Applied Software Engineering SIT725

T2 2024

Valeh Moghaddam

Lecture 3
Design

Outline

- What is design?
  - Design thinking
  - Lean development
  - In practice..

What is design?

Definition: *“A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made.”*

01

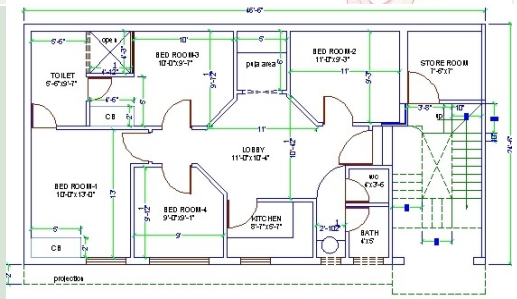
THEN THIS IS DESIGN …

The style or pattern to be drawn on a garment.

02

… AND THIS IS DESIGN

A plan for the structure of a building floor.



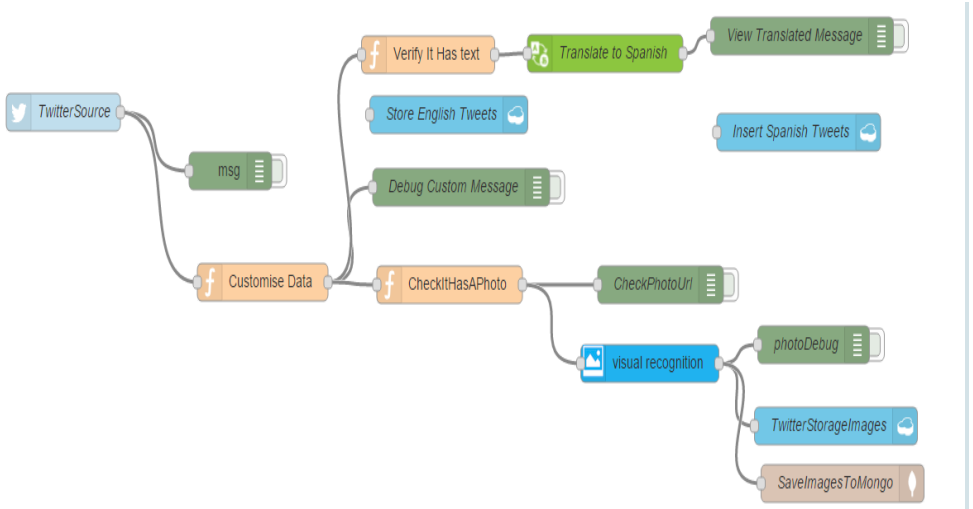
What is design?

- Thinking further….
- *Perhaps if we take into consideration that design is “putting together drawings or patterns” we can resemble a similarity with creating complex applications.*

03

THIS IS DESIGN TOO …

A schema about the application flow and the interactions of its components.



What is design?

Creating an application out of design

In reality, design starts long before any machine is ever required.

Translating a well defined design into an application, is in fact quite simple.

SO THEN, WHAT IS DESIGN?

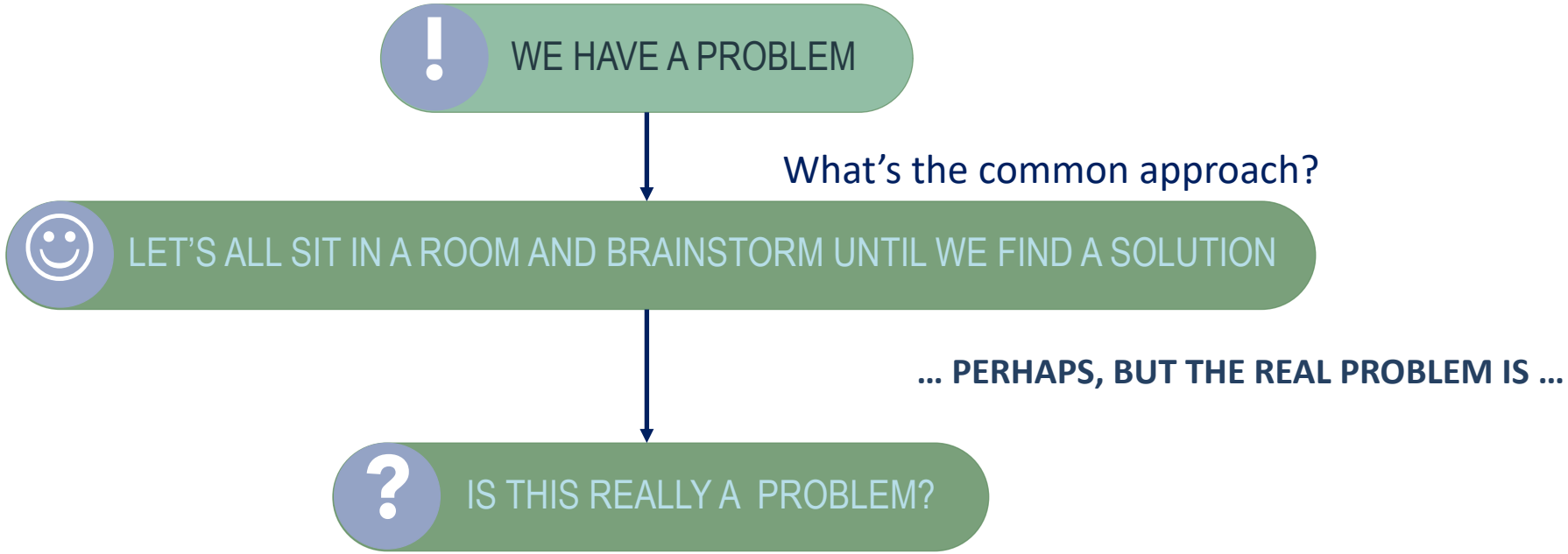
Design is the approach you take to solving problems and understanding users and the insights you aquire in the process.

Design thinking..

Problem solving

A very simple problem..

Let's investigate the process we use to solve problems…



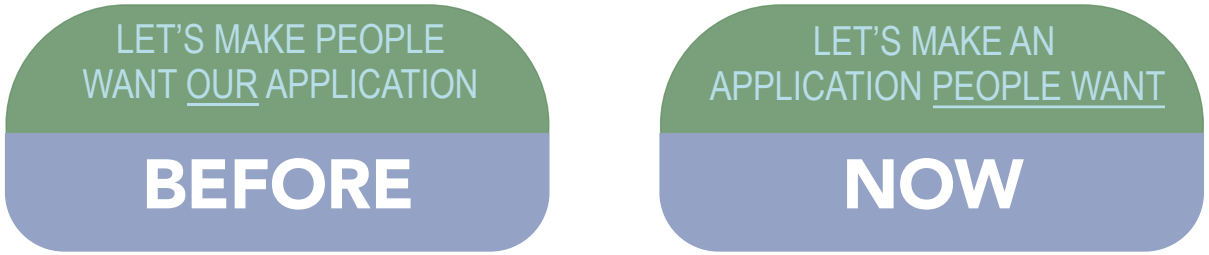
Design Thinking..

PROBLEM SOLVING

How to find if a problem is really a problem?

DESIGN THINKING

Design thinking is a framework for design which is user centric, and evolves around the user behaviour and feelings.



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Design thinking..

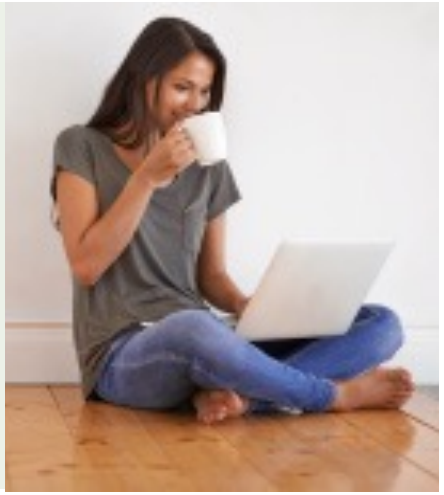
DESIGN GOALS

What design should accomplish?

01

USER CENTERED

Design should satisfy a need or something the USER wants to do. Therefore the user cannot be left out. Assuming a solution without knowing the users may often become something unwanted.



Design thinking..

DESIGN GOALS

What design should accomplish?

02

USER SATISFACTION

People are different, culturally and behavior wise, therefore there is no one good solution for everyone. Everyone has different feelings. People should be HAPPY!

Design thinking..

DESIGN GOALS

What design should accomplish?

03

FOSTER CREATIVITY

Solving problems is about great ideas, before thinking it is too difficult, you should try to envision it, if you can envision it, perhaps it is not so impossible to build it!

Design thinking..

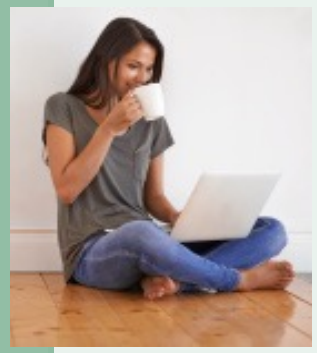
DESIGN GOALS

What design should accomplish?

FOCUS POINT

IN SUMMARY ...

Build something the USER wants in order to make him HAPPY and build it with CREATIVITY!



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Designing the user experience

What most people think UX is?

- Field research
- Face to face interviewing
- Creation and administering of tests
- Gathering, organizing, and presenting statistics
- Documentation of personas and findings
- Product design
- Feature writing
- Requirement writing
- Graphic arts
- Interaction design
- Information Architecture
- Usability
- Prototyping
- Interface layout
- Interface design
- Visual design
- Taxonomy creation
- Terminology creation
- Copy writing
- Presentation and speaking
- Working tightly with programmers
- Brainstorm coordination
- Company culture evangelism
- Communication to stakeholders

Designing the user experience

What UX actually is?

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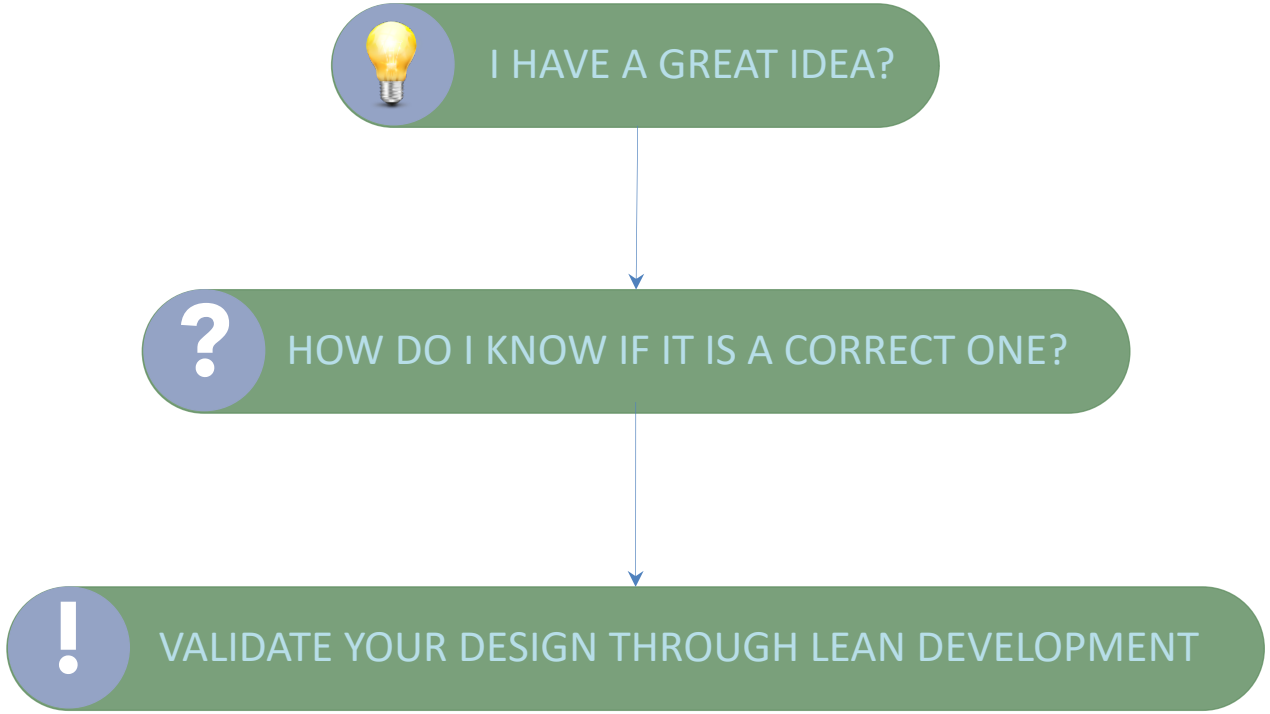
Lean development

Lean development

PROCESS Applying design thinking



Lean development

Definition

Lean manufacturing or lean production, often simply “lean” is a systematic method for the elimination of waste within the manufacturing system.

01	Validate your progress continuously.
02	Learn from your experience quickly.
03	Minimise waste.

Lean development

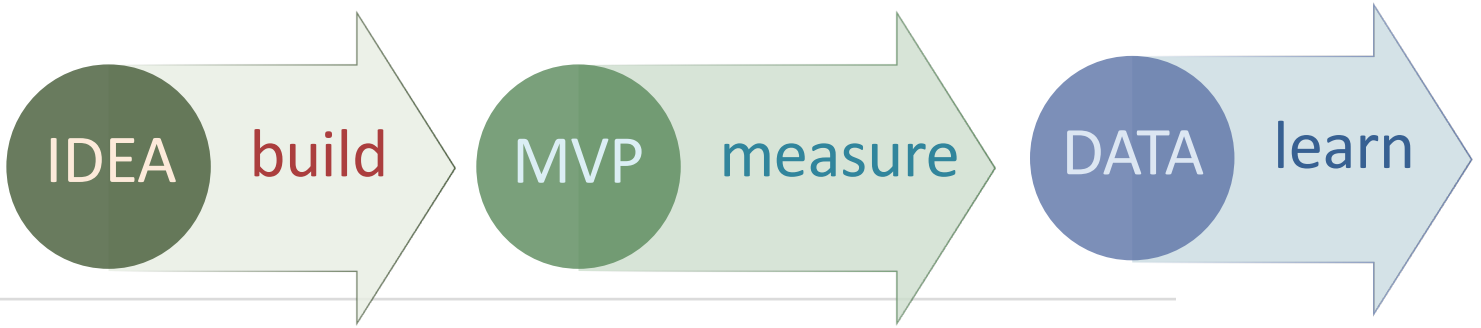
What is waste?

WHAT IS IT	Building something nobody wants, spending resources into doing this.
WHAT IS NOT	The time you have spent building something nobody wanted but you have learned from it.
CAN I AVOID IT?	The simplest thing you can do, is minimize waste. Lean Development aims to do this by minimize the time it takes to “learn” and making sure that only measurable outcomes are performed .

Lean development

CONCEPTS Lean is based on three principles

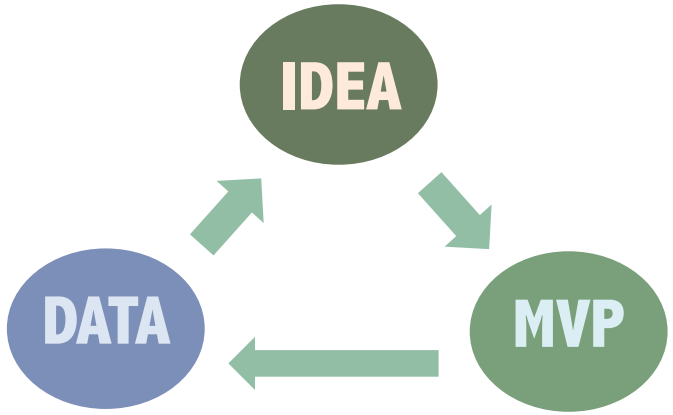
BUILD	Start from an IDEA and build a Minimum Viable Product (MVP) from it.
MEASURE	Measure your MVP to obtain DATA.
LEARN	Learn from DATA to make new decisions (steer or pivot).



Lean development

CONCEPTS Lean process

01	Each iteration should contain the feature that makes the MVP valuable.
02	By decreasing the amount of time per iteration, we can decrease waste.
03	Every iteration must be measurable.



In practice …

In practice…

Example Weather calls!

You had a fantastic idea for an automated weather forecast service over the phone…

You dial up and the service will automatically tell you the current weather.

What is the key element that tells you whether or not this idea will be successful?

In practice…

Example

MVP: over the phone weather forecasts

Your MVP will probably only require that you have an incoming phone line and a person sitting at the desk with the weather forecast in front of her, reading it out to the user.

CUSTOMER

What's the weather like tomorrow?

Tomorrow it will be sunny.

OPERATOR

In practice…

Example MVP: over the phone weather forecasts

After this initial proof of concept we can start making some useful observations:

01

WHERE IS THE AUTOMATION?

The automation is not a key characteristic of our idea and at present stage does not contribute to its success.

02

DO THE USER ACTUALLY CALL?

At this stage is more crucial to see whether the service is being used.

In practice…

Example

MVP: over the phone weather forecasts

What can we learn so far?

01

IF PEOPLE DIALED THE SERVICE ….

… then you would have learned that the project is valid until now and you would move with more confidence to implement a new feature.

02

IF THEY DID NOT …

… perhaps it is time to go back to the drawing board. Maybe, they're not interested after all.

In practice…

Learning What did we learn?

01

DESIGN

Design goes beyond "graphics", it is the very heart of your project and how an idea becomes a product .

02

DESIGN THINKING

Design thinking is the process to understand real requirements based on a user centric framework.

03

LEAN DEVELOPMENT

Lean Development is a methodology that opts to create as little "waste" as possible in order to create the "right" product.

Who Practices UX Design?

Who practices UX design?

- The design team
- User researcher
- Information architect
- Interaction designer
- Visual designer
- Front-end developer
- Content strategies
- Product manager
- Usability tester
- UX consultant and agencies

Who practices UX design? What startups want?

- Someone who can:

➢Conduct user research

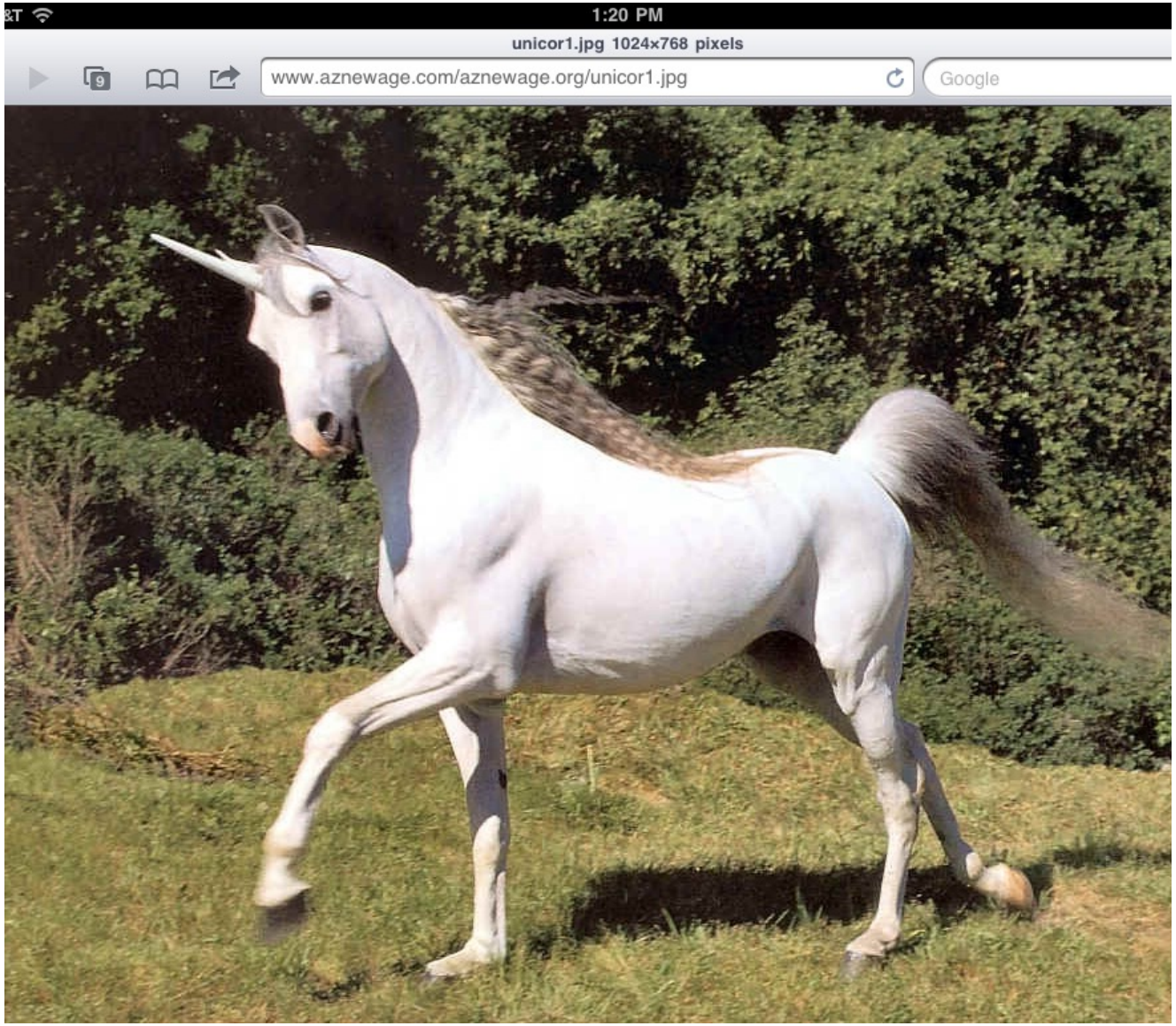
➢Design the workflows

➢Write the copy

➢Cerate hi-fi mockups

➢Write the frontend code

➢Run usability tests



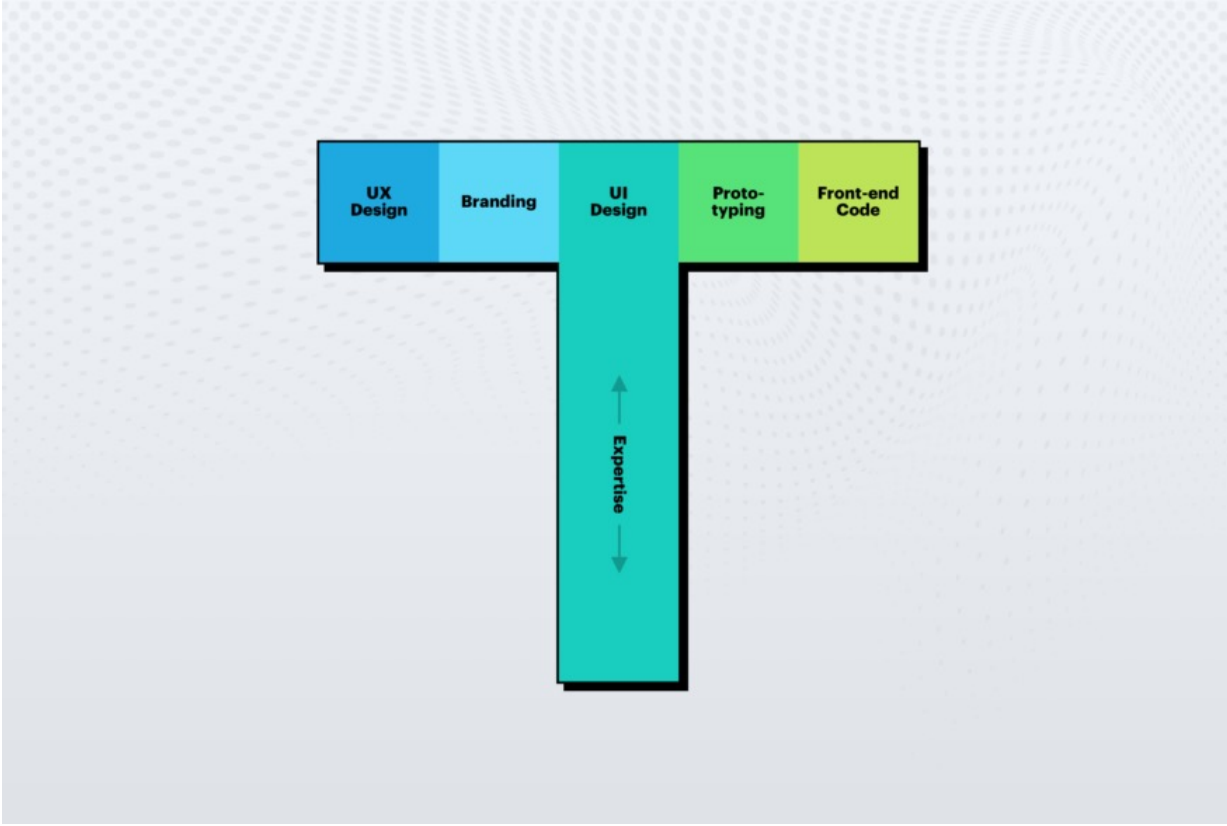
Who practices UX design?

The best UX designers are “T-Shaped”

Have a good understanding of the different components that make up UX

Have general business and design experience

Have deep specialisation in one discipline or industry



https://solowork.co/story/why-designers-need-to-be-specialized-generalists

Summary

- Design thinking
- Lean development
- In practice

Thank you

Question?

Review on the OnTrack Tasks..