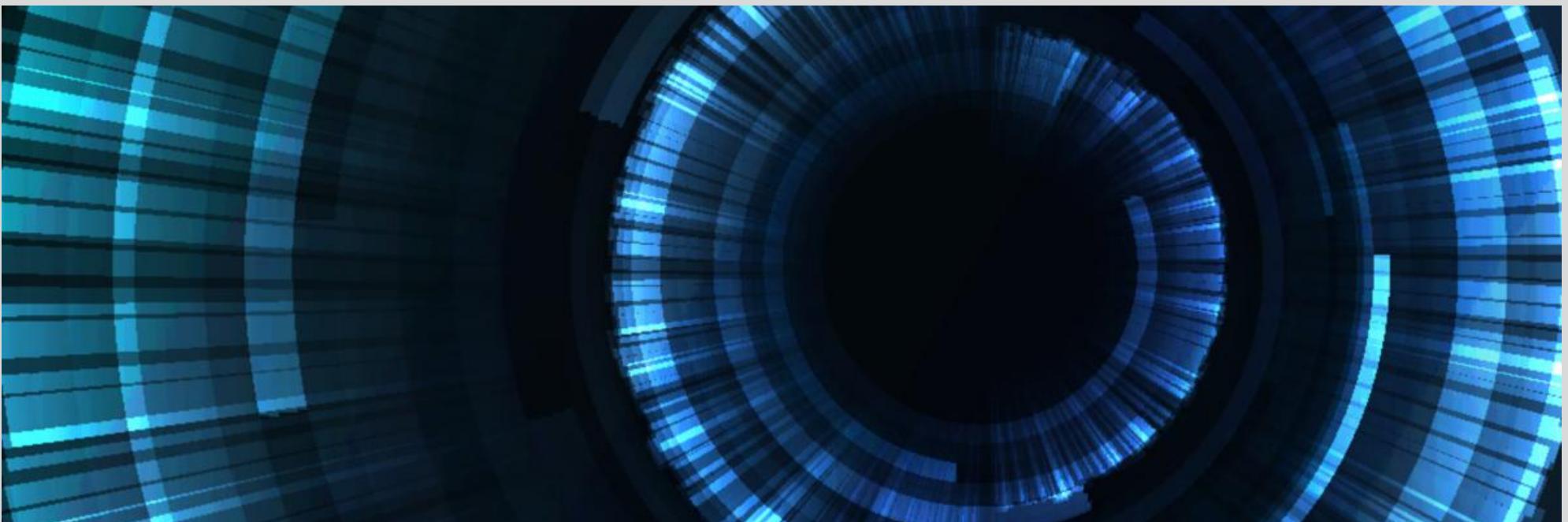


Human Computer Interaction



Original PPT: Dr Grace Eden
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Presented by Dr Indrani De Parker
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Schedule

This Week Monday 7th March

Information Architecture

Activities

[Information Architecture](#) (Due Mar 12)

Create a map that shows how a user would navigate through your system.

Create ONE group Information Architecture for your system.

Create ONE task flow that supports a user goal from the start-to-end of a single task.

This Week Wednesday 9th March

Prototyping Techniques – Low Fidelity Prototype

Activities

[Low Fidelity Prototype](#) (Due Mar 19)

Sketch a user interface (UI) workflow for your technology

This Week– 07 & 09 March

Monday 07 March

TEAMS - 3, 24, 30

Wednesday 09 March

TEAMS- 16, 27, 40, 5

Wednesday 09 March

QUIZ – 3

Next Week– 14 & 16 March

Monday 14 March

TEAMS- 10, 19, 33

Wednesday 16 March

TEAMS - 21, 29, 42

Agenda – 09 March



> Prototyping Techniques –Low Fidelity >

> 10 minutes each team – Groups 16, 27, 40 (And 05 after Class) >

> Quiz – 3

Prototyping Techniques

Goals of this session

- **Prototyping Techniques**
 - User interfaces
 - Interface design
 - Horizontal & Vertical prototypes
 - Low, Medium, & High fidelity prototypes

Design: conceptual & concrete

- **Conceptual**

- Creating a conceptual model that captures what the product will do and how it will behave

- **Concrete**

- Details of a design such as menu structures, layout, and graphics

User Interface: definition

- **The space where interactions between humans and machines occur**
 - text, icons, audio, gesture, gaze, etc.
 - e.g – on screen, Alexa, Siri, metro announcements, VR - gestures of hands, gaze of eyes, etc.
- **The goal of the interaction is to enable effective operation and control of a machine by a human**
 - the machine provides feedback to users in making decisions and accomplishing goals
 - e.g – paradigm shift - testing after execution to iterative testing at low cost before execution

User Interface: example

The screenshot shows the homepage of the Indraprastha Institute of Information Technology (IIIT) Delhi website. The header features the IIIT logo and the text "INDRAPRASTHA INSTITUTE of INFORMATION TECHNOLOGY DELHI". Social media links for LinkedIn, Facebook, Twitter, Google+, and Instagram are present, along with a search bar and links to Library, Career, Directory, Internal links, and Webmail. The main banner image shows a group of graduates in caps and gowns, with text overlay: "Applications are invited for Ph.D. Admission AY 2020-21". Below the banner, there are three columns: "News", "Recent Publications", and "Important Links".

News

Research Group from CB department is working on [corona virus](#) to facilitate scientific community to fight against this deadly virus.

Research story of ECE department got selected as one of the Best Popular Science Stories by [DST AWSAR](#)

Prof. Richa Singh and Prof. Mayank Vatsa,

Recent Publications

Mrinmoy Chakrabarty, Makoto Wada "Perceptual effects of fast and automatic visual ensemble statistics from faces in individuals with typical development and autism spectrum conditions", in Scientific Reports, February 2020 [Nature Publishing Group]

[See All](#)

Important Links

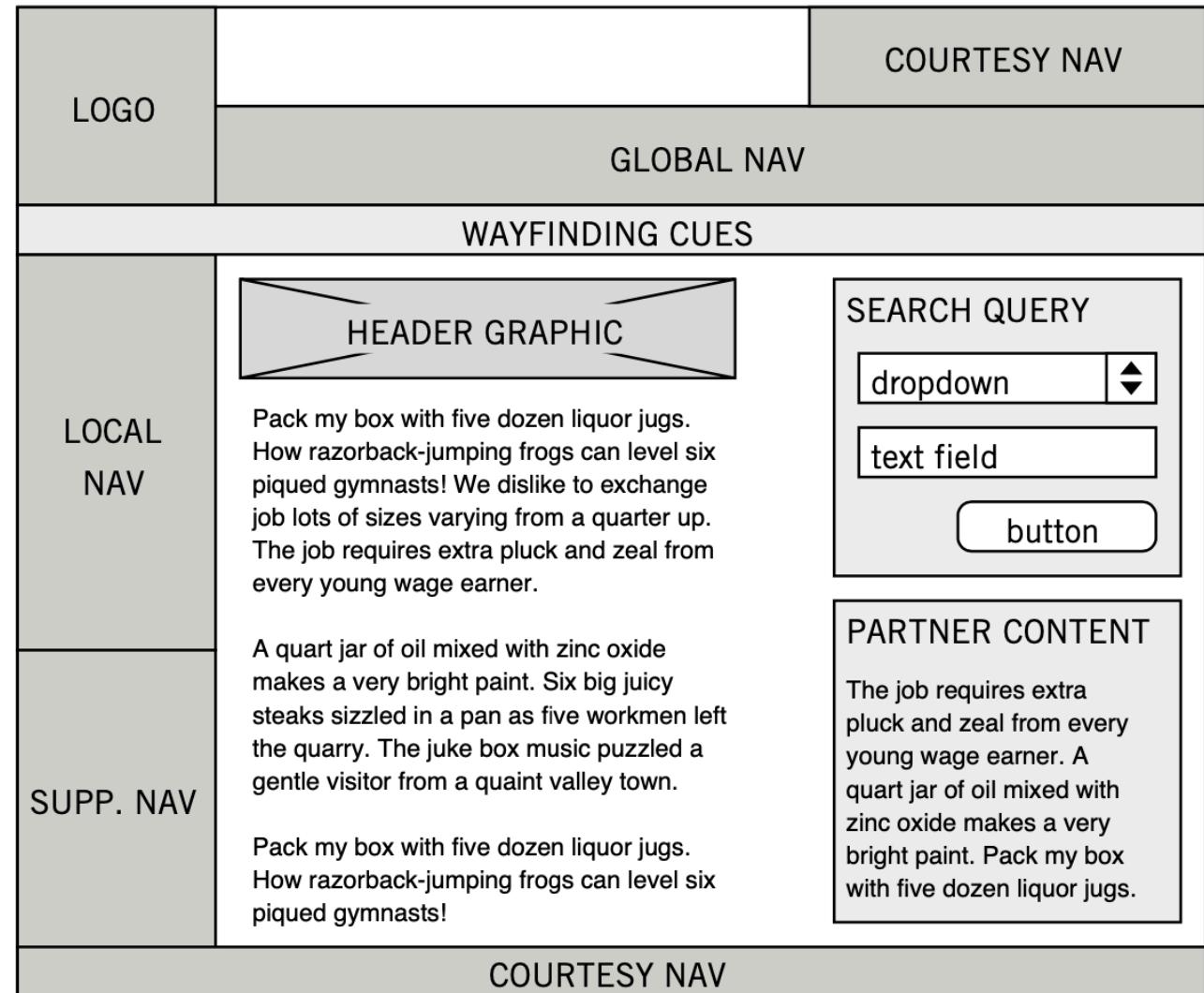
[Advisory on COVID 19](#)
[Summer Internship at IIIT-D 2020](#)
[Tenure Track Faculty Position](#)
[ARIIA - Rankings 2020](#)
[NIRF - India Rankings](#)
[Guidelines and Terms & conditions for](#)

Interface Design: definition

- Presenting and arranging interface elements to enable users to interact with the functionality of the system
- Selecting the right interface elements for the task
 - E.g. textboxes, radio buttons, checkboxes, action buttons
- Arranging them on the screen in a way that is easy to understand and use
 - Navigation design (global, local, supplementary)
- The functions that should appear on each screen
 - Tasks often stretch across several screens, each containing a different set of interface elements
 - e.g Payment Process – Contact Details & Address, Payment Method, Payment Confirmation)

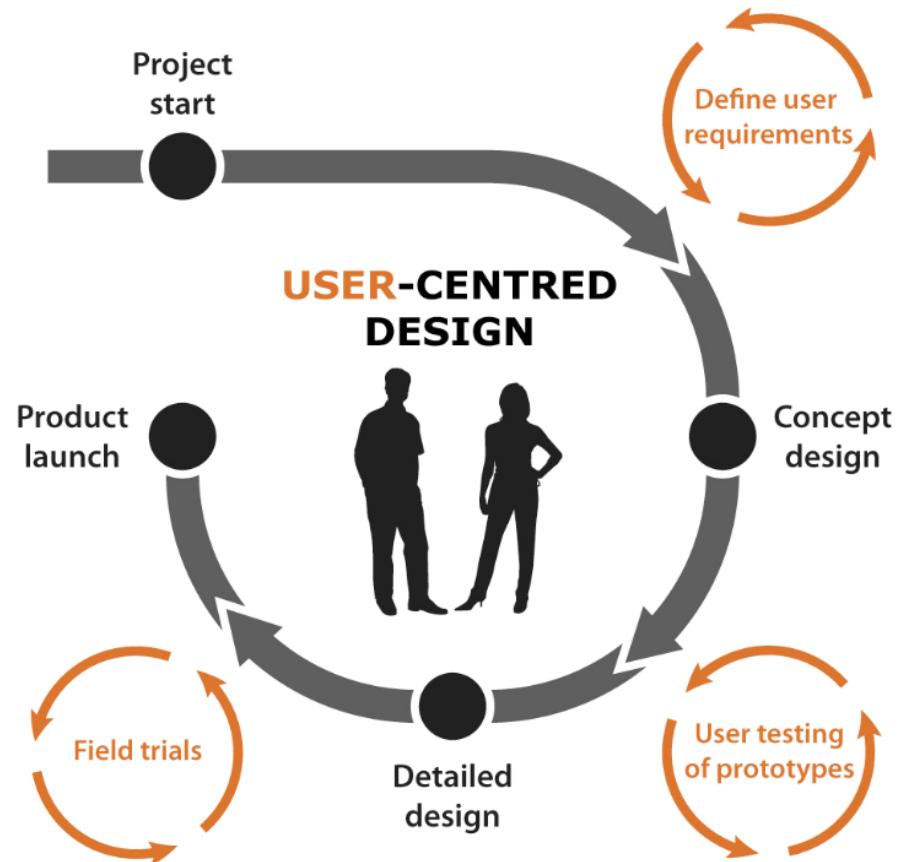
Interface Design: elements

- The visual presentation of information on a screen
- How interactions will be displayed
- How users will navigate
- How content will be presented



Interface Design: Process

- Establishing requirements
- Developing alternatives
- Prototyping
- Evaluating



Prototype: types

- Series of screen sketches
- PowerPoint slide show
- Video simulating the use of a system
- Paper mock-up
- Software with limited functionality
- Sensors, displays, wires and switches

Prototype: characteristics

- **Representation:** A prototype is a rudimentary representation of the actual product. It represents how the product will look and/or work like
- **Precision:** More precise the prototype, better the response and feedback
- **Functional:** A good prototype performs the basic functions of the actual product (if possible)
- **Improviable:** A good prototype is one which can be easily changed

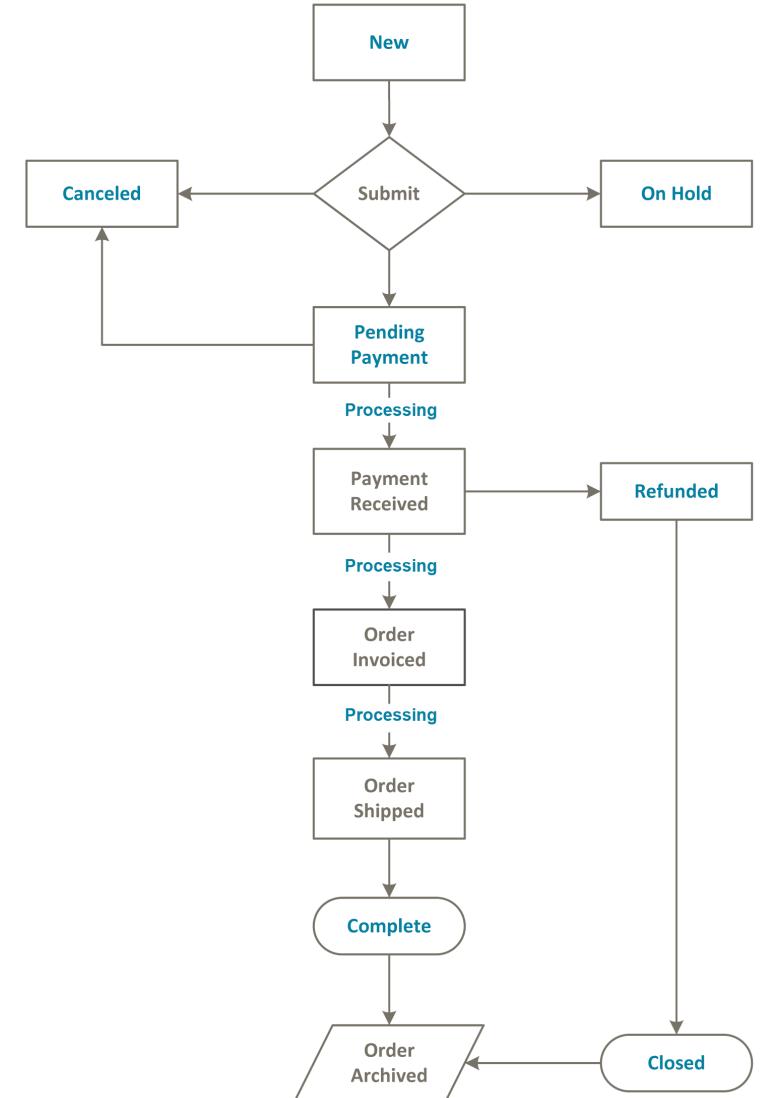
Low Fidelity Prototype > Medium Fidelity Prototype > High Fidelity Prototype

Prototype: purpose

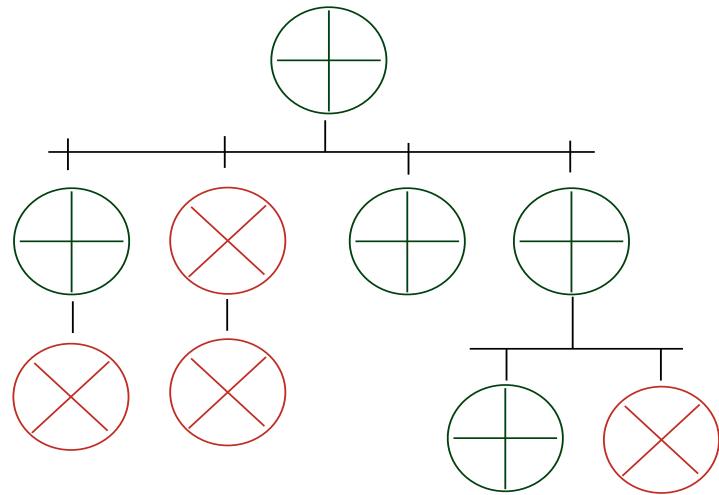
- Evaluation and feedback are key to interaction design
- Stakeholders can see, hold, interact with a prototype more easily than a document or a drawing
- Team members can communicate effectively about it
- You can test out ideas for yourself
- It encourages reflection: very important aspect of design
- Prototypes answer questions, and support designers in choosing between alternatives
- Low cost – test experiences/ideas without implementing them

Prototype: what

- Work flow, task design
- Screen layouts and information display
- Difficult, controversial, critical areas



Prototype: horizontal & vertical

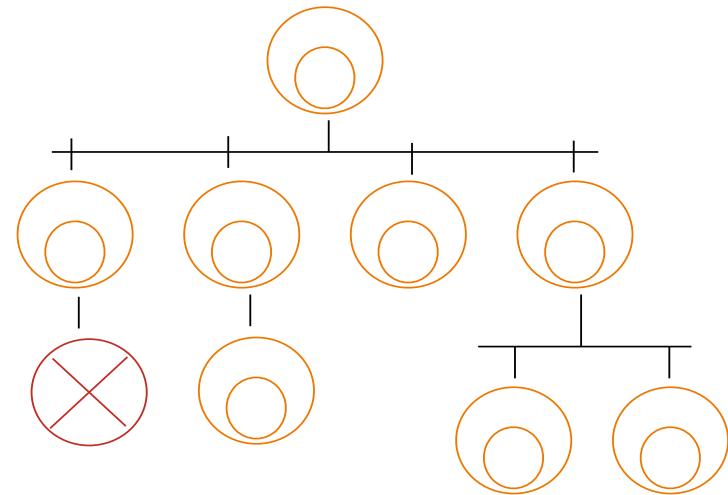


Vertical prototyping

A **vertical** prototype is a prototype where **a few selected functions** are implemented in such detail that realistic data can be processed, i.e. a realistic work task can be performed with a vertical prototype.

Key:

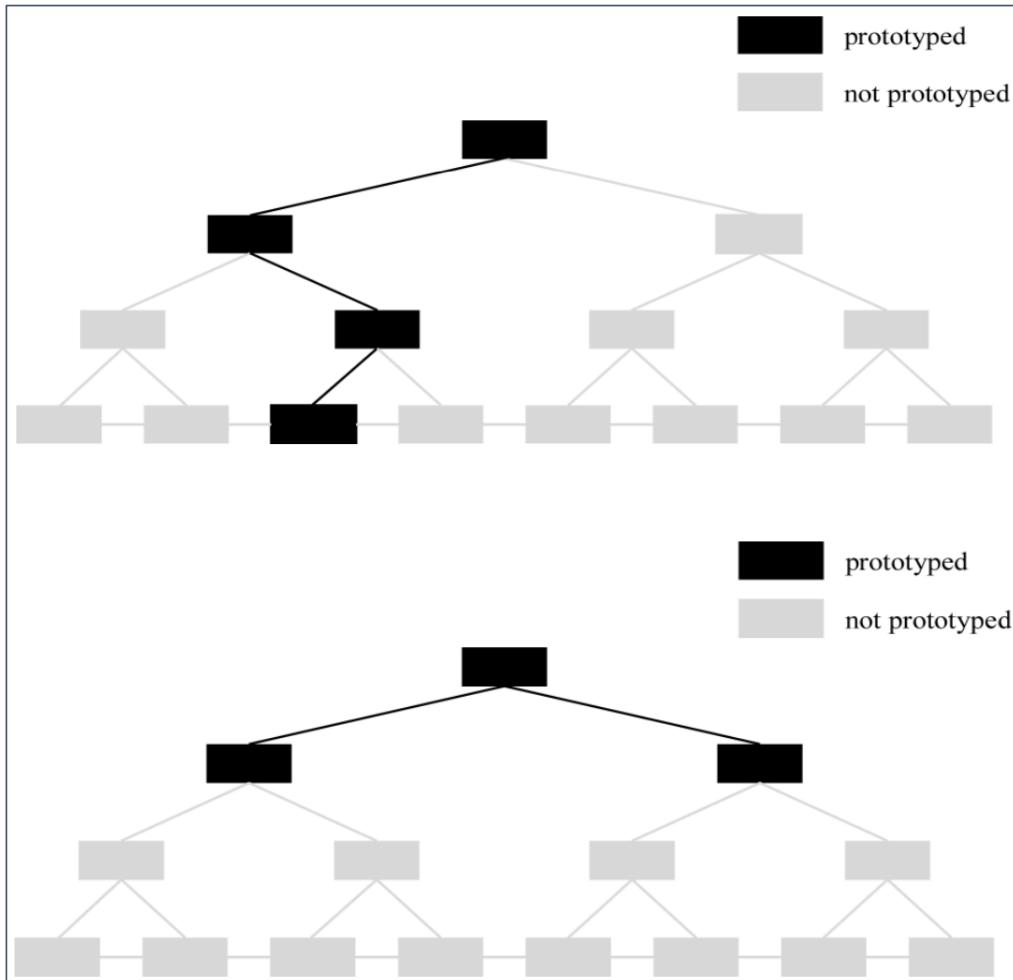
- Fully implemented
- Partially implemented
- Not implemented



Horizontal prototyping

A **horizontal** prototype is a prototype, where all the visual parts of the **user interface** of a new computer system is implemented, i.e. screen dialogues and their interconnections can be demonstrated, but no data can be processed.

Prototype: horizontal & vertical



- **Vertical - “Deep” prototyping**
 - Show only portion of interface, but large amount of those portions
- **Horizontal - “Broad” prototyping**
 - Show much of the interface, but in a shallow manner

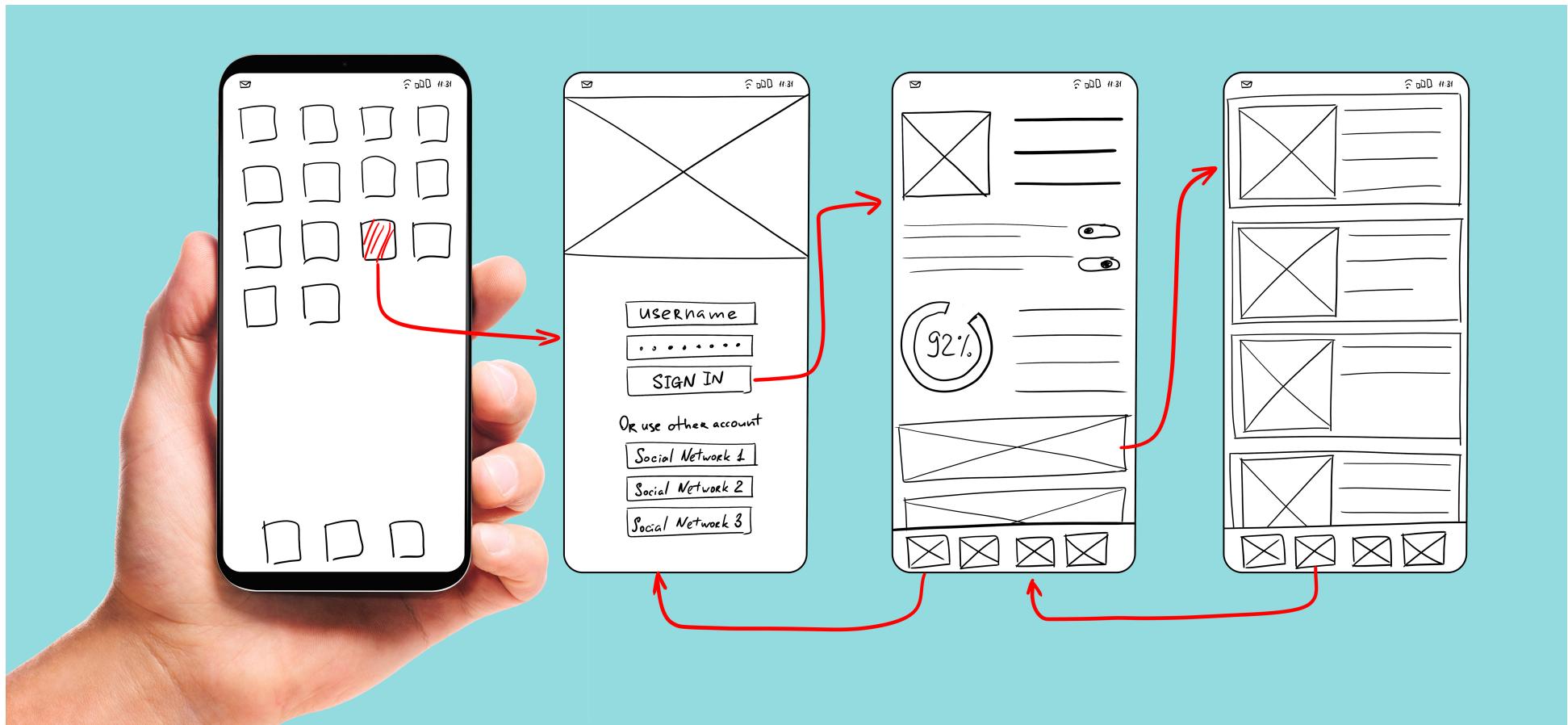
Prototype: types

- **Low fidelity**
 - low cost, rough and quick to build and quick, cheap and easily changed
- **Medium fidelity**
 - slightly more detailed, still rough but closer to the solution
- **High fidelity**
 - much closer to final, very detailed and much more time-consuming

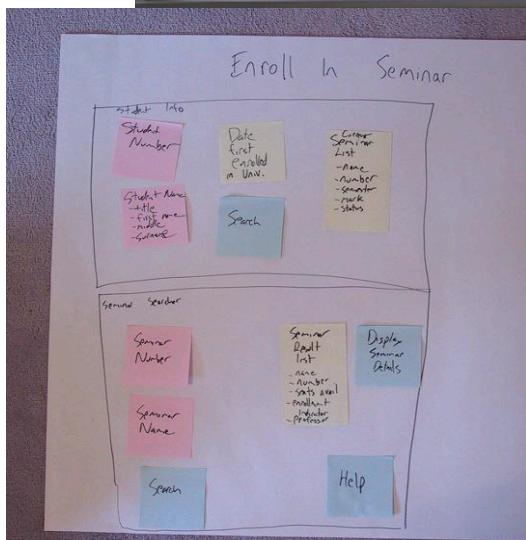
Prototype: low-fidelity (sketches)

- Uses a medium which is unlike the final medium, e.g. paper, cardboard
- Is quick, cheap and easily changed
- Examples:
 - sketches of screens,
 - ‘post-it’ notes
 - storyboards, task sequences

Prototype: low-fidelity (sketches)



Prototype: low-fidelity (sketches)



Storyboarding

< Screen Functionality >

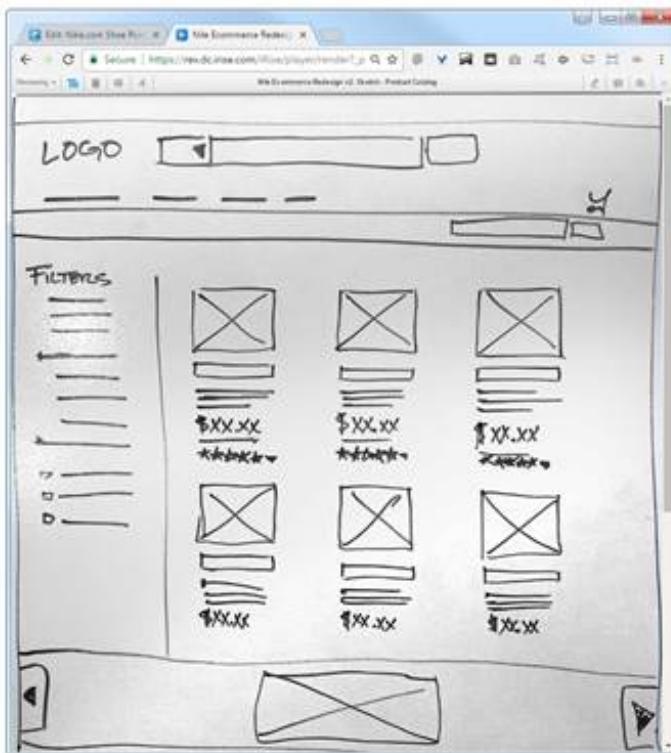
Screen Layout >

Seminar	Term	Secs Avail	Professor
CSC 100 Intro to CS	Fall 2003	A+	Smith, J.
CSC 200 Intro to AM	Fall 2003	A	Perry, S.
CSC 303 Advanced AM	Spring 2004	-	Jones, S., Johnson, M.

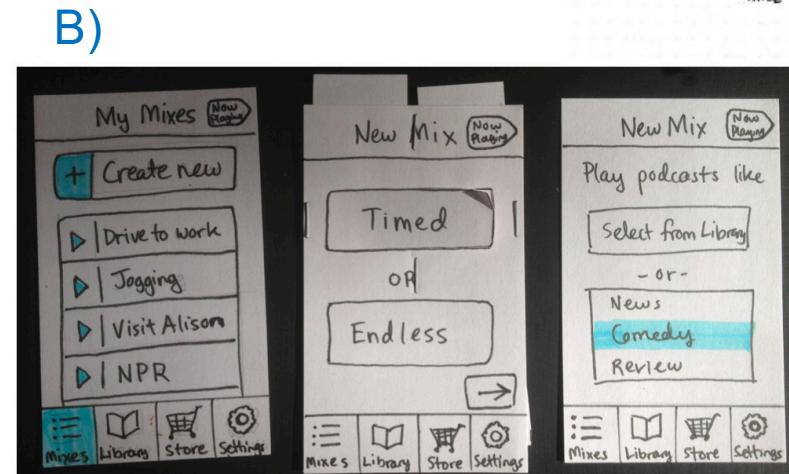
Course description:
CSC 310 Agile Database Technologies
This course describes evolutionary development strategies for data-oriented development. See www.agiledb.org for details.

This course currently has 39 people waitlisted for it.

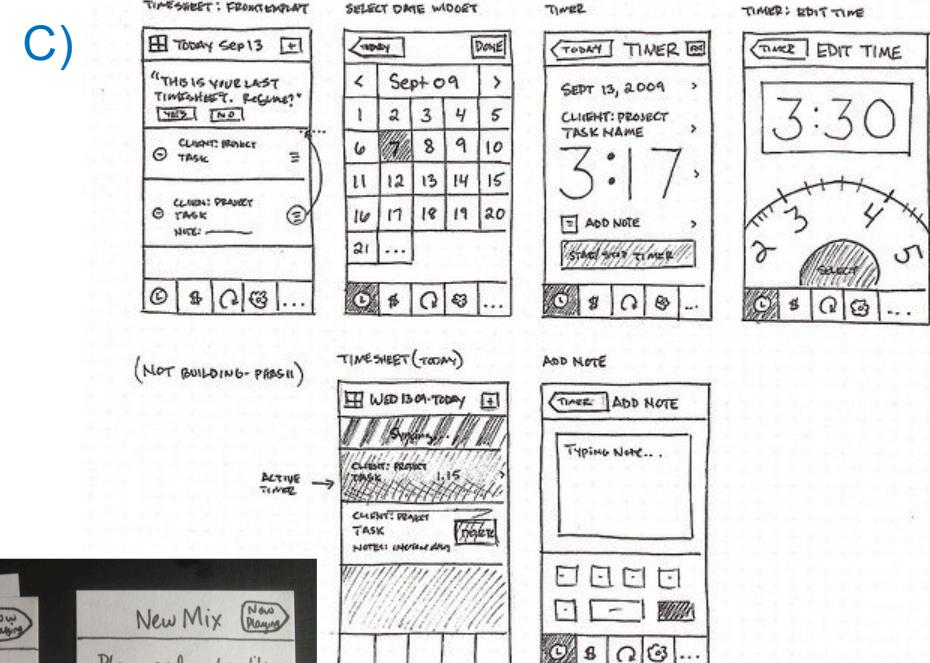
Prototype: paper (sketches)



A)

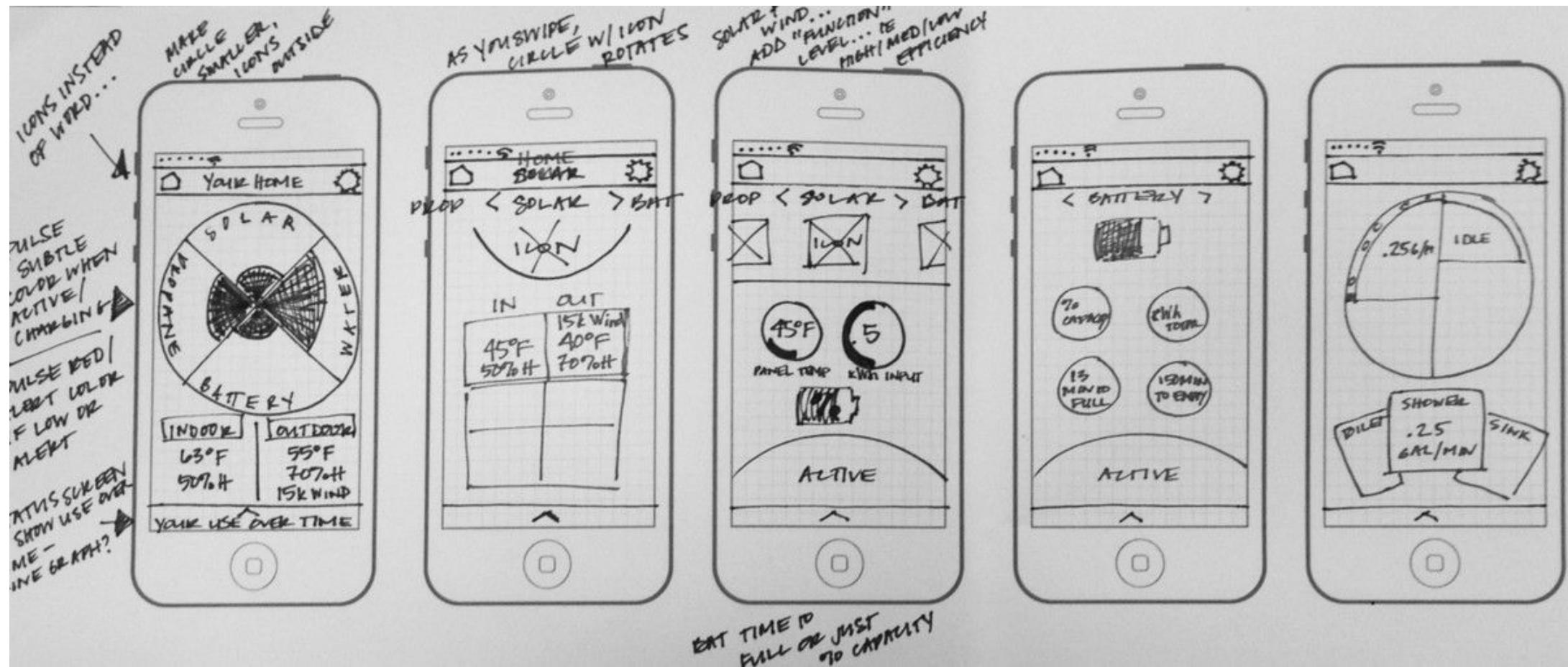


B)

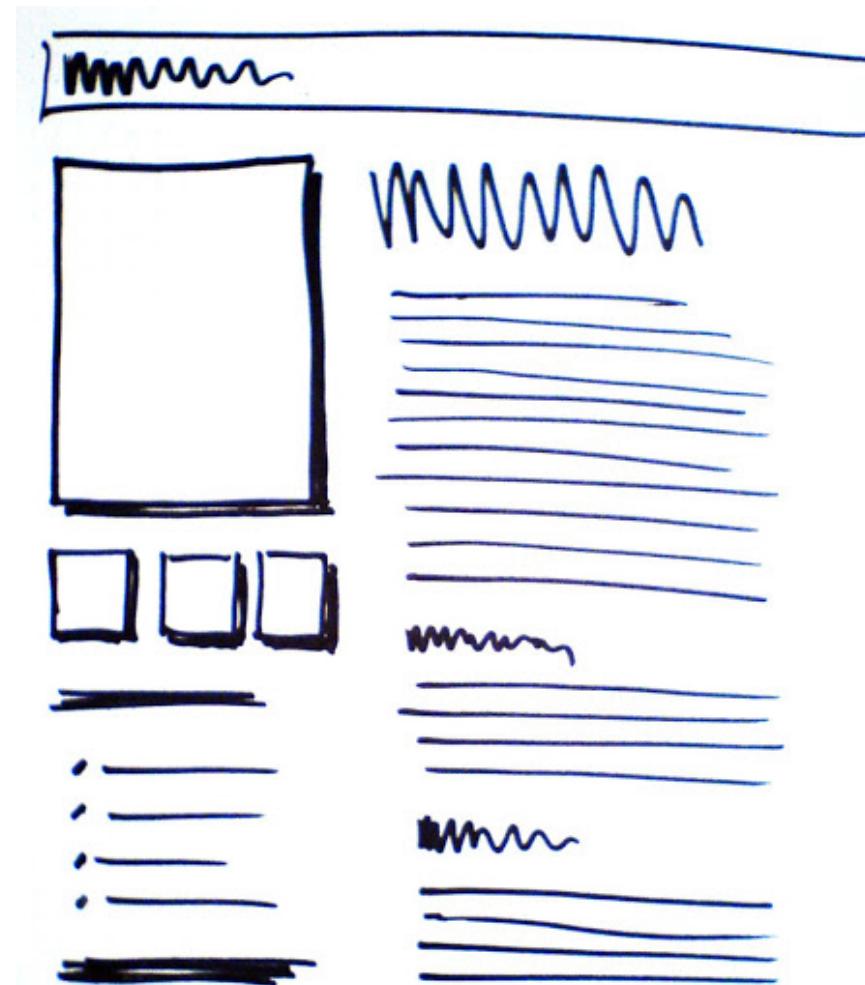


C)

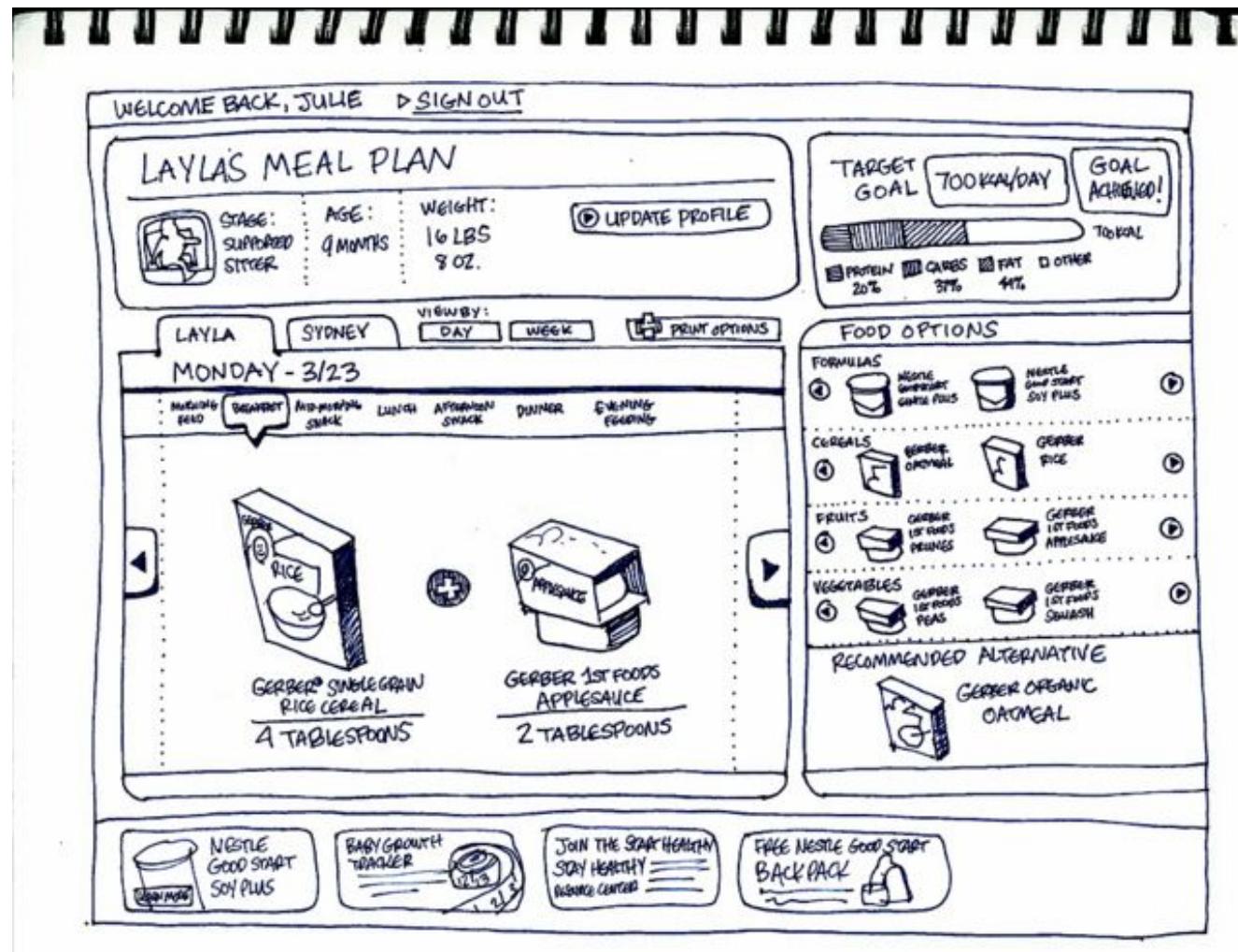
Prototype: paper (sketches)



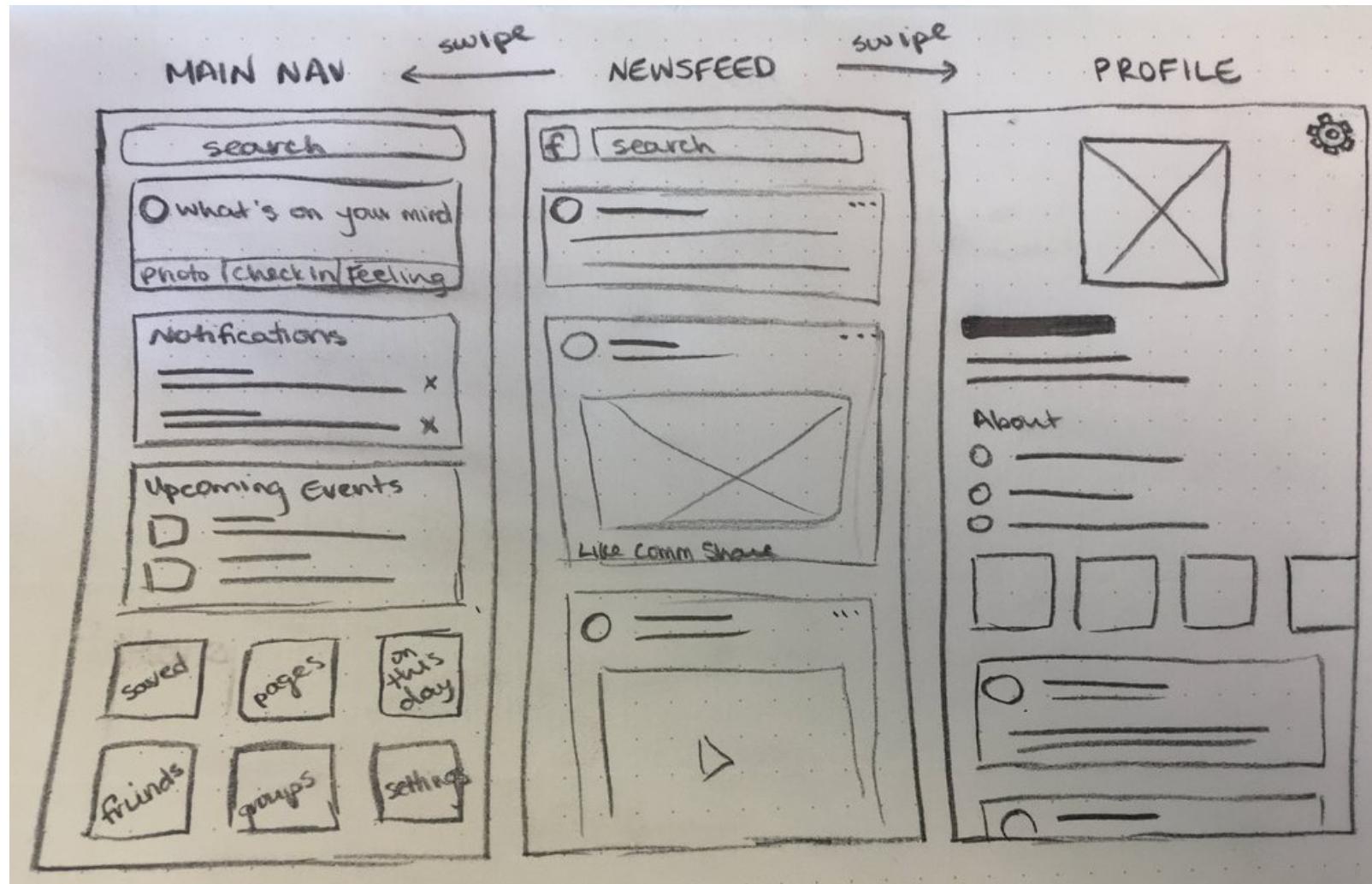
Prototype: paper (sketches)



Prototype: paper (sketches)



Prototype: paper (sketches)



Prototype: Paper Prototype – “pencil first, pixel later” (sketches)

- **Have you revised your personas-scenarios & storyboards ?**
 - Discuss key user tasks and journeys
 - Relate these to your personas
 - Discuss the architecture of your technology
 - Discuss your ideas, approaches, the design, layout
 - Use insights from previous work - personas, storyboards and key user tasks

Prototyping Techniques: Low Fidelity (sketches)

Exercise

Sketch ONE user interface (UI) workflow, each for your technology

Assignment 9

Submission Date: Saturday, 19th March 2022

Low Fidelity Prototype:

GROUP PROJECT:

Objectives:

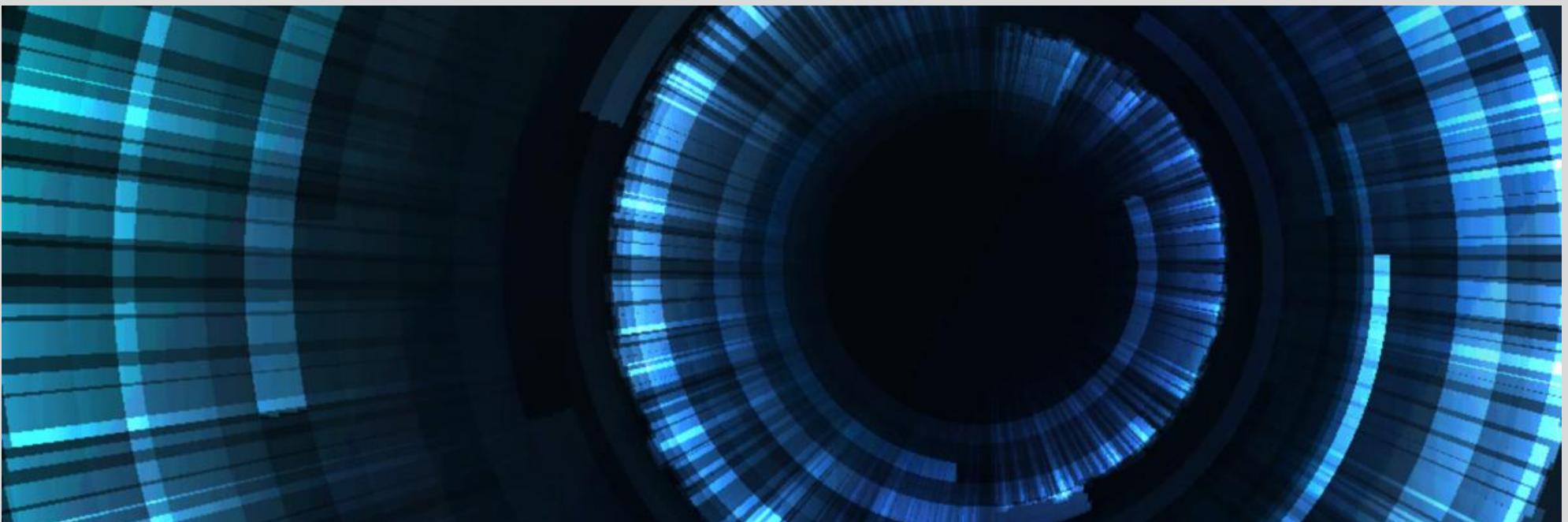
- Low-fidelity prototypes are helpful in enabling early visualization of alternative design solutions, which helps provoke innovation and improvement.
- An additional advantage to this approach is that when using rough sketches, users may feel more comfortable suggesting changes.

9. Low Fidelity Prototype

- 1) Each member to sketch ONE user interface (UI) workflow for your technology
- 2) Review each INDIVIDUAL lo-fi sketch UI prototype. Discuss the strengths & weaknesses of each
- 3) Decide as a group how to combine the best aspects of each UI into a GROUP design prototype
- 4) Create ONE revised lo-fi sketch GROUP UI prototype

Create a PDF

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