Prototyping

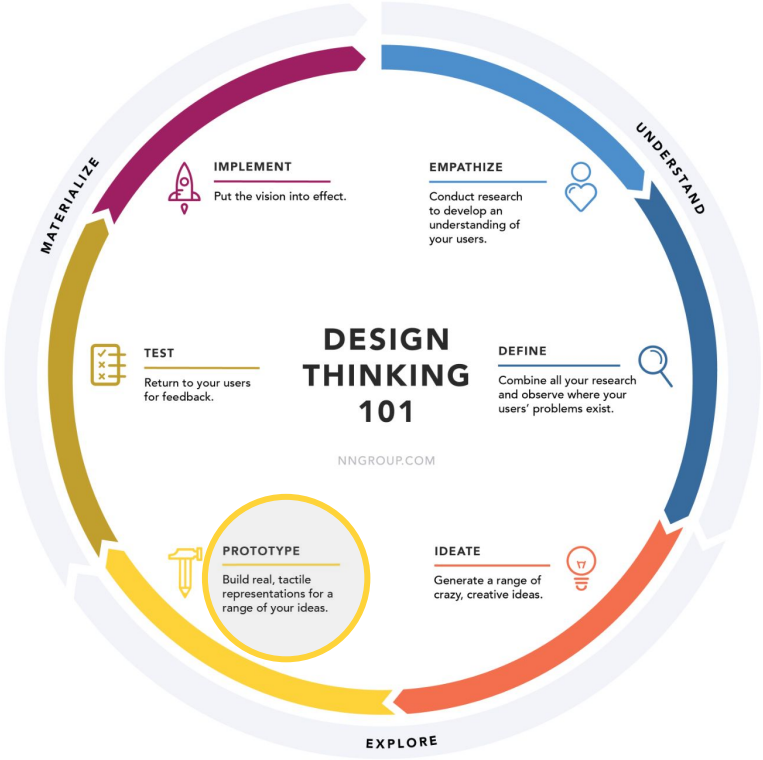
MAD9034

UX Design Process

Prototype

- **Empathize**
- **Define**
- **Design/Ideate**
- **Prototype**

  Experience and explore possible solutions
  - Ideation
  - Interaction design
  - **Prototype**
- **Test**
- Implement + Measure



Source: https://www.nngroup.com/articles/design-thinking/

Prototype

Definition and Goals

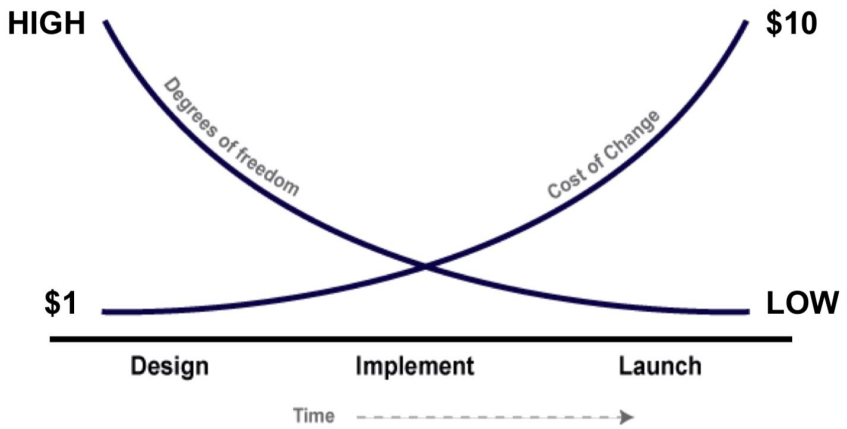
A **prototype** is an early model or sample which is built for the purpose of testing and learning.

Goals

- Test a design hypothesis
- Learn, improve and gain confidence in a product or idea before investing time and money in the implementation

Prototype

Value of prototyping a design hypothesis



based on R. Pressman (2000), *Software Engineering: A Practitioner's Approach*. and Ehrlich and Rohn, *Cost-Justification of Usability Engineering: A Vendor's Perspective*, In Bias & Mayhew (1994) Cost-Justifying Usability.

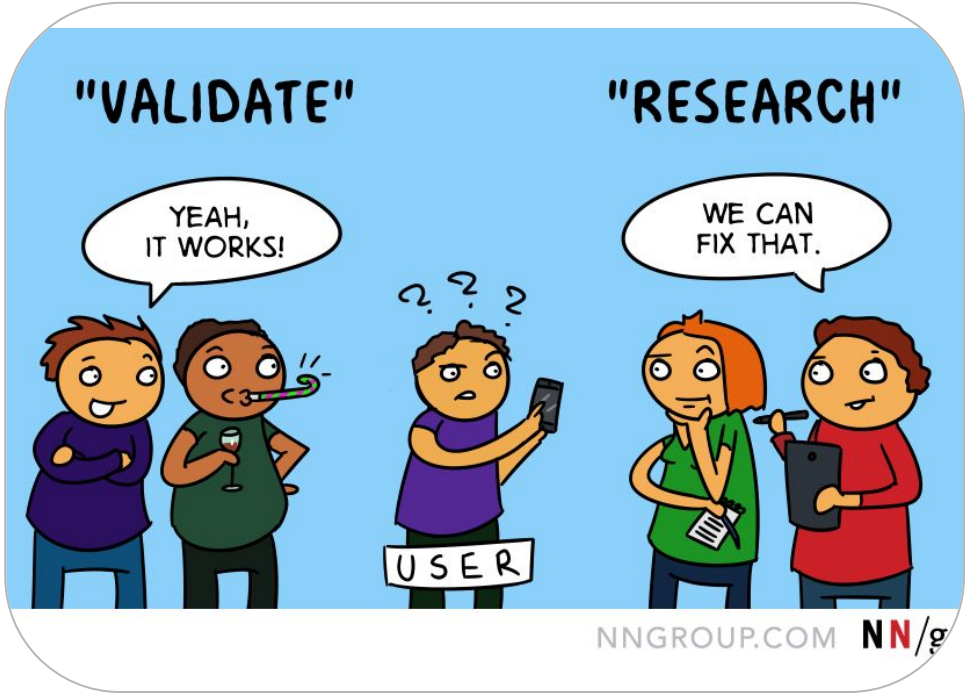
The earlier the changes, the easiest and less costly to make them.

Prototyping

Validate vs. Evaluate

Validating a design introduces a bias towards ‘proving that it’s good’. It may discourage the user to point out issues and your team from seeing flaws or opportunities for improvement.

Replace validate with: test, research, evaluate, examine, study, analyze, watch how people use, see where the design is successful and unsuccessful



Source

Prototype

What might you test with a prototype?

Usability

- Layout
- Affordance or feedback
- Terminology

Functionality

- Ensure users have all the interactive elements they need to perform the task at hand

Navigation

- Ensure users have all the navigation they need to accomplish the task at hand

Alternate designs

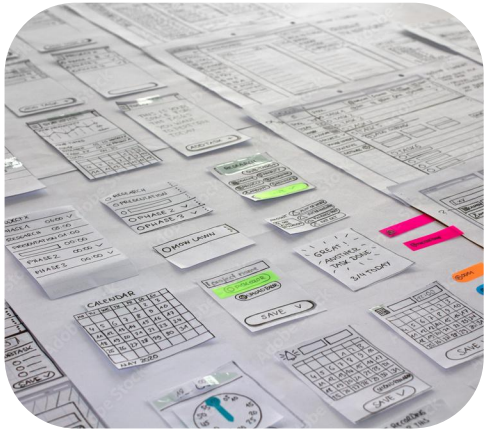
- If there are multiple options for users to accomplish the task at hand, determine which one is most frequently chosen by users

Prototype

Fidelity level

Paper Prototype

Early design stage



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Digital Prototype

Any design stage

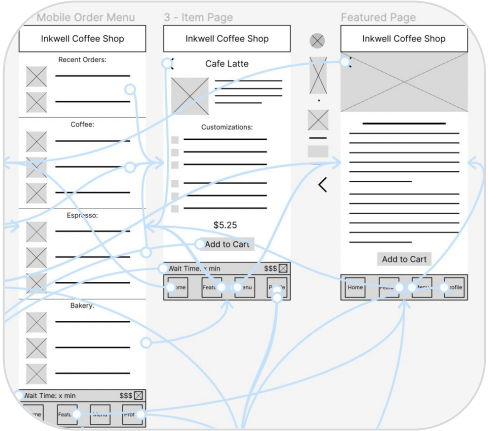
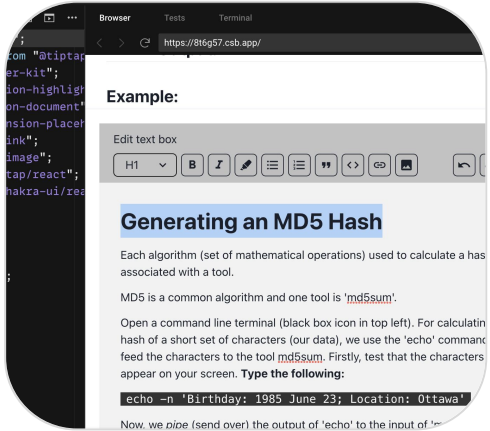


Image: Anthony Pascarella on Figma Community

Dev Prototype

Test complex designs before final implementation



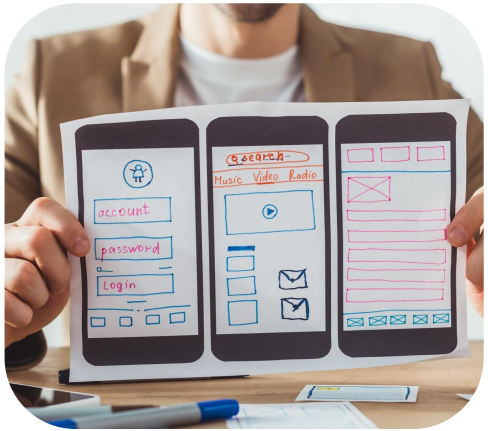
Laura's file

Prototype

Fidelity levels

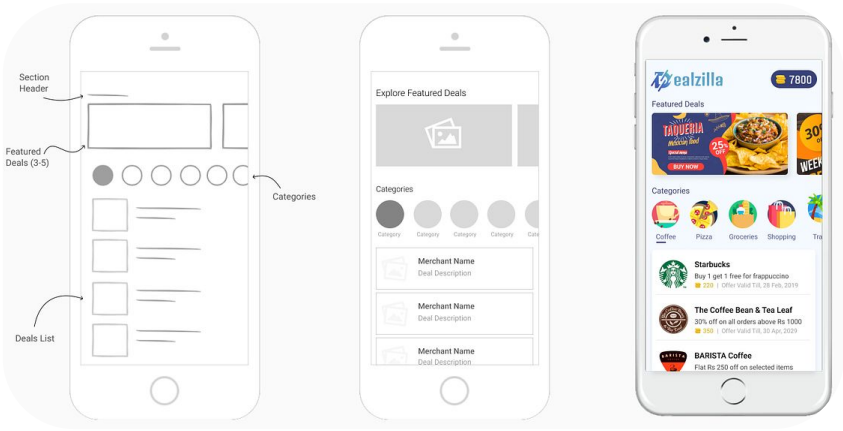
Low Fidelity

Test structure or organization of content



Mid Fidelity

Task flow and navigation



High Fidelity

Test task completion, microinteractions, satisfaction, and sentiment

Image source

Prototype

Fidelity levels

- **Time and budget**
  - Lower-fidelity is fast and inexpensive
- **Focus on the part you want to test**
  - Higher-than-needed fidelity will bring attention to aspects of your prototype that you may not be ready to evaluate. (ex. “I don’t like these colours” or “This image is too big” when you’re trying to validate information architecture or navigation)

UX Prototypes: Low Fidelity vs. High Fidelity

Prototype

Low Fidelity

- **Early** in your process, when you have **many assumptions to test** and major problems to weed out.
- Quick & easy, allowing you to **iterate through many versions quickly**.
- Use to evaluate the team's solution hypothesis.

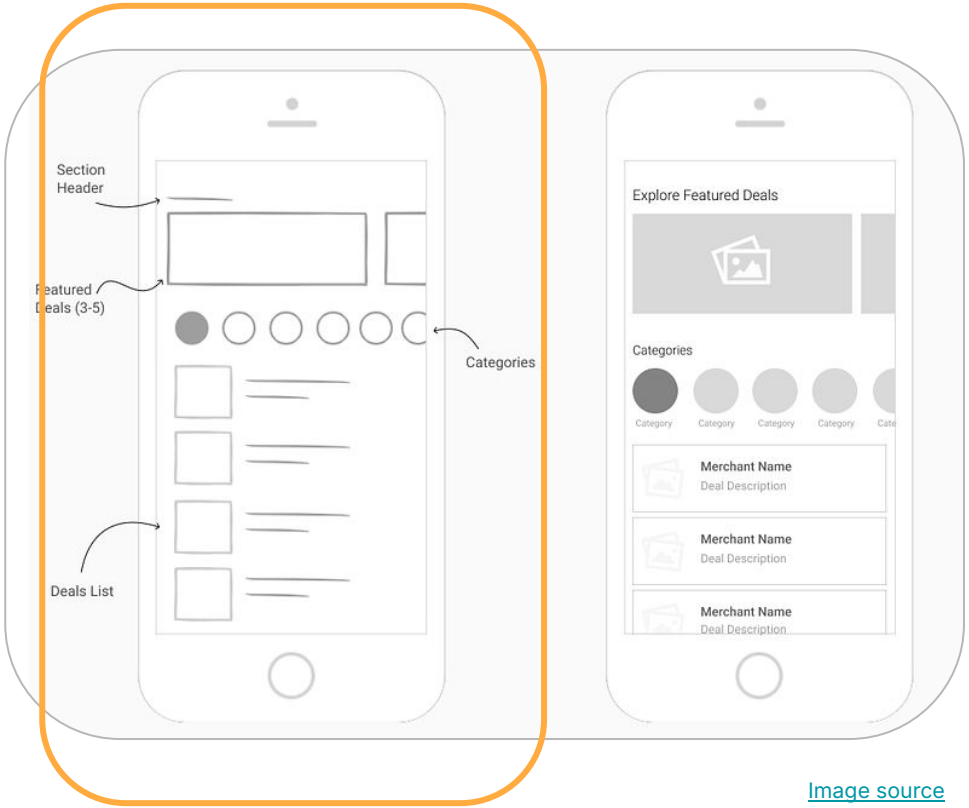


Image source

Prototype

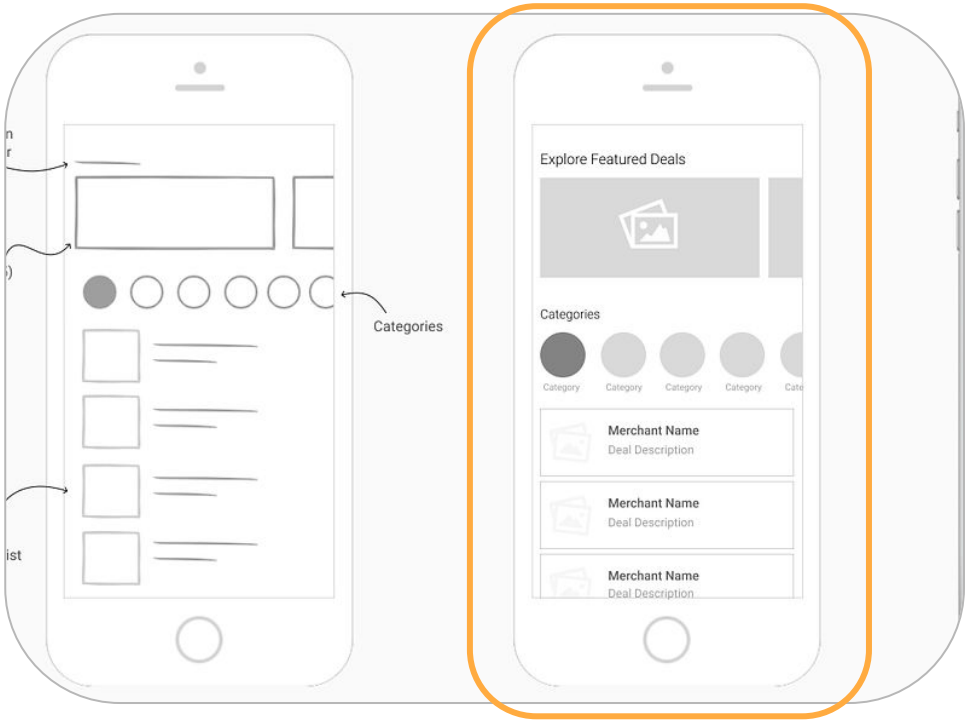
Low Fidelity

- Rough sketches
- Paper models
- Simple storyboards
- Rough paper prototypes
- Rough digital interfaces

Prototype

Mid Fidelity

- When you have **tested and eliminated** most early-stage **problems** and **assumptions** with lower-fidelity prototypes.
- When you move from the **divergent** mode of prototyping towards **refinement** and testing of finer details.
- Allow you to **refine the execution of solutions** while still providing room for changing direction.



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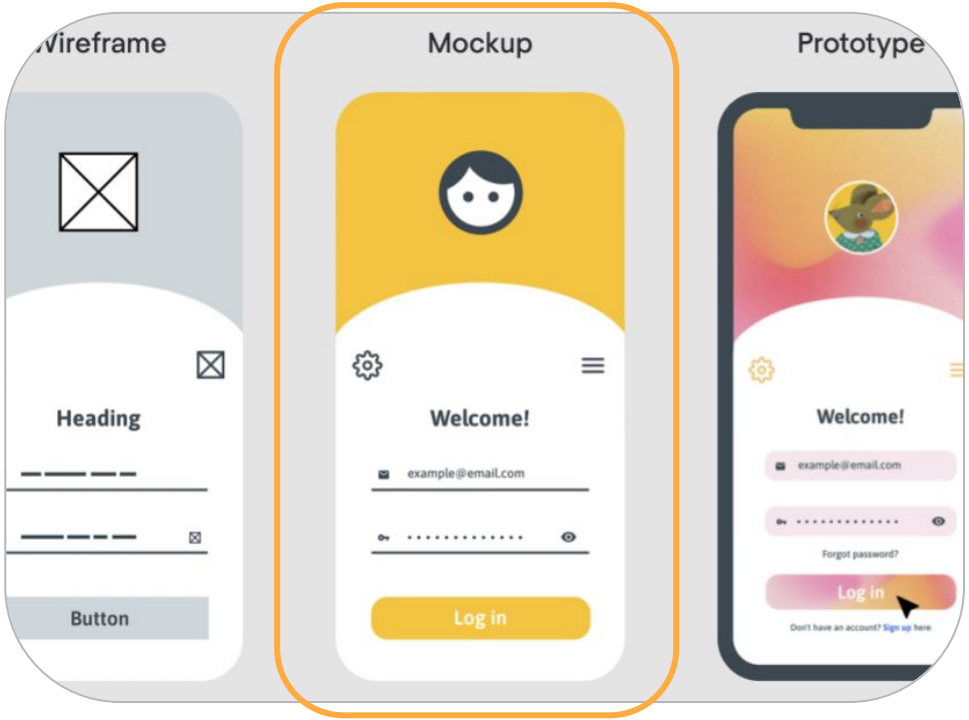
Prototype

Mid Fidelity

- Static wireframes
- Partially-interactive digital interfaces
- Fully-interactive parts of a larger interface or product

Example: Evaluate the efficiency of completing a task, such as filling out a complex form, or searching for a specific item



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Prototype

High Fidelity

- The **last line of testing** before building your actual product.
- A **very close representation** of what the product will look like, and may include **much of the expected functionality**.
- Use to **test the closest representation** of your solution **before investing** significant resources.

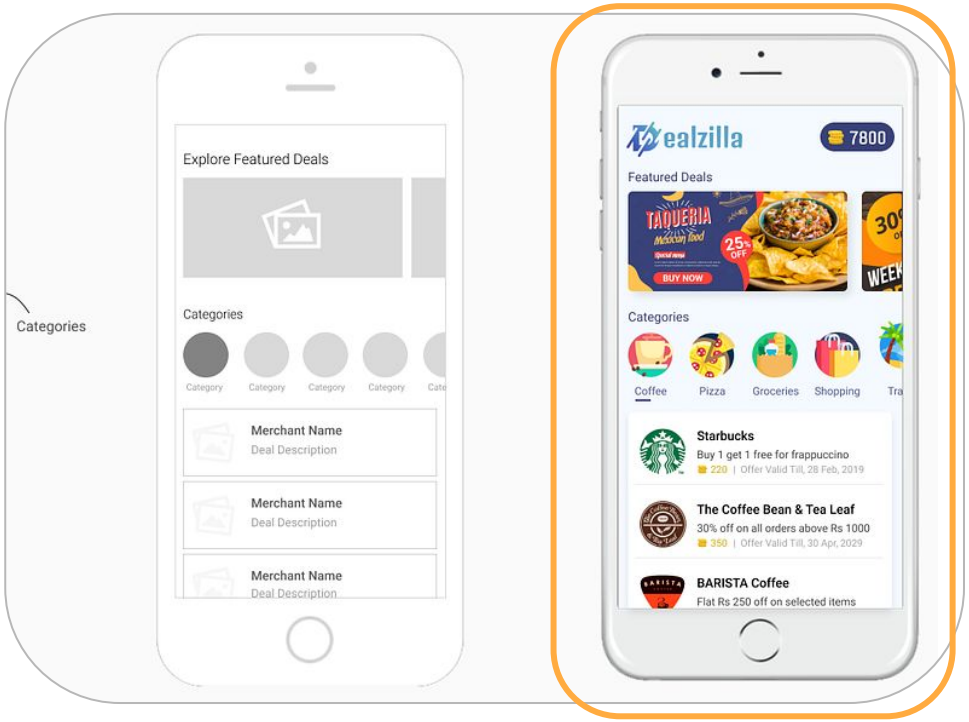
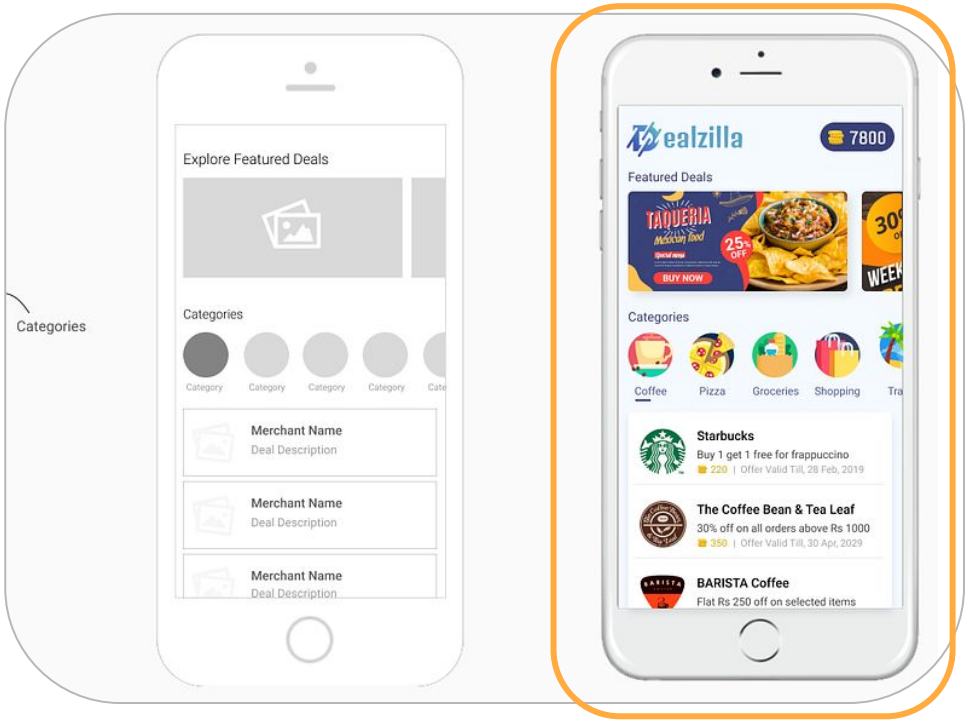


Image source

Prototype

High Fidelity

- Pixel-perfect static screens, strung together to simulate real interaction
- Real working code, with some ‘smoke and mirrors’ to simulate the real product
- Real content
- Real visual design
- Interactivity



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Prototype

Fidelity levels

Do I need a prototype for each fidelity level?

It depends...each prototype should have a purpose and it should answer a real question your team has.

Low Fidelity

It's likely that any project has assumptions or unanswered questions. **Always** test your general solution/direction.

Mid Fidelity

Identify specific questions to answer about the execution of your chosen solution such as **specific interaction methods**, or **workflows through key tasks**.

High Fidelity

Use when questions remain which can be answered more easily with a prototype than by planning to build the final product & refine.

Prototype

Tools

Figma

UXPin

InVision

Protopie

Sketch

Adobe XD

Axure

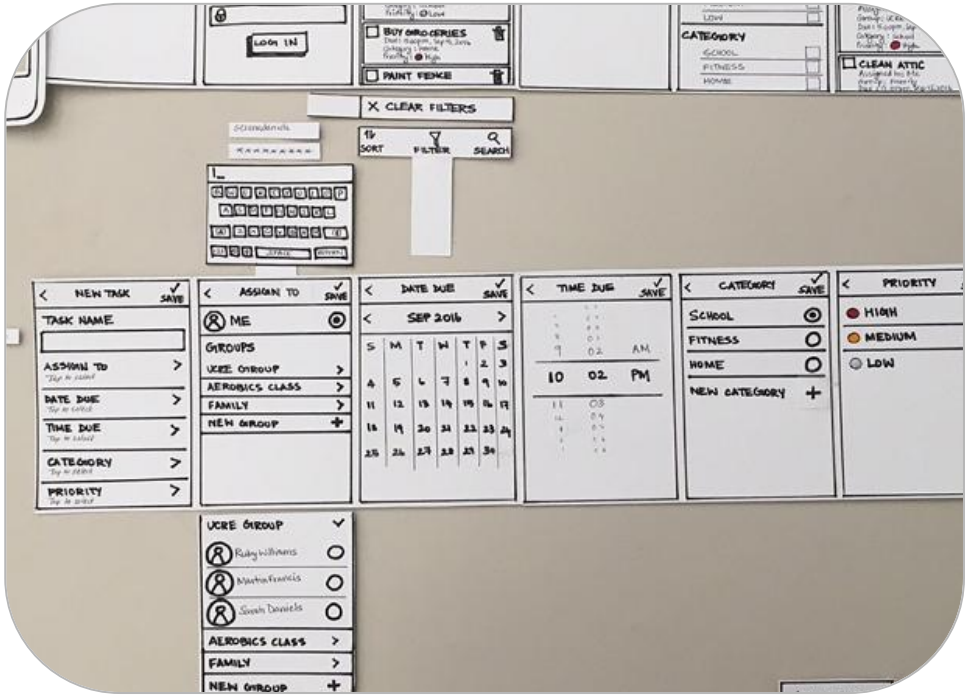
Balsamiq

Low Fidelity Prototype

Major project: Week 5 of 9

Low-Fidelity Prototype

“Paper Prototyping
is a technique that consists of creating hand drawings of user interfaces in order to enable them to be rapidly designed, simulated and tested."



Low Fidelity Prototype

Both **paper** and **low fidelity digital prototypes** have the same purpose:

- Rapid way to communicate concepts
- Early usability testing technique
- Inexpensive
- Quick
- Easy to create and modify
- Collaborative
- Avoids distraction with superficial detail
- Focuses on workflow, layout and navigation

Low Fidelity Prototype

Assignment Recap

A **low fidelity paper, or digital prototype** with the goal **to test** your design concept. To test successfully, your participants need to be able to:

- **Search** and **Browse**
- Navigate to a screen to **perform a specific task**
- **Switch** from the first task to another task
- **Complete a task** and deciding **where to go next**

Test-Ready Low-Fidelity Prototype

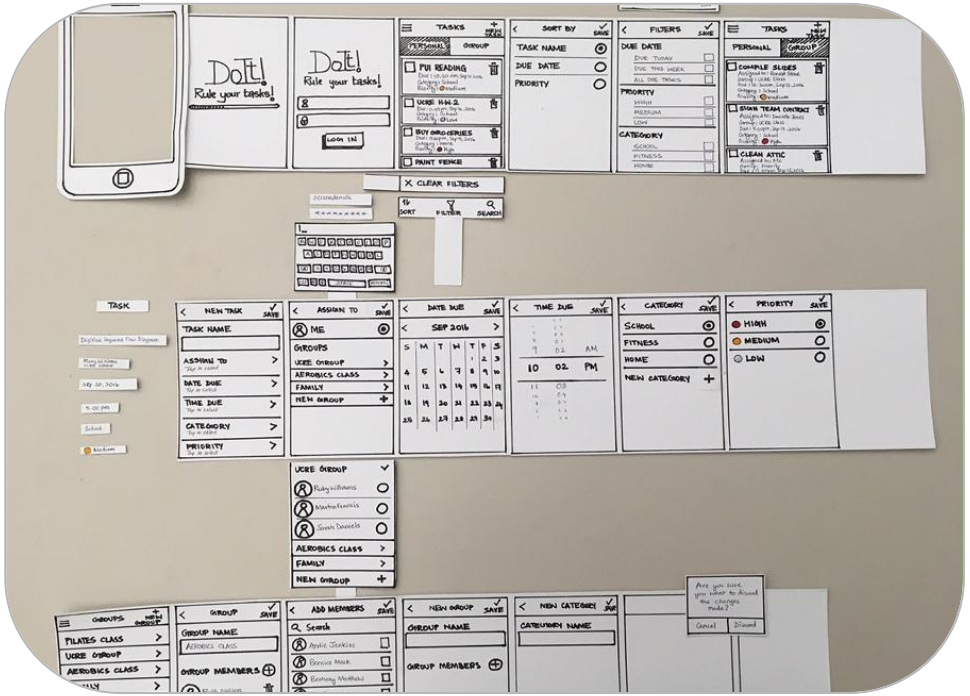
Low Fidelity Prototype

Assignment Recap

Prototype fidelity

No interactivity

Enough realistic content and controls for users to point to elements and tell you what they understand and how they might interact with it



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Today, in class

Wireframe initial concepts

Review the requirements 5 mins	• Make sure you understand the assignment requirements before you start the work.
Decide what your prototype will test 30 mins	**Scenario from week 7 must be part of the prototype!** • **Search** and **Browse** - how? • **Task 1** - decide which task • Switch to **task 2** - decide which task • **Complete** one task - decide which task • **Navigate** somewhere else - decide where
List of the required screens 15 mins	• List of all the screens, their states, and the order in which they will appear
Decide on the concept to prototype and refine it 15-20 mins	• Select the wireframe concept from last week that you'll be using in your prototype
Create your prototype and test script Remainder of the class	• Create all the individual screens required for your prototype to be tested • Document the prompts you give to participants while they test your prototype

Decide what your prototype will test

(30 minutes)

- Your scenario from week 7 must be part of what your prototype tests
- Consider what else you might want to test with your paper prototype
  - The content on a specific screen?
  - A proposed navigation model?
  - How much detail is surfaced at various stages?
- Search/Browse > Task 1 > switch to Task 2 > complete one task > navigate somewhere else

Identify and list the required screens

(15 minutes)

- Create (or refer back to) a **user flow** that will take users to the necessary steps & screens to validate all the items you want to test
- Identify all the different screens
- Identify which screens may need to have multiple states (example: initial state, filtered view, expanded detail, etc)
- **List of all the screens, their states, and the order in which they will appear**

Decide on and refine the concepts

(15-20 minutes)

- Look at all the wireframes you created last week
- Select the concepts that you'll be using in your prototype
- Make any necessary refinements to ensure they work together (ex., if you're merging 2 concepts, etc.)

Create your prototype and test script

Remainder of the class

Starting with the entry point...

- Create all the individual screens required for your prototype
- Ensure that persistent elements are consistent between screens (header bars, navigation, etc)
- Ensure that you put in realistic content **(not lorem ipsum!)** so your participants can actually engage with the app
- It doesn't have to be perfect, but be neat, and pay attention to details
- Document the prompts to give to your participants to test your prototype and follow-up questions.

A Cheatsheet for User Interviews and Follow-up Questions

Coming up

Concept Testing

Bring your paper prototype to next class to test it

Mandatory

1. If you used a paper prototype, add a photo to Figma > save it as a PDF and submit to Brightspace!
2. **Bring your paper prototype to next class to test it!!!**