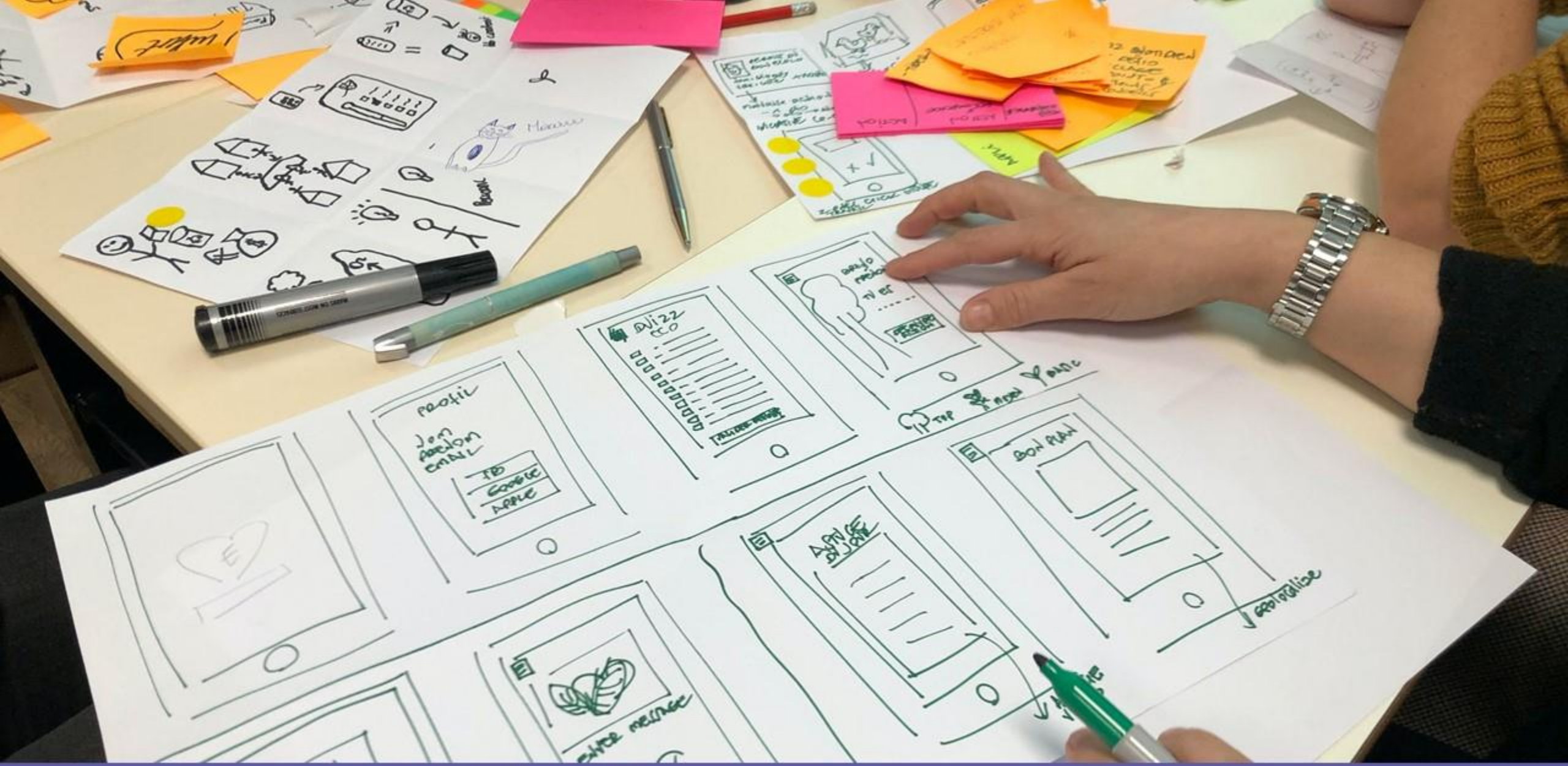
Design Thinking: Let's explore solutions



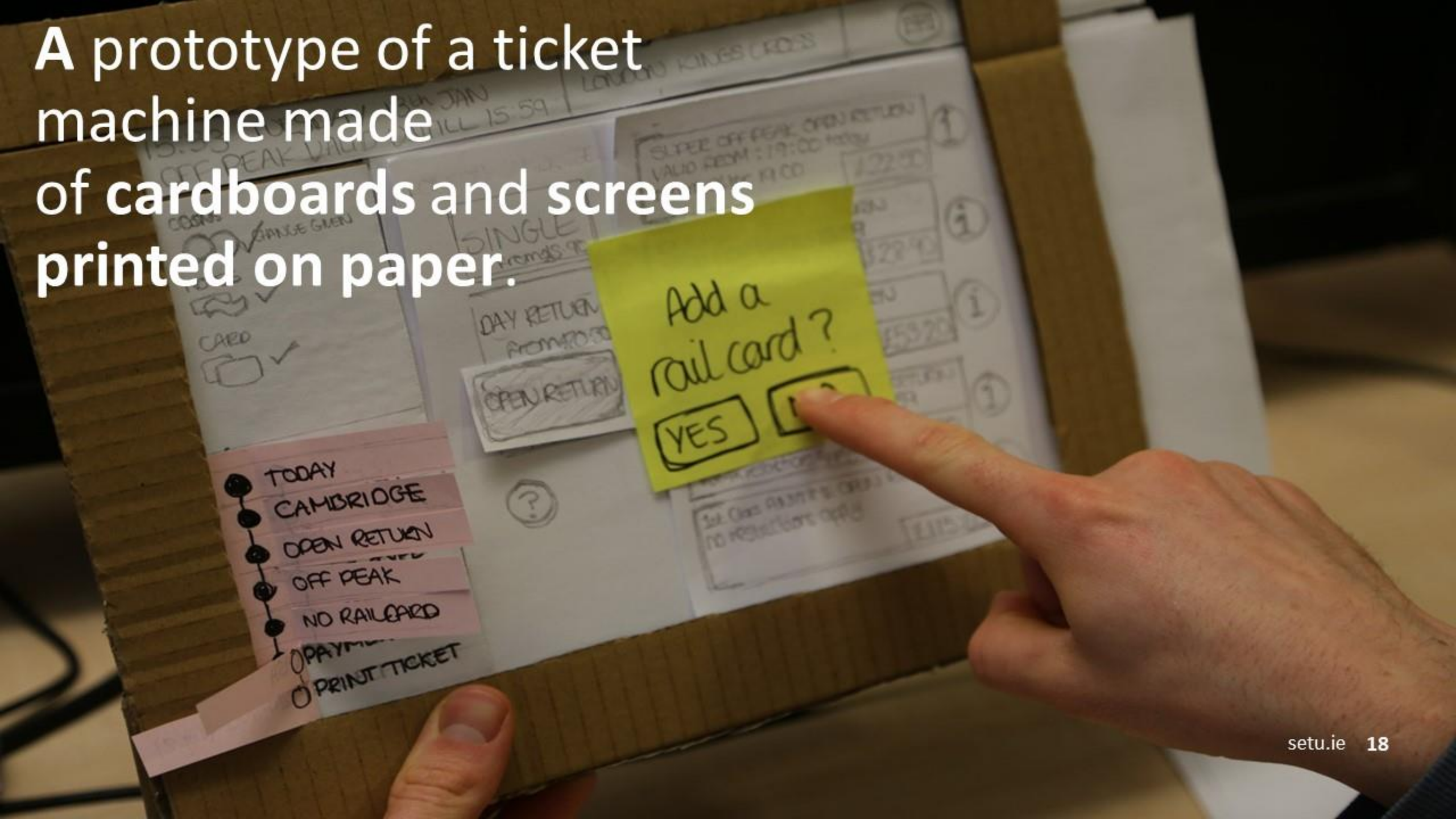
- As a group review the list of ideas generated
- Identify the most impactful ideas/solutions
- Vote on the most impactful idea/solution to your problem statement to take forward

Design Thinking

Prototyping is about bringing abstract, conceptual or theoretical ideas to life



Why do we prototype?



A prototype of a ticket machine made of **cardboards** and **screens printed on paper**.

Play-Doh and Paper

The patient will see you now?

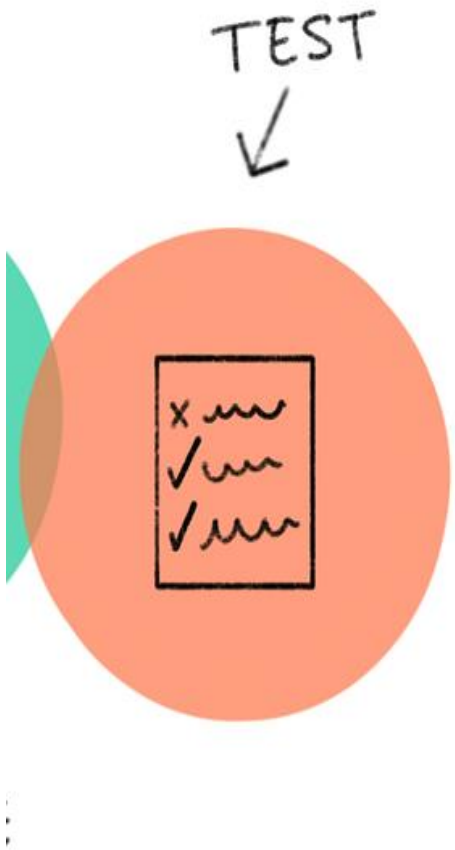
Design Thinking

Feedback

- Is it useful? Why/why not?
- Is it desirable? Why/why not?
- Is it easy to use? Why/why not?
- Is it sustainable? Why/why not?

- **How does it compare to the alternatives?**

Design Thinking



- Share your ideas
- Take a picture
- Gain feedback on your solution
- **Iterate**