31260   42017
Fundamentals of Interaction Design

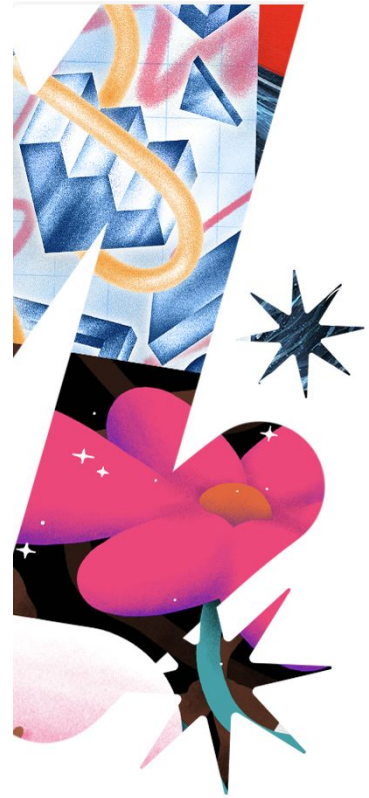Lecture 3, Week 3

The Interaction Design process

Yvonne Rogers, Helen Sharp and Jenny Preece (2015)
Interaction Design: beyond human-computer interaction, (5th Edition) John Wiley, Chapters 7,8,9

Lecture overview

- Assessment task 2 - Examination

- What is Design?

- Human Centred Design

- Design Thinking

Lecture Overview

- Assessment task 3 - Design assignment

Assessment task 2: Examination (real world technology evaluation) - 1st October

Exam group	Exam time	Tutorial groups
	Week 10 **Tuesday 1st October**	
1	8:45 - 10.30am	**PG**: Tut 02 (9:30 Wade)
		UG: Tut 04 (9:30 Allie)
2	10.15 - 12pm	UG: Tut 05 (9:30 Dom)
		UG: Tut 06 (11:00 Dom)
3	11.45 - 1.30pm	UG: Tut 07 (12:30 Daniel)
		PG: Tut 01 (12:30 Wade)
4	1.15 - 3:00pm	UG: Tut 02 (16:30 Nat)
		PG: Tut 03 (16:30 Allie)
5	2.45 - 4.30pm	UG: Tut 01 (16:30 Suman)
		UG: Tut 02 (16:30 Daniel)
6	4.15 - 6.00pm	UG: Tut 08 (3:00 Daniel)

Location of the exam is near UTS and will be released closer to date.
Any timetable clashes must be proven and emailed to the subject coordinator, Wade Marynowsky.

*UG = 31260 **PG** = 42017

Your tutorial number

Tutorials - UG	
Tuesday	**Tutor**
16:30 (Tut 01)	Suman
16:30 (Tut 02)	Nat
16:30 (Tut 03)	Daniel
9:30 (Tut 04)	Allie
9:30 (Tut 05)	Doménique
11:00 (Tut 06)	Doménique
12:30 (Tut 07)	Daniel
Wednesday	
12:30 (Tut 08)	Daniel

| Tutorials - PG	
Tuesday	**Tutor**
12.30 (Tut 01)	Wade
9.30 (Tut 02)	Wade
Wednesday	
16:30 (Tut 03)	Allie

What is design?
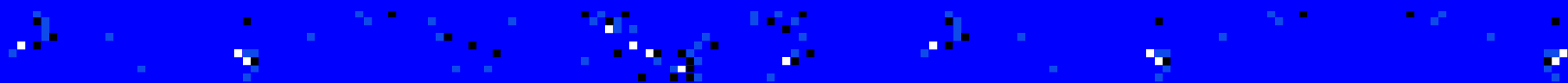
Designing is a goal-directed problem solving activity

simulating what we want to make (or do) before we make (or do) it as many times as may be necessary to feel confident about the final result.

Jones, Design studies reader, Oxford, 2009

simulating what we want to make (or do) before we make (or do) it as many times as may be necessary to feel confident about the final result.

Jones, Design studies reader, Oxford, 2009
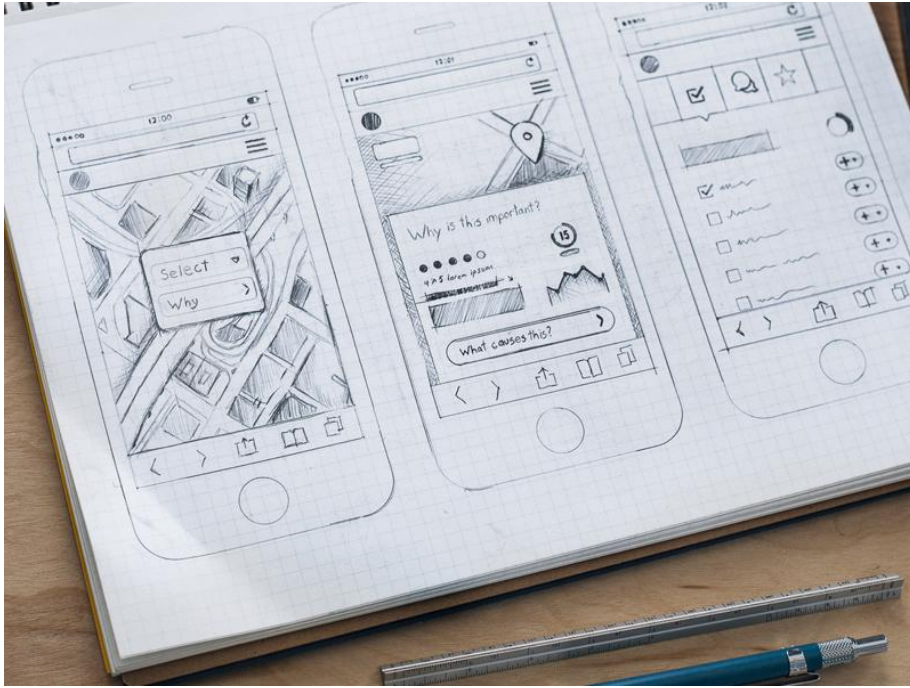
Design

is both a **process over time** and also a number of **intermediary representations**

or **artefacts** that are produced throughout the process and are used to determine its coordination.

Design artefacts we use in this course

- Persona
- Problem scenario
- Future use scenario
- Storyboard
- Prototype
- Usability report
- Design in action video

Design is important because it is a **creative activity** that brings into being **something new** and **useful** that has not previously existed.

Sony Walkman 1984

Apple iPod, 2001

Netscape Navigator, 1994

Google Chrome, 2019

Human Centred Design

Human Centred Design (HCD)

The essential principles of HCD are to make user issues central to the design process, to carry out early testing and evaluation **with** users and to design iteratively, **with** the user.
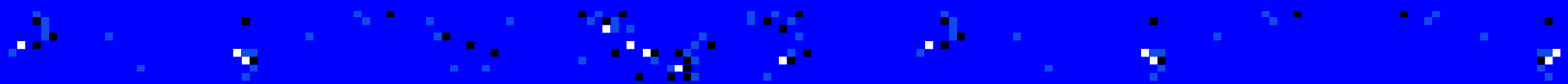
Human Centred Design
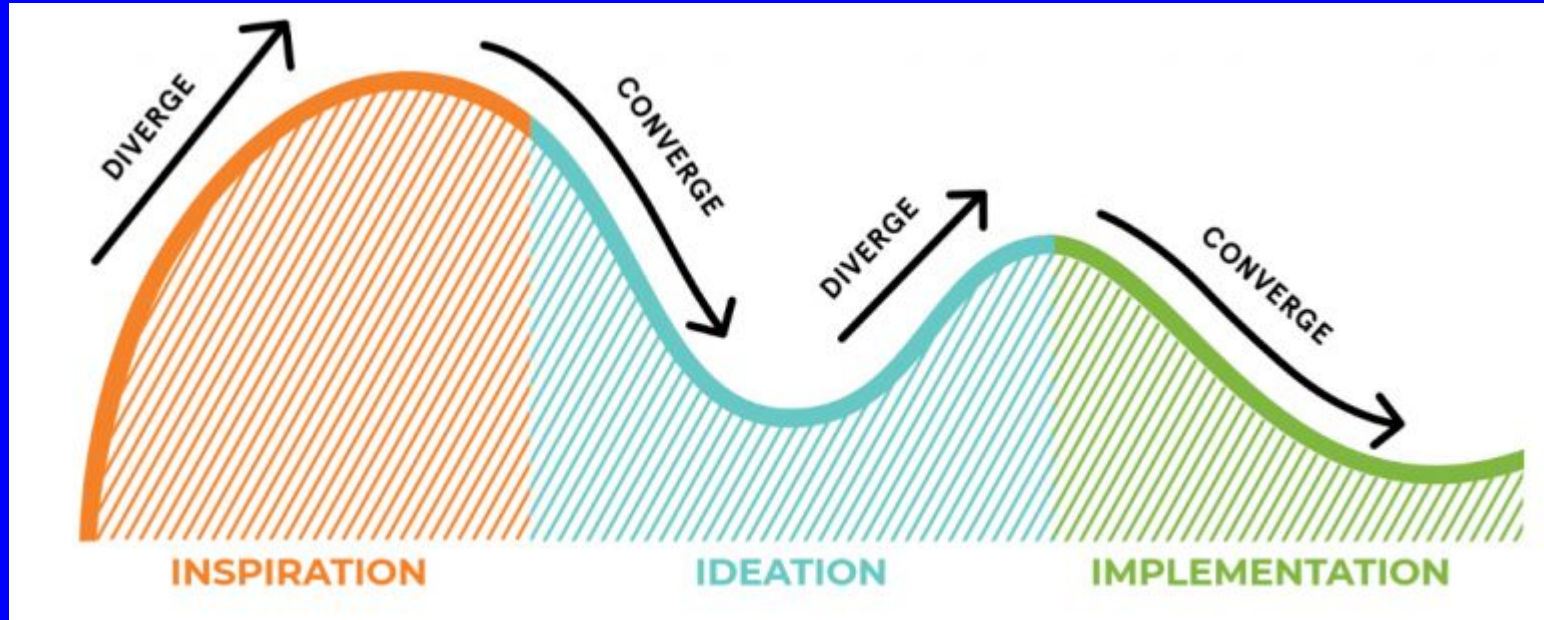
Human-Centered Design Process

Human Centred Design

- Understanding the user(s)
- Designing **with** users
- Iterating **with** users

Human Centred Design

Why involve users in the design process?

- For expectation management
  - Realistic expectations.
  - No surprises, no disappointment.
  - Timely training.

- To encourage ownership
  - Users can be active stakeholders.
  - More likely to forgive or accept problems.
  - Makes a big difference to system acceptance and success.

Design Thinking
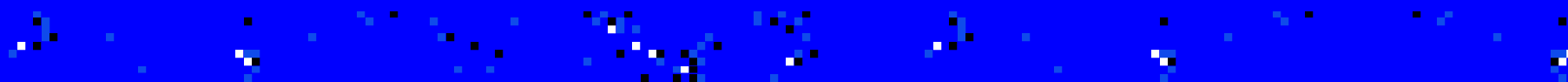
Design Thinking and Human-Centered Design

Design Thinking was as originally popularized by IDEO for creating commercial products (such as the apple mouse), and it is typically used to create market-based products and/or services.

Lisa Mouse (A9M0050) created for the Apple Lisa was the first commercial mouse sold in the marketplace. Included with the Lisa system in 1983.
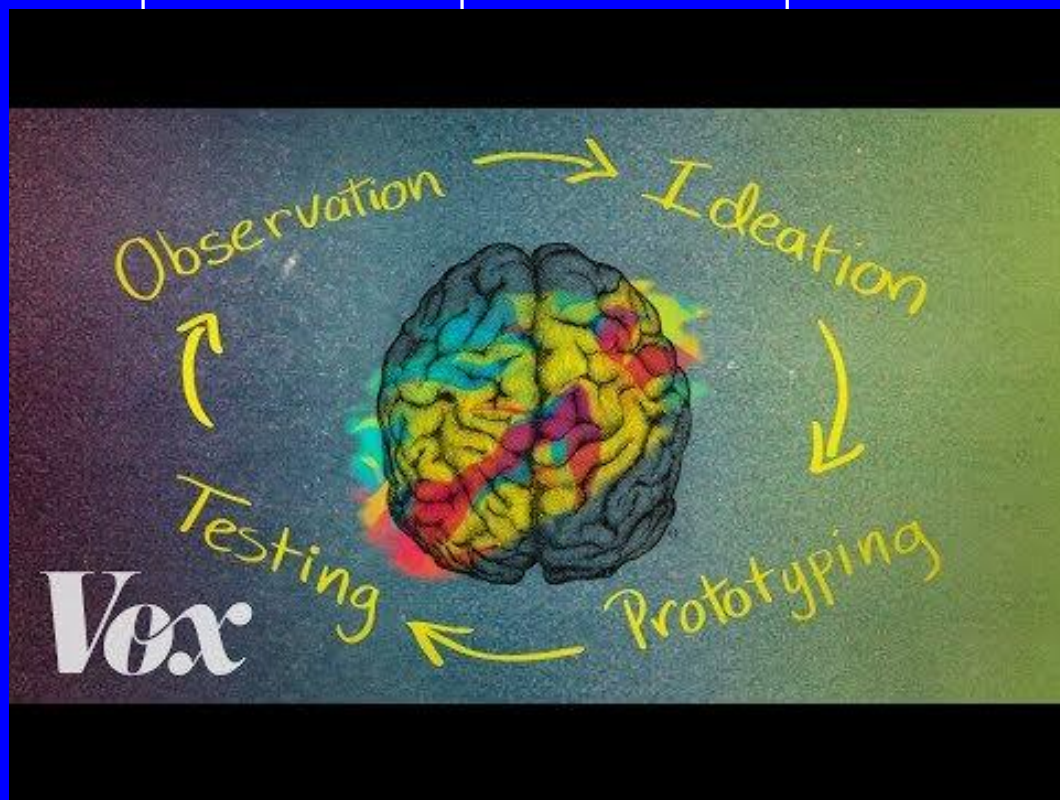
How to solve problems like a designer

Design Thinking

is an iterative process in which we seek to understand the user.

Design Thinking

should challenge assumptions, and redefine problems in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding.

Design Thinking

PRINCIPLE	DESCRIPTION
Empathise	Design Thinking begins first with understanding people, and trying to focus on a definable problem that this group of people has.
Define	Define and frame one problem that you can meaningfully design towards.
Ideate	Come up with as many ideas as possible — not just "right" ideas.
Prototype	Develop a minimum viable prototype to see if the solution will actually be adopted by the market.
Test	Test the prototypes in order to first identify if they will be adopted, and also as a format to learn more about the end-user.

Brainstorm and create solutions.

Build representations of one or more ideas.

Empathize

Define

Ideate

Prototype

Test

Learn about the audience.

Sharpen key questions.

Test ideas and gain user feedback.

d. HASSO PLATTNER
Institute of Design at Stanford

Stanford
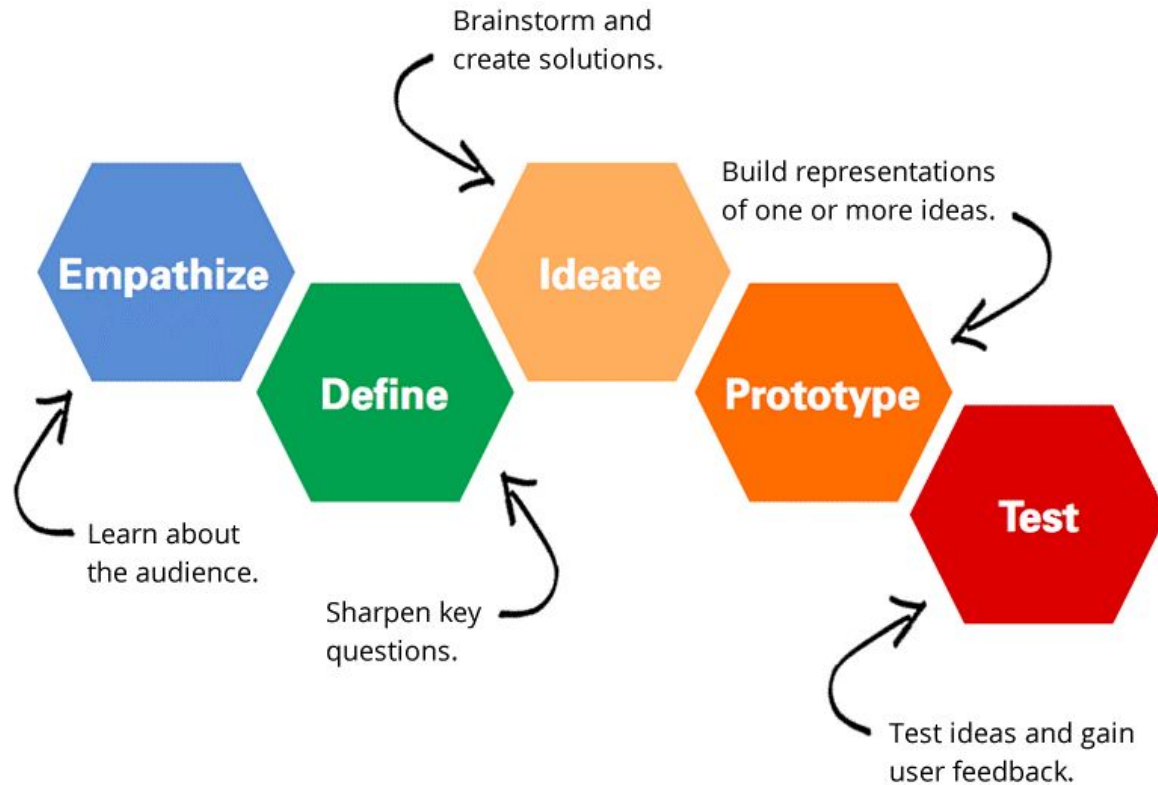
Empathise Define Ideate Prototype Test

Empathise

Design Thinking begins first with understanding people, and trying to focus on a definable problem that this group of people has.

It's the "inspiration" phase, when we should not rush to get to execution.

Empathise: Research & User Research

Activities

Outcome

1 **Literature research**

Understanding of problem

Create interview questions

2 **User research data collection**

Better understanding of the problem

3 **Transcribe data Analyse data**

Even better understanding of the problem

4 **Represent data and users**

Create Personas and Scenarios

Deep understanding of the problem
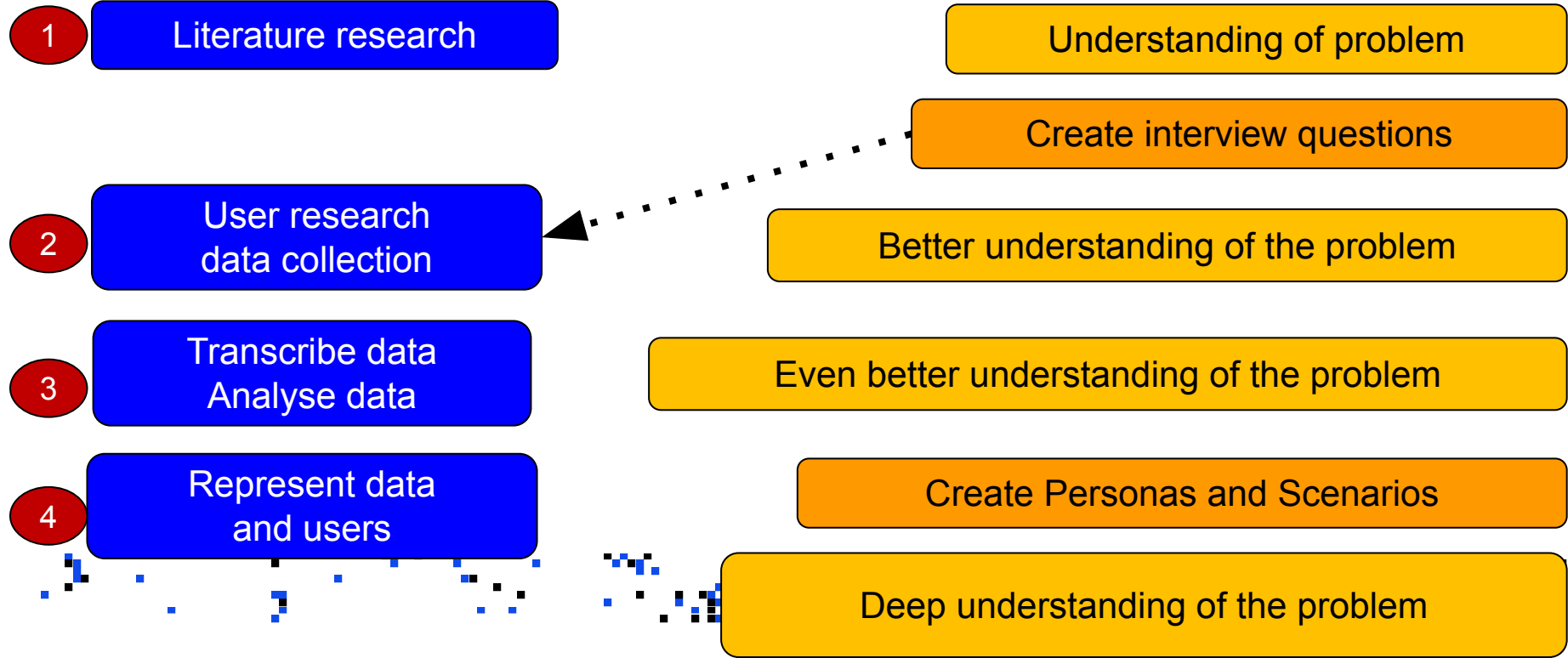
Empathise: User research**,** is used to learn and understand people's…

NEEDS	ACTIVITIES	EXPERIENCE	CONTEXTS
what they do or don't want; their wishes, desires	what / when / how they perform the activities	what they feel, think and why they feel and think that way	environment, situation, condition

… to gain insights to inform design of new technologies or to evaluate our design.

Empathise: Research

Activities

(1) **Literature research**

Papers available on UTS online

1. Literature Review: papers and reports about Ageing

Paper: Positive Ageing - elements and factors for design

Attached Files: 📄 Positive Ageing - elements and factors for design.pdf ⊘ (297.722 KB)

This is a very useful paper to read to understand what we mean by Active ageing and many other approaches to support older people to not just live longer but to have a better quality of life.

Paper: Dispelling Ageing Myths in Technology Design

Attached Files: 📄 Dispelling Ageing Myths in Technology Design.pdf ⊘ (274.584 KB)

Report: Active Ageing Framework from WHO

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Report: The meaning of active ageing to Australians

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Paper: The Meaning of Place in Supporting Sociality.pdf

Attached Files: 📄 The Meaning of Place in Supporting Sociality.pdf ⊘ (8.898 MB)

Empathise: User Research

Activities

Outcome

| Create interview questions |

2 User research data collection

| Better understanding of the problem |

3 Transcribe data Analyse data

| Even better understanding of the problem |

4 Represent data and users

| Create Personas and Scenarios |

| Deep understanding of the problem |

Empathise: User research through interviews

An interview is a systematic, sustained series of questions and answers which addresses a specific series of topics of interest to the researcher.

- formal interviews are rarely achieved
- questions can be asked on the fly (in context!)
- use prototypes
- good for exploring issues
- time consuming, not feasible to visit everyone

User Research Methodologies

Quantitative & Qualitative

'Quant.' versus 'Qual.'

Quantitative research	Qualitative research
Collecting numerical data	Helps us understand people's motivations, feelings and opinions
For example,: - how many people clicked here? - how many clicks? - what % of users could find the call to action? It's valuable in understanding statistical likelihoods, and what is happening on a site or in an app.	Often takes the form of an interview or workshop. Common questions, include: - why did people use the app? - why didn't they see the call to action? - what else did people notice on the page?

Qualitative Research

Quantitative Research

Empathise   Define   Ideate   Prototype   Test

Define

Define and frame one problem that you can meaningfully design towards.

Define

Literature research & user research through interviews can help us to start to define the problem space, this is assisted through the process of ideation.

Empathise   Define   Ideate   Prototype   Test

https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular
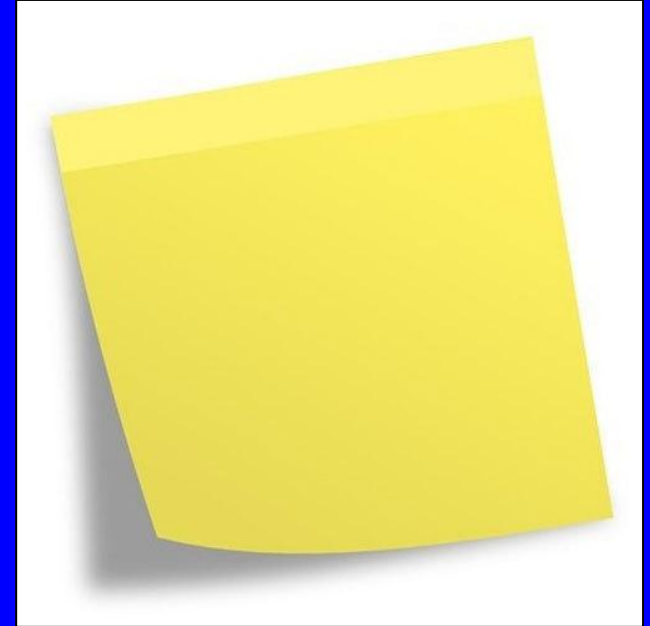
Ideate

Come up with as many ideas as possible — not just "right" ideas.

Affinity Diagramming

A form of ideation

Affinity Diagramming

1- Extract findings

2- Display findings

3- Sort findings into themes

4- Create Headers for themes

5- Photograph finished Diagram
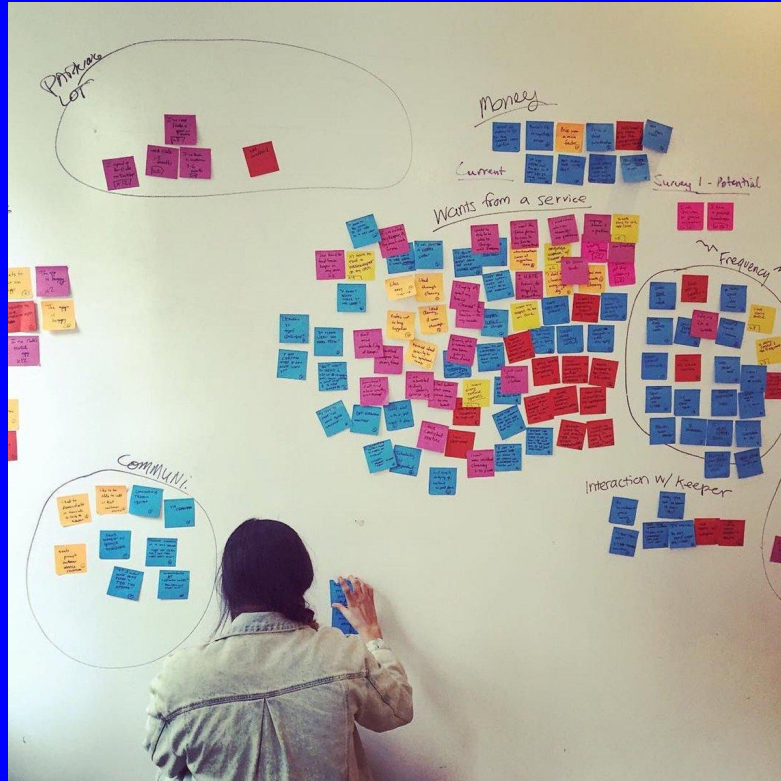

Post it notes

Affinity Diagramming

Many post it notes!

Affinity Diagramming

More post it notes!

Empathise   Define   Ideate   Prototype   Test

Prototype

Develop a minimum viable prototype to see if the solution will actually be adopted by the market.

Prototype

Test

Test: We test the prototype with our user using the Usability Heuristics

DESIGN THINKING: A NON-LINEAR PROCESS

Learn about users through testing

Empathise to help define the problem

Tests create new ideas for the project

Empathise → **Define** → **Ideate** → **Prototype** → **Test**

Learn from prototypes to spark new ideas

Tests reveal insights that redefine the problem
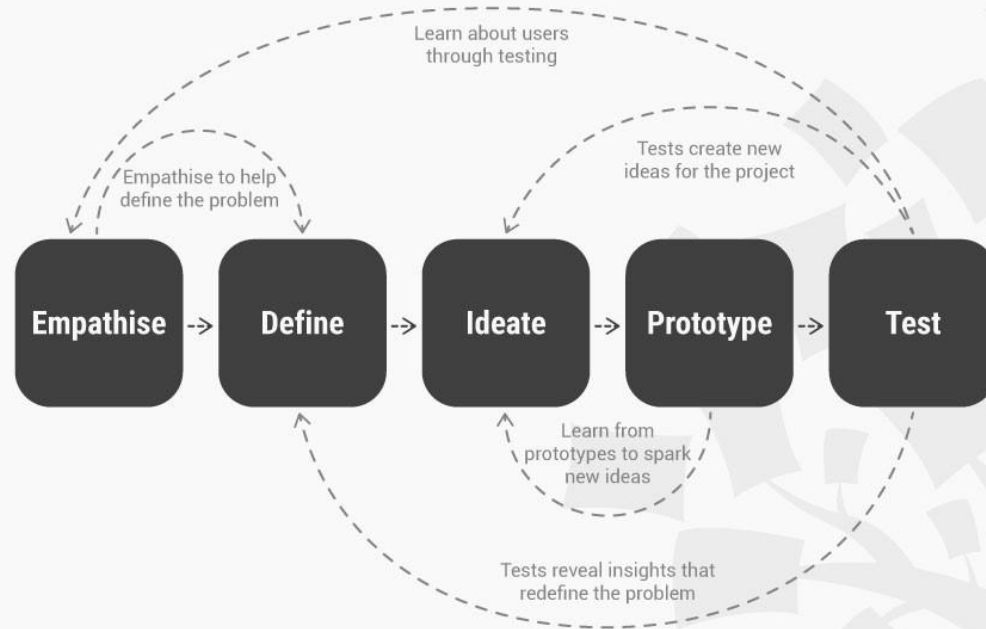
INTERACTION DESIGN FOUNDATION | INTERACTION-DESIGN.ORG

https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular

Design Thinking and Human-Centered Design Together

EMPATHIZE   DEFINE   IDEATE   PROTOTYPE

DIVERGE →   CONVERGE →

INSPIRATION   IDEATION   IMPLEMENTATION
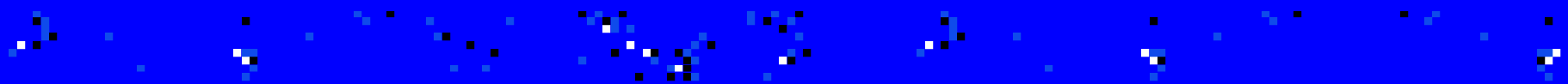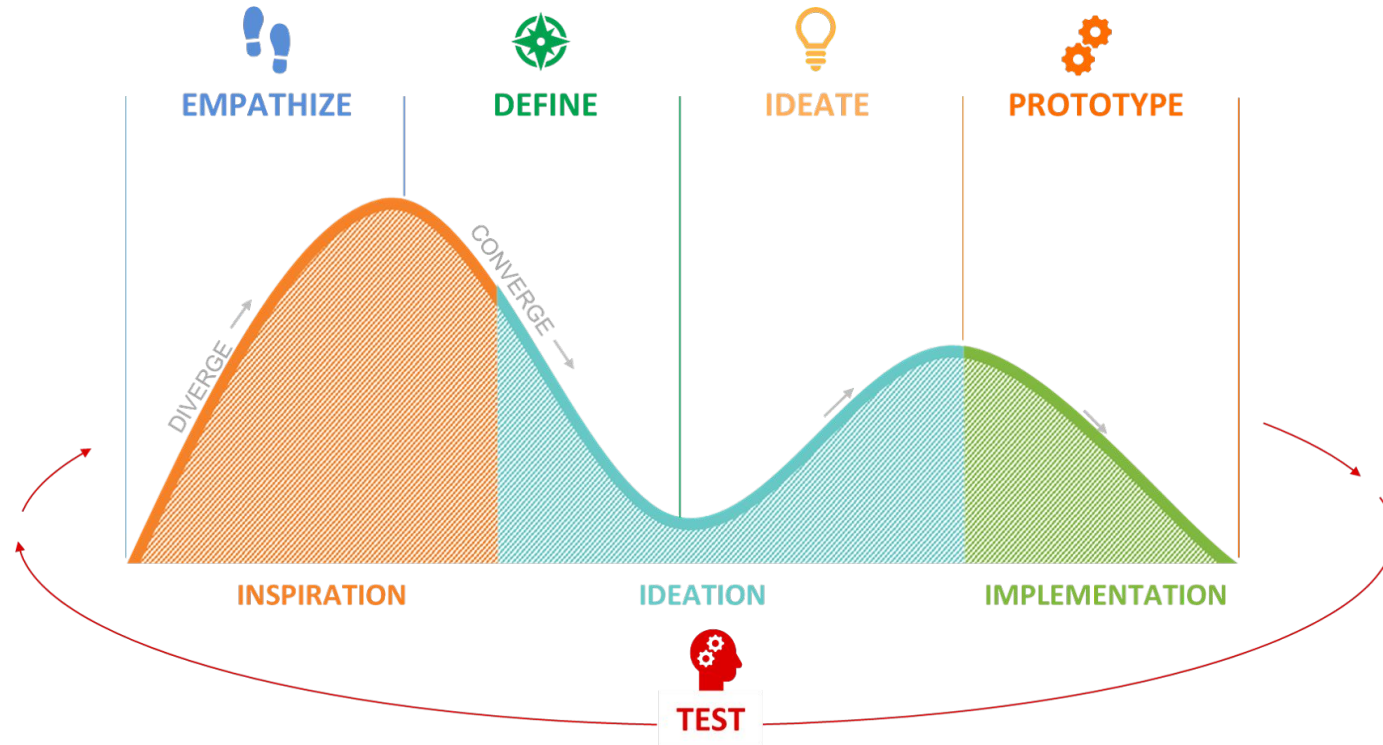
TEST

Using Human-Centered Design with Design Thinking

Assessment 3: Design Assignment

Components of the Design Assignment

	Journal #1 due		**Journals #2 and #3 due**	**Journal #4 due 20%**					**Informal Exam 35%**		
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
						Persona & Scenario 7%			Paper Prototype & Usability Report 18%		D-i-A video 20%

WEEK

Design Assignment

Components of the Design Assignment

Marks: **45%** (Individual: 25%; Group: 20% with peer assessed)

Due Dates: **Week 7** – Persona (7%).

Week 10 – Paper prototype (8).

Week 10 – Usability report (10%).

Week 12 – Design-in-action video (20%).

The real-world problem you are tasked to solve

Various factors influence older adults' capacity to age well.

Health: mental, physical, emotional and spiritual

Participation: social (family, community, etc.) and work/volunteer

Security: financial wellbeing and living environment

Using networked technologies to enhance active ageing

Students will work individually and in groups of 4-5 to develop the interaction design and a video of the design-in-action for a **networked system including two devices.**

Health: mental, physical, emotional and spiritual

Participation: social (family, community, etc.) and work/volunteer

Security: financial wellbeing and living environment

Using networked technologies to enhance active ageing

Some known problems

- Loneliness
- An overwhelming number of pills
- Tiredness when out and about
- Less mobile
- Haunted by health mistakes made when younger

Using networked technologies to enhance active ageing

Health: mental, physical, emotional and spiritual

Participation: social (family, community, etc.) and work/volunteer

Security: financial wellbeing and living environment

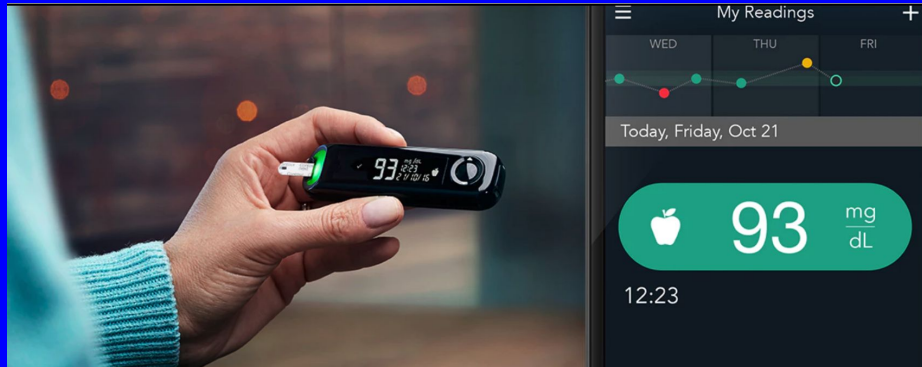# Using networked technologies to enhance active ageing

As people age, they need to put in more work to maintain their level of **independence, connectedness, and agency**.

This may mean engaging in more or different kinds of **exercise; changing diets or habits**, and may also mean finding new ways to maintain **social connectedness.**

Using networked technologies to enhance active ageing

"adding life to years and not merely years to life".

Using networked technologies to enhance active ageing

Design in action video from previous years students: CALI

Empathise: Research

Activities

1 Literature research

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1. Literature Review: papers and reports about Ageing

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Empathise: Conduct your own interview(s)

Activities

2 | Interview >55 year old

# **Empathise:** Conduct your own interview(s)

Activities

2 Interview >55 year old

Record an interview (40 minutes in length). Complete 2-page Summary of your conducted interview, complemented with provided audio interviews. Bullet point form in relation to the themes of Health, Participation, Security for Week 5.

Why interview data is so important

- Affinity Diagramming (**ideation**).

- Pitching your (group) **ideas** to the class.

- Development of a **Persona**.

- Formation of a **problem scenario**.

- Formation (imagination) of a **future scenario**.

- Development of the **paper prototype**.

- Creating a **Design-in-Action video**.
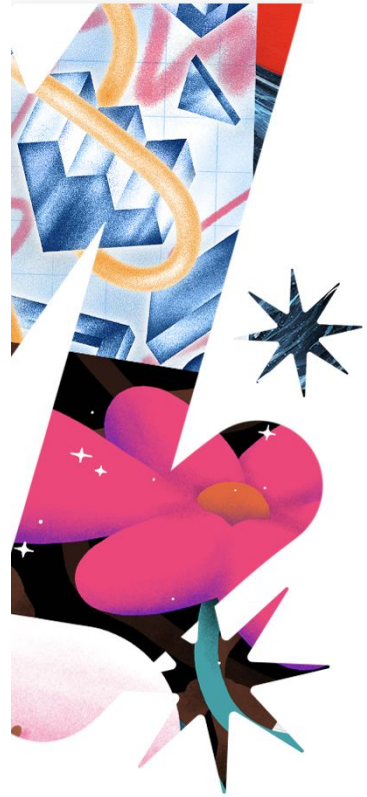
Interview options

- Conduct an interview of your own.

- If you cannot find anyone to interview use **at least two** pre-recorded interviews (provided on UTS Online). There are four audio files.

- The more interview data you have, the richer your understanding of the design problem will be.

Support for your user research: UTS online/ assessments

See UTS online Assessments folder for a

Assignment description,

2a.Interview data (pre recorded interviews),

2b. Sample questions.

Fundamentals of Interaction Design Spring 2019

Design Assignment Description & Supporting Materials

Assessment task 3: Design Assignment descripton
Attached Files: Assessment_3_Design_Assignment_description.pdf (121.895 KB)

0. Group Formation: resources

1. Literature Review: papers and reports about Ageing

2a. Interview Data (audio)
The 4 audio files, included here, are solely for the educational use of UTS students who are enrolled in the subject, Fundamentals of Interaction Design.

They are not to be used, copied or distributed outside of this subject.

2b. Interviewing: sample questions
Information and consent forms for participants of your interviews.

Interview topics

Personal background

- Name, age, (ethnic) background, family (partner, children, grandchildren, etc.)

- Occupation (PT/FT), if retired, former occupation(s)

- Technology use - hardware/software, platforms, goals for use, individual-social, how often, views about IT, General interests, hobbies, etc.

Interview topics

Ageing related

- How is your informant feeling about his/her <u>physical</u> health; <u>mental</u> health; <u>emotional</u> health; <u>overall wellbeing</u>?

- What is your informant's <u>social life</u> like?

- How does your informant feel about his/her <u>home</u>; <u>sense of security</u>?

- What are some of your informant's desires or hopes for his/her as he/she ages?

- What are some of your informant's fears as he/she ages

- What are some of your informant's thoughts about how technology might support them as they age?

Types of interviews

- ***Unstructured*** - are not directed by a script. Potentially rich data but not replicable.

- ***Structured*** - are tightly scripted, often like a questionnaire. Replicable but may lack richness.

- ***Semi-structured*** - guided by a script but interesting issues can be explored in more depth. Can provide a good balance between richness and replicability.

Types of questions

open-ended vs closed-ended
- interviewee can give any answer they like or a given a choice between explicit alternatives. Closed ended, often 'yes' or 'no' answers

direct vs indirect
- how obviously does a question solicit a specific piece of information?

Types of questions

specific vs non-specific
- focus on particular person, object, idea, etc., or probing a general area

fact vs opinion
- question about 'what is' or about a preference and reasons for it

question vs statement
- one seeks an answer, the other agreement or disagreement

Examples of questions

Open-ended vs closed-ended

E.g. What do you think of the Prime Minister? Why do you feel that way

E.g.. Which of the major parties do you <u>prefer</u>? Why do you feel that way?

Direct vs indirect

E.g. Do you like your job?

E.g. What do you think about the opportunities provided for you in your job?

Examples of questions

Specific vs non-specific

E.g. Do you like using Microsoft Word?
E.g. How satisfied are you with the word processing packages you currently use?

Fact vs opinion

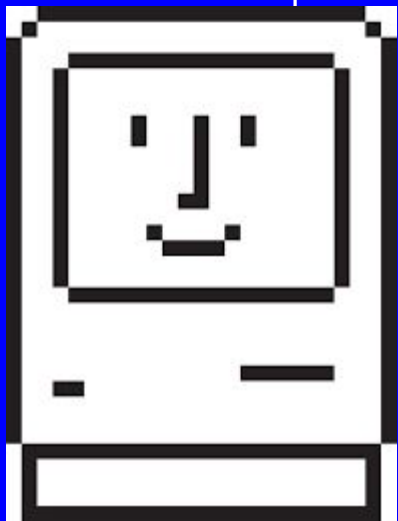E.g. What kind of car have you got?
E.g. Do you prefer big cars or little ones?

Question vs statement

E.g. Do you think the honours workload should be increased?
E.g. The FID workload should be increased. Do you agree or disagree?

Questions?