

# Digital Interaction Design IS-104

USER INTERFACE DESIGN & ENVISIONMENT

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OCTOBER 16 2019

# Recap from last lecture

Benyon's 12 principles:

## Learnability

1. Visibility
2. Consistency
3. Familiarity
4. Affordance

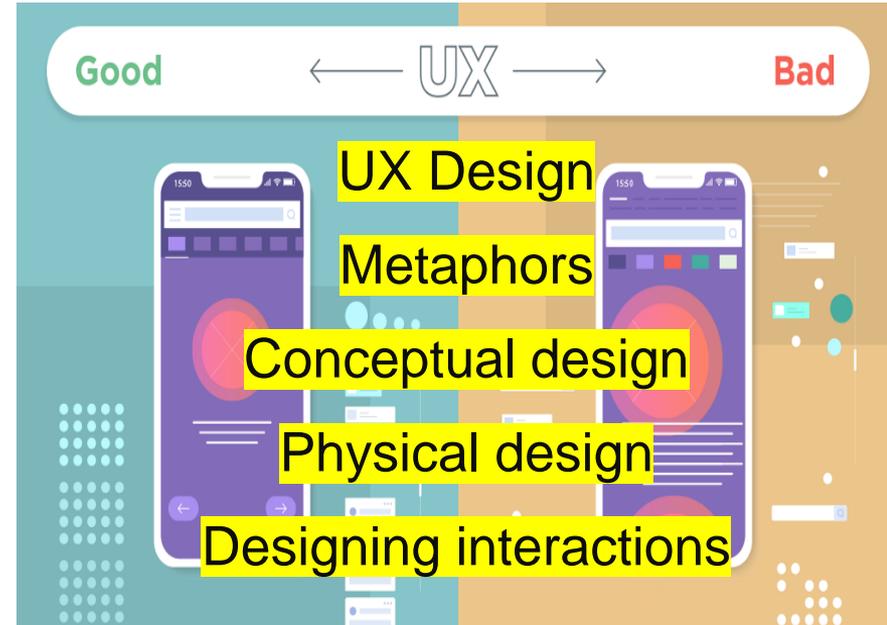
## Effectiveness

5. Navigation
6. Control
7. Feedback
8. Recovery
9. Constraints

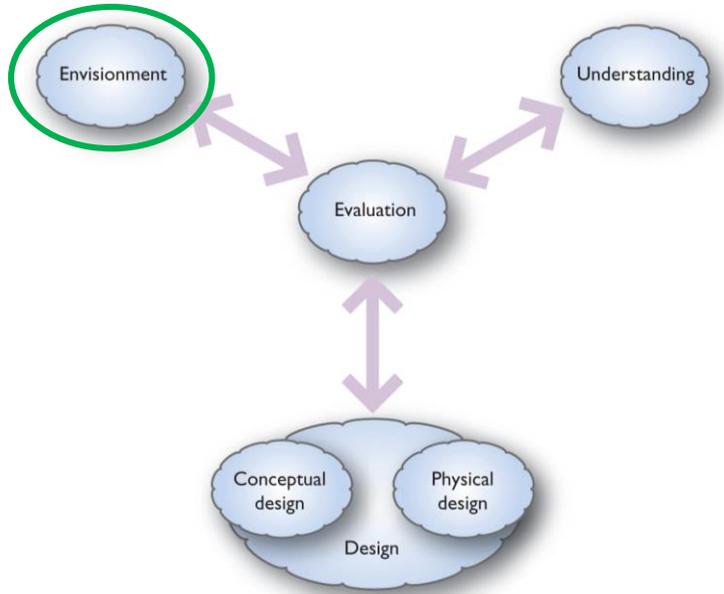
## Accommodation

10. Flexibility
11. Style
12. Conviviality

Designing User Experiences:



# Goals for today



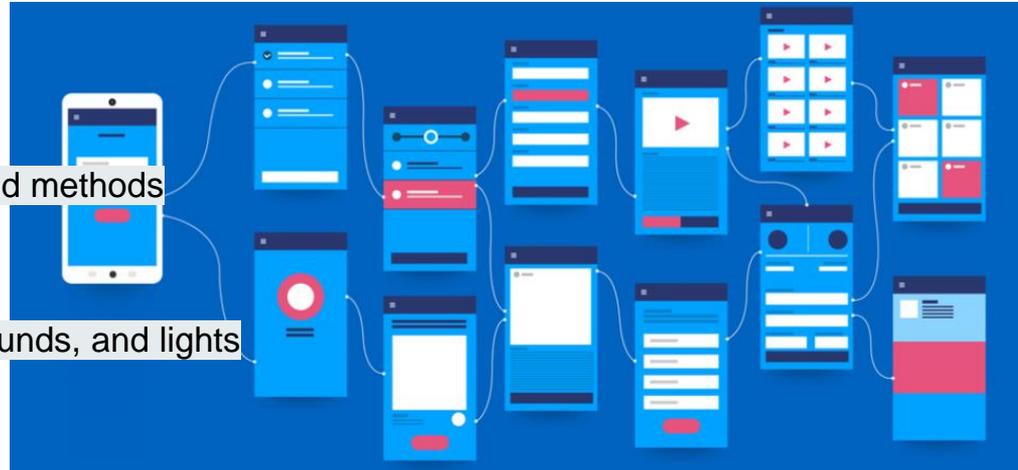
## User Interface Design & Envisioning

- User Interface Design (Basics)
- Envisionment (Chapter 8)

# User Interface Design

## UI Design

- What is UI?
  - combination of art & science
    - artistic understanding for attractive design
    - scientific knowledge for functional logic and methods
  - access to digital product or service
  - through interacting elements
    - screens and touchscreens, keyboards, sounds, and lights
  - integrates content, form and behaviour
    - documents, texts, images, videos, etc.
    - buttons, labels, text fields, check boxes, drop-down lists, etc.
    - what happens if clicked, dragged or typed



# User Interface Design

UI incorporates concepts from

- Interaction design
  - creating engaging interfaces with well thought behaviours
  - understanding how users and technology communicate with each other
- Visual design
  - strategically implementing images, colours, fonts and other elements
  - enhances user engagement for building trust and interest in the brand
- Information architecture
  - organizing, structuring and labelling content in an effective and sustainable way
  - where they are, what they have found, what is around, what to expect

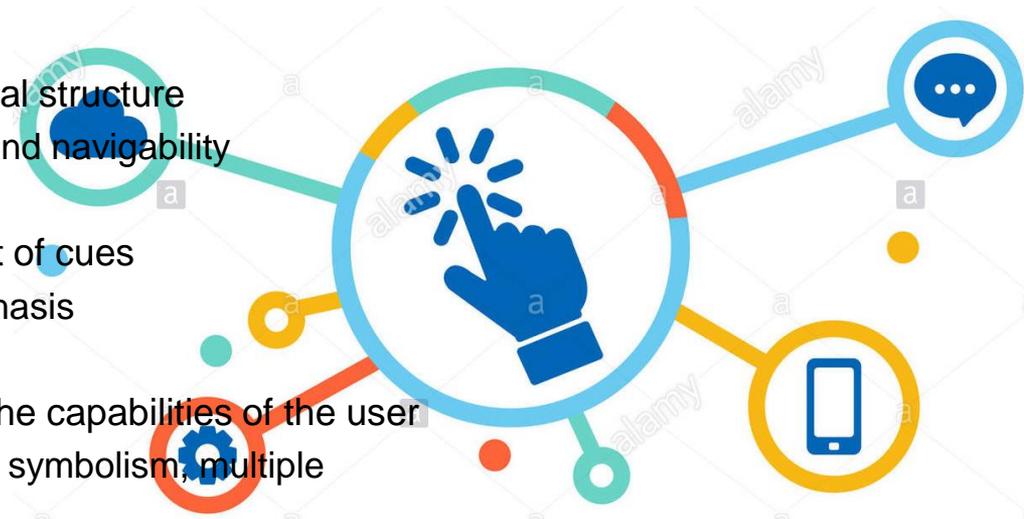
source: <https://www.usability.gov/what-and-why/user-interface-design.html>



# User Interface Design

## Principles of UI design

- Organize: a clear and consistent conceptual structure
  - consistency, screen layout, relationships and navigability
- Economize: do the most with least amount of cues
  - simplicity, clarity, distinctiveness and emphasis
- Communicate: match the presentation to the capabilities of the user
  - balanced legibility, readability, typography, symbolism, multiple views and colour/texture

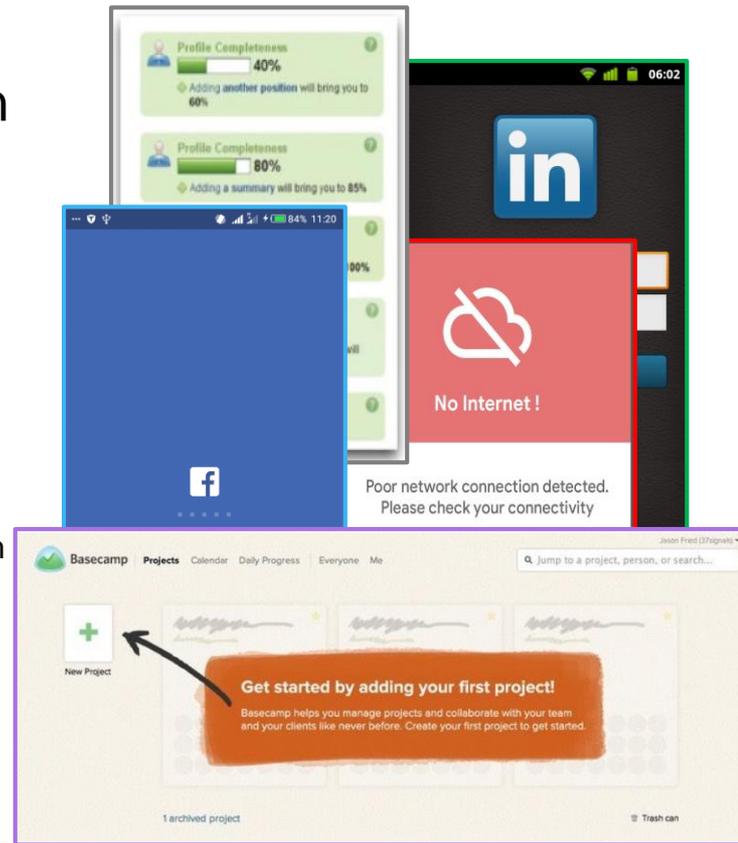


source:[http://web.cs.wpi.edu/~matt/courses/cs563/talks/smartin/int\\_design.html](http://web.cs.wpi.edu/~matt/courses/cs563/talks/smartin/int_design.html)

# User Interface Design

## UI Stack

- When designing, following states need to be considered for every screen you make:
  - **Ideal State**: the product is working properly, providing maximum value, full of useful, actionable content – foundation for other states
  - **Error State**: when things go wrong - make error message human, suited to audience
  - **Partial State**: no longer empty and sparsely populated - keep them hooked
  - **Loading State**: represent situation when fetching data - make it clear you are advancing towards the goal, not just waiting around
  - **Blank State**: the first impression to the user - spur them to action, keep them interested, remind them the value of product



# Envisionment



# Envisionment

## Ideation:

- visualizes ideas and clarifies them
- enables people to give feedback
- represents design work to ourselves and to others
- explores design concepts and ideas with others
- exists through the entire development process
- assists designers with generation, communication and evaluation of ideas.

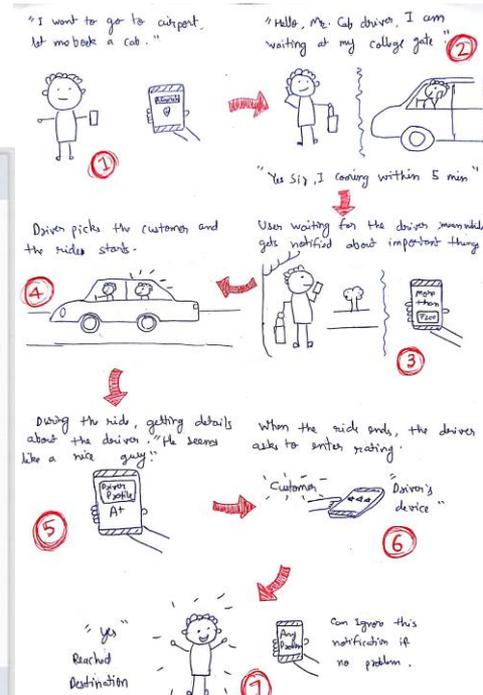
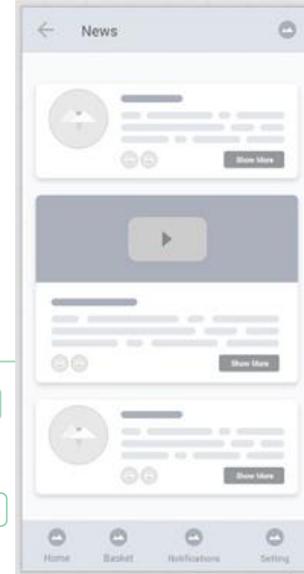
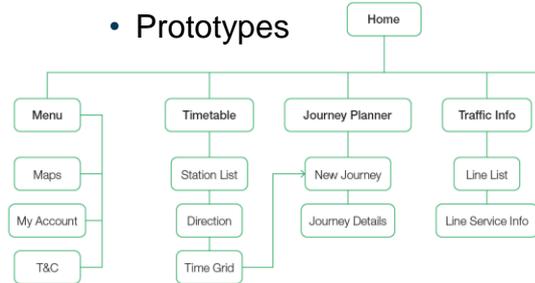


# Envisionment

## Representation:

- Externalizes thoughts
- Different forms of representation
  - at different stages
  - to different audience
- Presenting techniques selection depends on
  - working style
  - project type
  - available resources
  - and so on

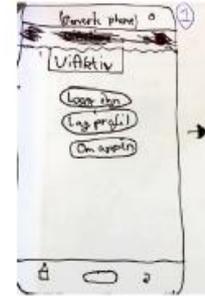
- Envisioning techniques include
  - Stories and storyboards
  - Navigation maps
  - Wireframes
  - Prototypes



# Envisionment

## Sketching storyboards:

- Initial step of designing
- Ideas and thoughts can be quickly visualized
  - a city can be (initially) designed just on a piece of paper
- Sketches are quick, timely, inexpensive, disposable and plentiful
- A feel for the flow of the experience
- Simple cartoon-like structures with key moments
- Need to have clear vocabulary, fluidity, minimal detail and an appropriate degree of refinement



Picture 1:

### Startup screen

The startup layout is very plain and simple with the logo of the app on top of the screen. The log in feature CAN go automatically after the first login if the user wishes. This feature requires you to have made a profile before.

The «about app» feature provides information

about the app for first time users.



Picture 2:

### Creating a profile

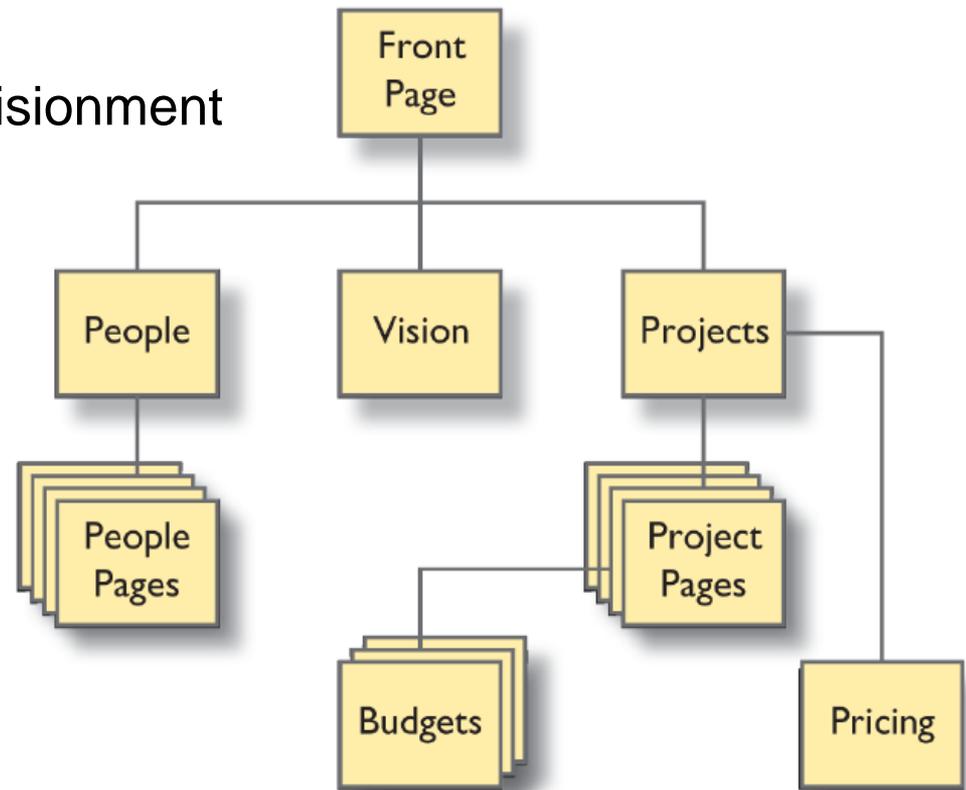
The stars indicate information that is REQUIRED to use the profile. The rest are optional to write out and whether or not you want to show it publically.

You can provide which days you want to work out and at what time by ticking of the tickboxes for each day, and sliding the 2 buttons that indicate workout start and end.

# Envisionment

## Navigation Maps:

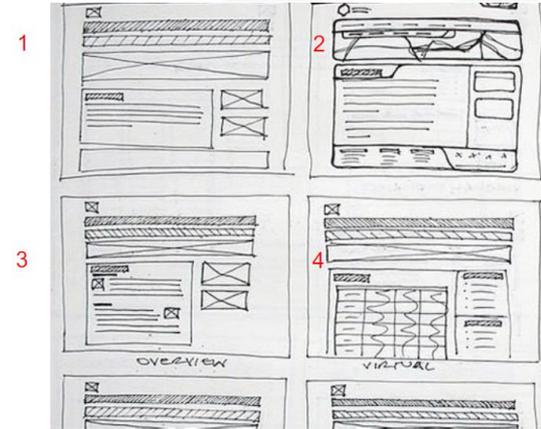
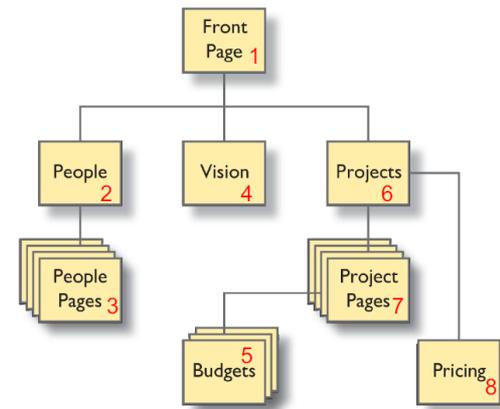
- Mapping the interactions
- Structuring and exploring information space
- How to move through the site or app
- Representation:
  - page in a site or app – a box
  - access from that page – a connecting link (arrows can be utilized upon necessity)
  - different notational conventions can be used
- Can be redrawn many times to avoid poor navigational structure



# Envisionment

## Wireframes:

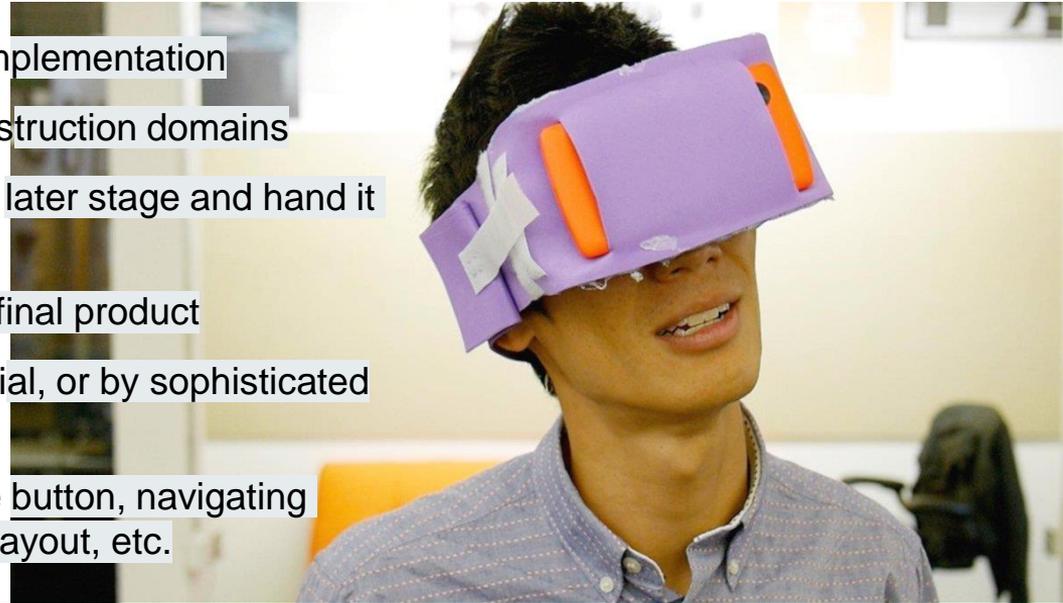
- Outlines the structure of a software system – system blueprint
- Focuses on the structure of the pages/app screens and navigations
- Together with Navigation Maps, Wireframes produces a basic overview of an app or website design
- Good for defining screen layout – not good for showing interactivity/flow
- By numbering the screens/pages on the navigation map you can easily link them to the wireframes



# Envisionment

## Prototypes:

- A concrete but partial representation or implementation
- Used extensively in most design and construction domains
- Communicate an early design, test it at a later stage and hand it over to a development team
- Sometimes identify the specifications for final product
- Made by paper, cardboard or other material, or by sophisticated software package
- Are interactive in this domain – pressable button, navigating pages/screens, visualizing entire screen layout, etc.

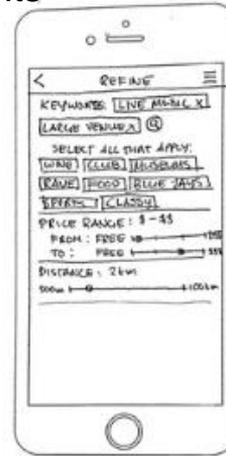


# Envisionment

## Prototypes:

- Best envisioning technique for client and ordinary people
- First and foremost way of design evaluation by clients
- Appropriateness depend on different factors:
  - for who
  - at which stage
  - what features
- Are of two types:
  - low-fidelity (lo-fi)
  - high-fidelity (hi-fi)

Sketch



Low Fidelity



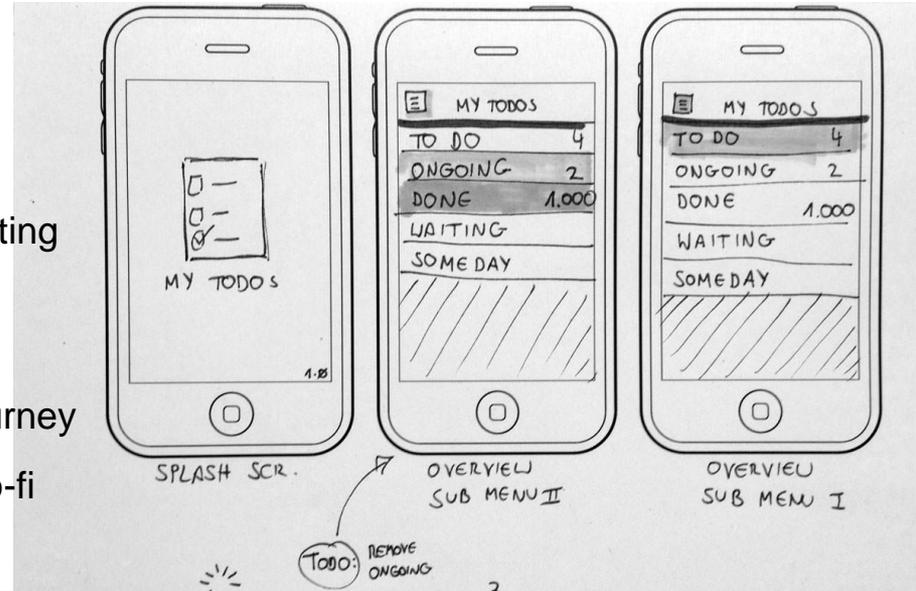
High Fidelity



# Envisionment

## Lo-fi Prototypes:

- Usually made from paper
- Focus mainly on broad underlying design ideas – content, form and navigation structure
- Capture very early design thinking and aid generating and evaluating multiple design alternatives
- Easy to produce and easy to discard
- A series of screen shot can generate customer journey
- Software generated wireframes can constitute a lo-fi prototype



# Envisionment

## Lo-fi Prototypes:

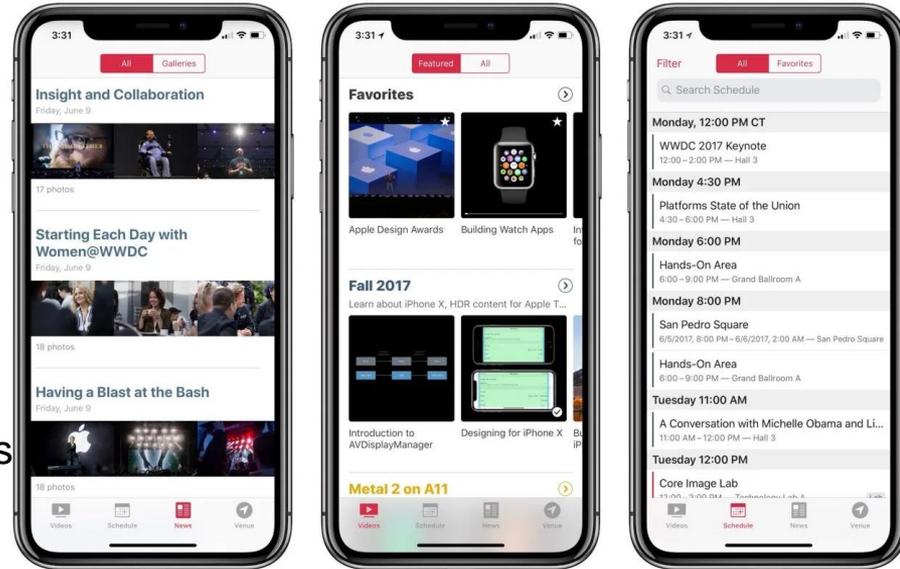
- Practical issues:
  - Robustness: cannot be easily replicated and distributed among many or distant users
  - Scope: focus on broad issues and key elements – not good for telling too detail
  - Instructions: a trade-off between enough and too much detail
  - Flexibility: open for suggestions for changing on the fly
  - Technology: no technological dependency
  - Evaluation: no time-bound evaluation



# Envisionment

## Hi-fi Prototypes:

- Similar in look and feel to the anticipated final product
- Produced in software
- Detail evaluation of the main design elements
- Generate crucial stage in client acceptance
- Developed fairly well into the project when ideas are beginning to firm up
- Accurate detail is vital



# Envisionment

## Hi-fi Prototypes:

- Practical issues:
  - Impression of being finished
  - May distract with finishing elements (fonts, alignment, colors)
  - Technical mishaps can bring its demonstration to halt
  - Can be replicated and distribute to multiple users
  - Can support timing studies and collection of quantitative data in general
  - Error sensitive – a simple error can ruin a prototype
  - Make sure that the actual system can be developed



# Envisionment

## Prototyping trade-offs:

- Considering trade-offs in terms of:
  - Time & Resource
  - The aim of the evaluation
  - The stage of the project
- Reflecting on how and what to prototype:
  - Who is the prototype aimed at?
  - What is the designer trying to achieve?
  - What stage of the project are things at?
  - What is the context for the using the prototype?
  - What technologies are appropriate?



# Envisionment

## Example from previous year deliveries: Storyboard

Picture 1:

### Startup screen

The startup layout is very plain and simple with the logo of the app on top of the screen. The log in feature CAN go automatically after the first login if the user wishes. This feature requires you to have made a profile before.

The «about app» feature provides information

about the app for first time users.



Picture 3:

### Front page

Provided after creating a profile and/or logging in. The «my Profile» feature allows you to edit your profile and adjust certain settings about visibility of your information. At the very top of the screen there is a bar containing a «home» button which takes you back to Picture 3, regardless of what you are doing right now. There's also the logo of our app and a «settings» button in the top right, allowing you to change things about and within the app, along with user licence and other necessary and useful tools.



Picture 5:

### Message example

When you want to answer someone's message or click «message» on a person you've found (seen on later pictures), you see this screen. You see the profile picture of the person you message. The small x in the top right corner exits the message and returns you to the previous screen.



Picture 7:

### Search result

The top of the screen shows exact matches up to a certain number.

The bottom of the screen provides partial matches, giving the user more options.

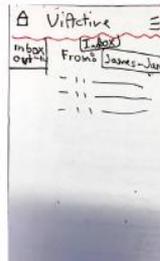
If there are more matches than the screen can cover, there's a next page button at the bottom of the screen, marked with an arrow.

Picture 2:

### Creating a profile

The stars indicate information that is REQUIRED to use the profile. The rest are optional to write out and whether or not you want to show it publicly.

You can provide which days you want to work out and at what time by ticking of the tickboxes for each day, and sliding the 2 buttons that indicate workout start and end.

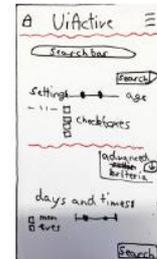


Picture 4:

### My messages

Simple list of messages you've received from people along with the date they sent it.

Outbox will look the same, except it's your messages.



Picture 6:

### Find Partner

The search bar exists for you to find specific people.

A fairly short and simple set of settings and choices to find partners is on the screen.

There will also be a small button names «advanced», providing the user with the option of searching for more specific things, like days and times they want the person to be available.



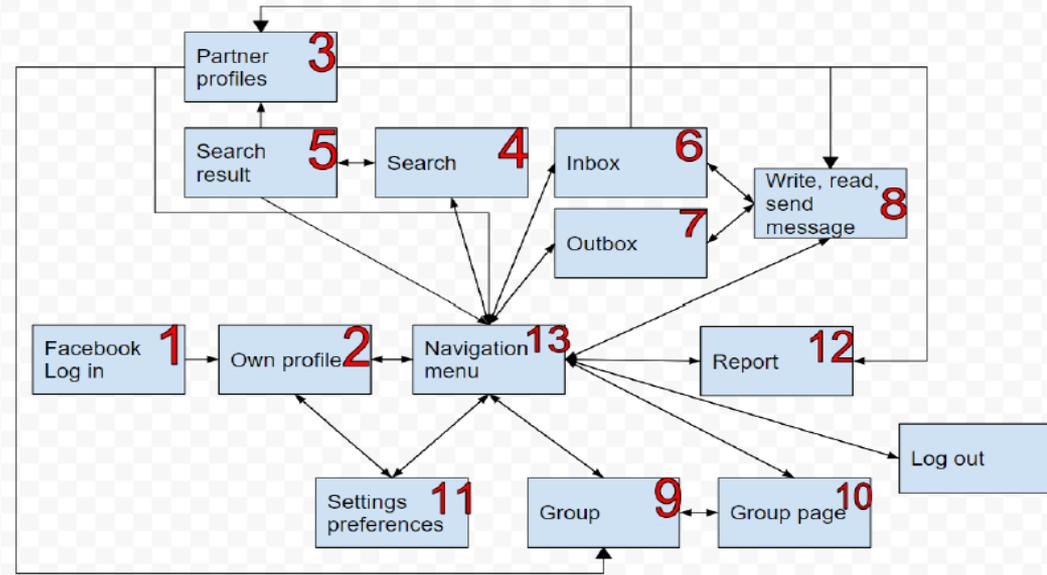
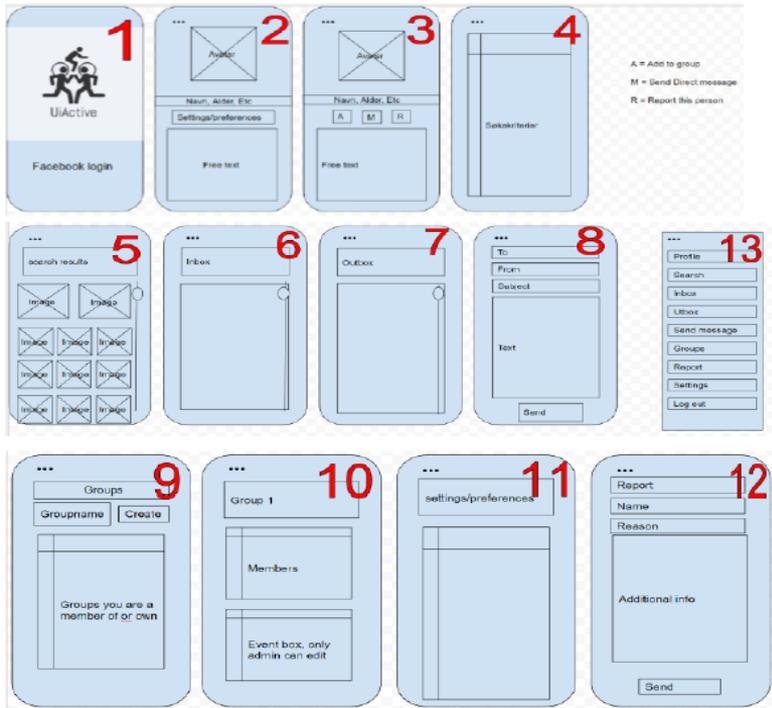
Picture 8:

### Specific match

Clicking this will provide the user with a larger version of the profile picture, along with a report function in case of bad behaviour or inappropriate profile picture.

# Envisionment

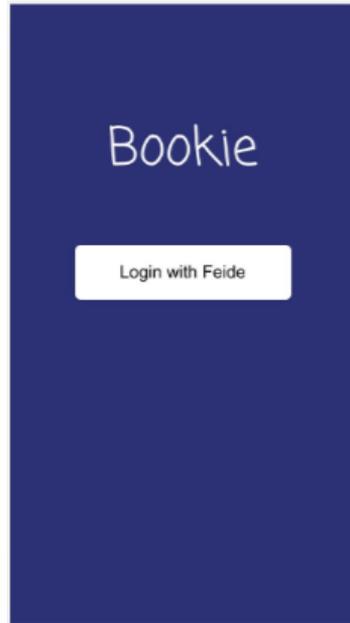
## Example from previous year deliveries: Navigation Map and Wireframe



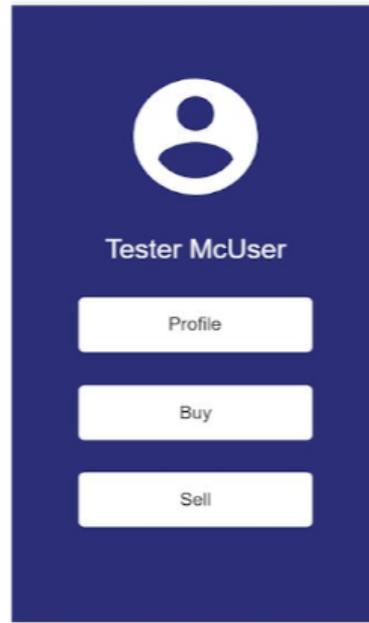
# Envisionment

## Example from previous year deliveries: Hi-fi Prototype

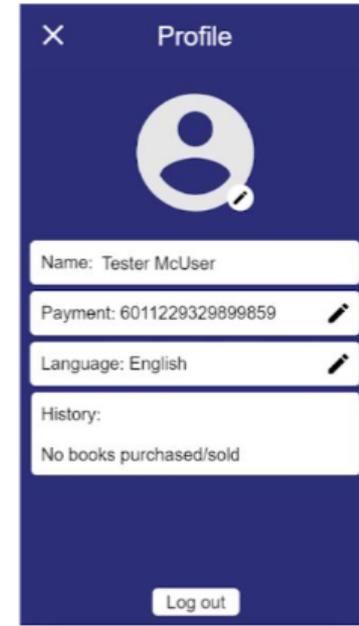
Login page



The frontpage:



Profile page:



Thank you! Questions?