

COMP 3647 Human-Al Interaction Design

Topic 12: Prototyping

Prof. Effie L-C Law

An exciting new project



Brainstorming, planning...

Building, crafting...

Perfection...

Everything right...

Having sweated and spent valuable time, money, and recourses; attracting visitors... BUT, no customers.



An exciting new project

What went wrong?

Ideas being executed with an obsession for making a dent in the market, making big changes in society or just completely re-inventing the wheel, only to realise right <u>at the end of their journey</u> that they've been wasting time or focussing on the wrong thing.

Here comes prototyping.

To provide a set of tools and approaches for properly testing and exploring ideas <u>before</u> too many recourses get used.



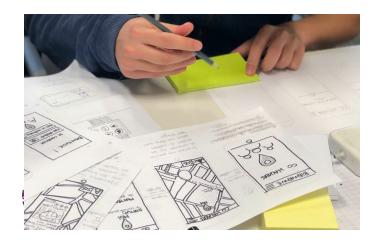
"An early sample, model, or release of a product built to test a concept or process."

An expression of design intent.

- To present designers' designs and see them in action.
- To show intention behind a feature or overall design concept to users

A simulation of the final <u>interaction</u> between users and the interface (digital product).

- Simulations of the entire app or just a single interaction.
- Can be paper drawings, wireframes, mock-ups, web-based.







Main qualities:

Representation

Evolution

Precision

Interactivity



Representation

The prototype itself, i.e., paper & mobile, or HTML & desktop.

Precision

The fidelity of the prototype, i.e., its level of details: low- or high- fidelity.

Interactivity

The functionality open to the user, e.g., fully or partially functional, or view-only.

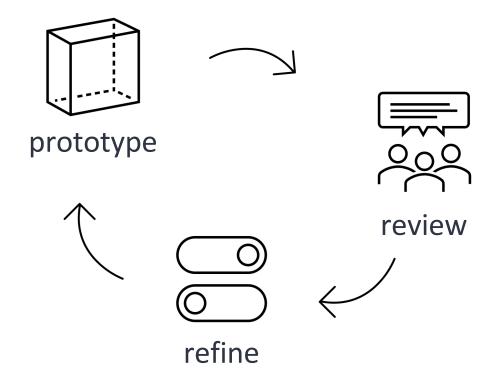
Evolution

The lifecycle of the prototype. Some are built quickly, tested, thrown away, and then replaced with an improved version (a.k.a. "rapid prototyping"). Others may be created and improved upon, ultimately evolving the final product.



It only needs to be done once or twice at the end of the design process. NOT TRUE!

You should prototype every possible iteration of your design – even early basic ideas.





Testable Prototype

A hypothesis / candidate design solution for a specific design problem.

How to test the hypothesis?

The most straightforward way is to watch users work with it.

Different types of prototypes, ranging between any of these pairs of extremes:

single page multipage

realistic & detailed hand-sketched on a piece of paper

interactive static

Choice of prototype vary depending on goals of testing, completeness of design, tools used to create the prototype, resources available to help before & during test.



Interactive vs Static Prototypes

Work needs to be done to bring a prototype to life for usability testing.

To make it respond to user actions we spend time implementing interactions before test, or we "fake" interaction during test.

Interactive prototype

Clickable, time-consuming...

Designer must set a response for each possible user action before test happens.

Static prototype

Responses to user actions are given in real-time during the test by a person who is familiar with the design.



Interactive vs Static Prototypes

Interactive prototype

Several tools (desktop- & web- based)













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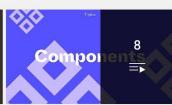
More feature tutorials and tips













Tutorials: Explore design features Tutorials: Prototype while you in Figma

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In the file with customers







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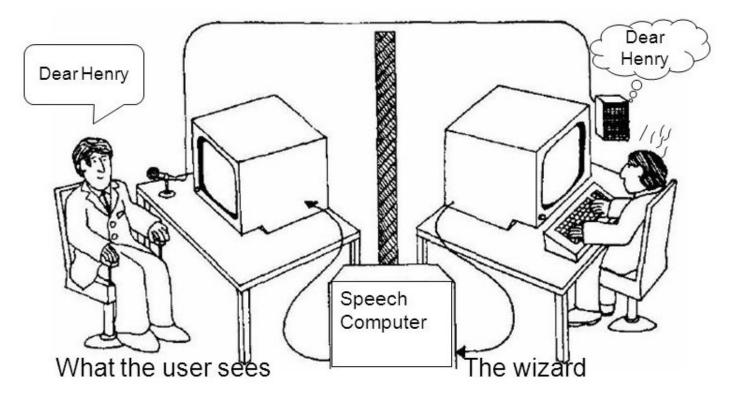
https://www.youtube.com/c/Figmadesign/playlists https://www.figma.com/education/

Interactive vs Static Prototypes

Static prototype

Several methods

Wizard of Oz



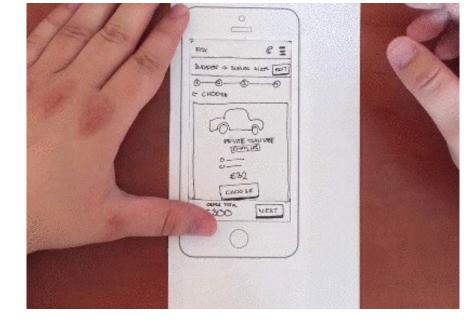


Interactive vs Static Prototypes

Static prototype

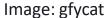
Several methods

Paper-Prototype "Computer"



Simulate scrolling by pulling a long strip of content through the viewport. Image: Csaba Házi







Interactive vs Static Prototypes

Criteria to help you decide which type of prototype is right for your project:





Make a deliberate choice between testing a clickable or static prototype. Guide your choice with these questions.

Time and skills with tools to implement a response for all possible user actions?





Time for multiple dry runs of the task with the prototype?





Time to pilot test the tasks with the prototype and fix all the issues found?





Design settled enough so no changes between test sessions?





Impossible for designer to play the "computer" in all tests?





Flow from screen to screen an important part of the study?





User noticing dynamic changes an important part of the study?











How closely a prototype matches the look-and-feel of the final system.

Can vary in the areas of:

- Visuals
- Content
- Interactivity

May have high / low fidelity in all or some of the above 3 areas.



Low-fidelity (lo-fi) prototyping

A quick and easy way to translate high-level design concepts into tangible and testable artifacts. The first and most important role of lo-fi prototypes is to check and test functionality rather than the visual appearance of the product.

Basic characteristics

Visuals: only some of the visual attributes of the final system are presented

Content: only key elements of the content are included.

Interactivity: the prototype can be simulated by real human during testing session, a particular person who is familiar with design acts as a computer and manually changes the design's state in real-time.



Low-fidelity (lo-fi) prototyping

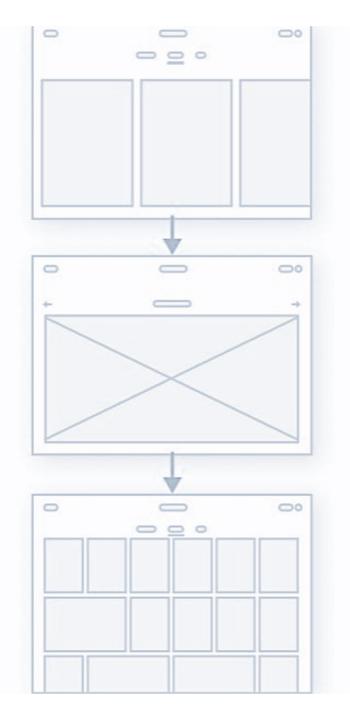
Pros

- Inexpensive
- Fast
- Collaborative
- Clarifying

Cons

- Uncertainty during testing
- Limited interactivity





High-fidelity (hi-fi) prototyping

Appear & function as similar as possible to actual system that will ship. Teams usually create high-fidelity prototypes when they have a solid understanding of what they are going to build and they need to either test it with real users or get final-design approval from stakeholders.

Basic characteristics

Visuals: realistic & detailed design

Content: most or all of the content that will appear in the final design.

Interactivity: highly realistic in their interactions.



High-fidelity (hi-fi) prototyping

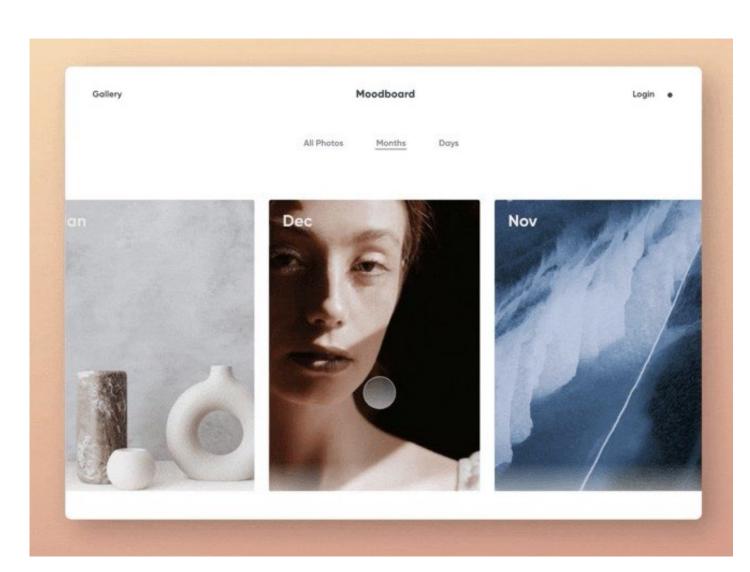
Pros

- Meaningful feedback during usability testing
- Testability of specific UI elements or interactions
- Easy buy-in from clients and stakeholders

Cons

Higher costs

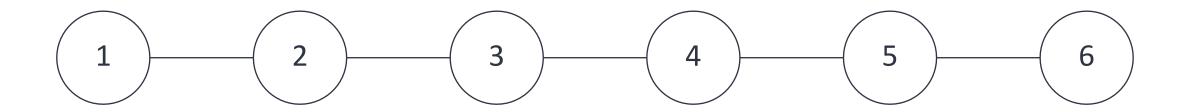




Steps

Steps

How to get started with prototyping



Ask key questions first

Start with the visual side of things

Choose the right kind of prototype

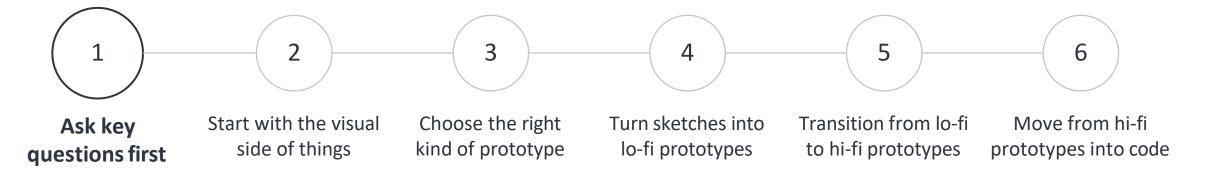
Turn sketches into lo-fi prototypes

Transition from lo-fi to hi-fi prototypes

Move from hi-fi prototypes into code

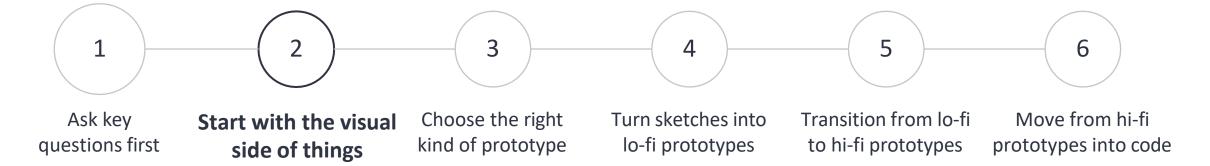


Steps: 1st



- What problem, need, or discovery am I looking to address?
- What is the end goal for the prototype? What are its values and functions?
- Who is the target audience? Are you trying to solve problems for certain users? Who
 are these users, and what are their specific problems?
- What are the desired final deliverables?
- How much time do I have to allocate to this prototype?

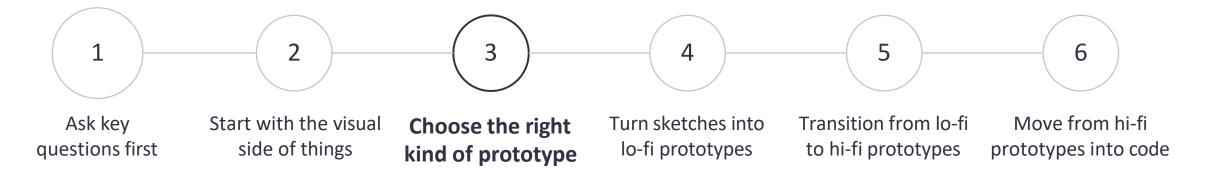
Steps: 2nd



- User flow how users achieve their goals by interacting with the system.
- Info entities how input/output in user flow relate to user behaviour & expectations.
- First sketches sketch out user flow (focus on functionality).
- Rudimentary structure layout content (text, photos, video, etc.) as basic boxes.



Steps: 3rd



- Before creating a prototype, consider key goals and the time & resources available.
- Lo-fi prototypes make sense in early stages, but you will want to move on to hi-fi
 prototypes as you get closer to the final product.



Steps: 4th

How to get started with prototyping

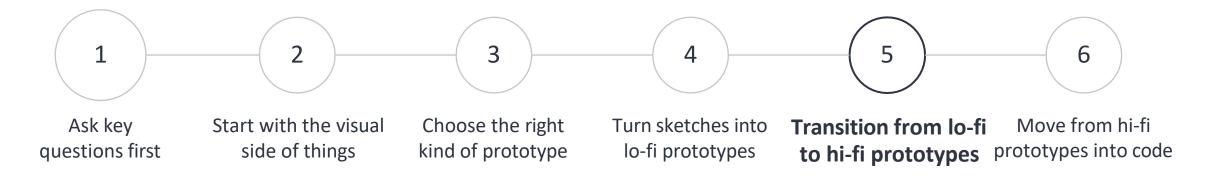


The focus should no longer be on creatively adding all necessary elements –
instead, it should be on effectively organising the structure of the designs and
the assets they include.



Steps: 5th

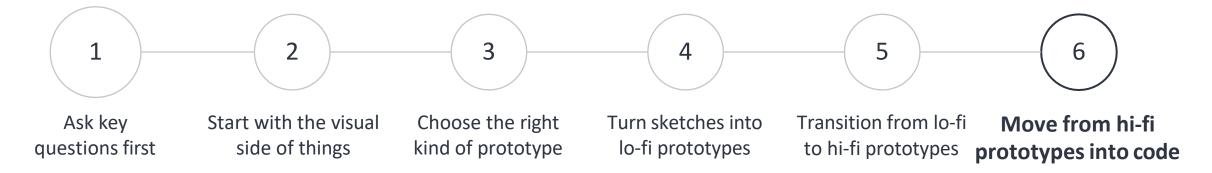
How to get started with prototyping



To provide more detailed feedback – especially regarding usability & interactivity.



Steps: 6th



- Effective prototyping makes life as swift and seamless as possible to coders.
- To provide a clear idea of what the designer want to produce: how it should look, feel, and perform.
- It's then the coder's job to translate this into a fully-fledged system, using the hi-fi prototypes as a point of reference.



References

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Questions?

