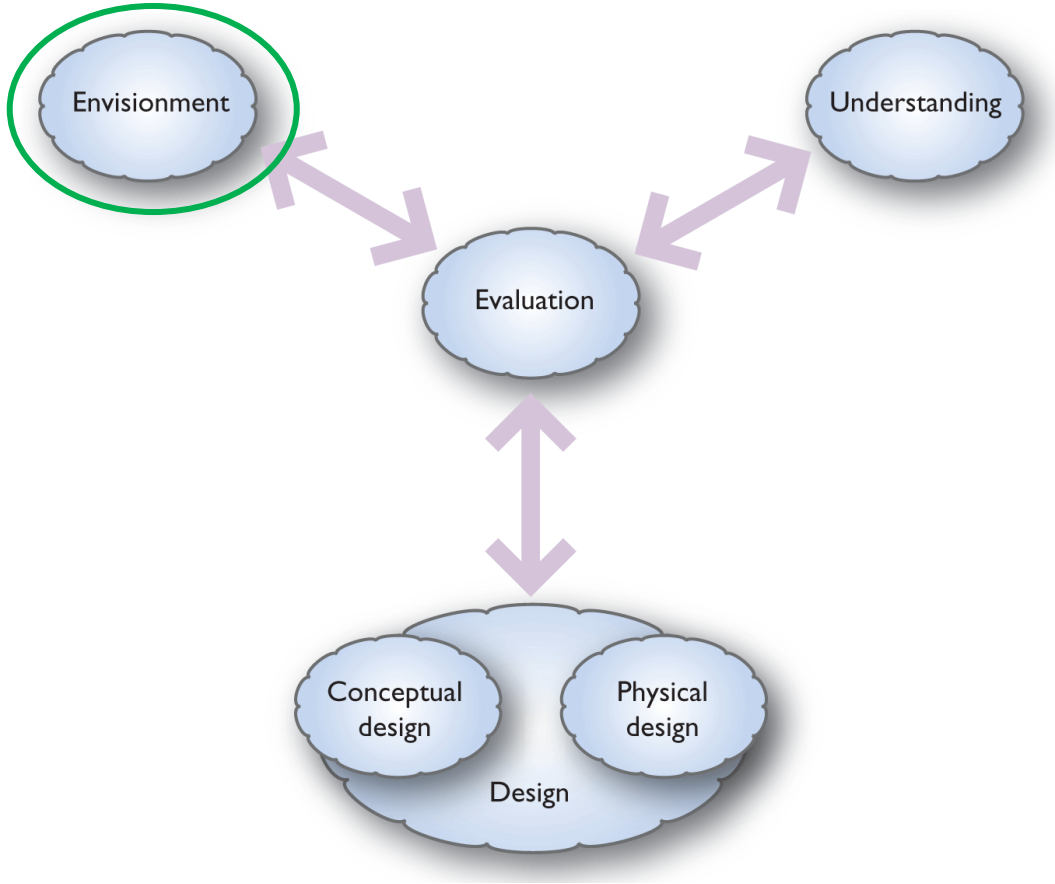
University of South-Eastern Norway
School of Business

WEB 1100: Lecture 3
Web Development & HCI

Mohammad Tafiqur Rahman, Ph.D.
Assistant Professor

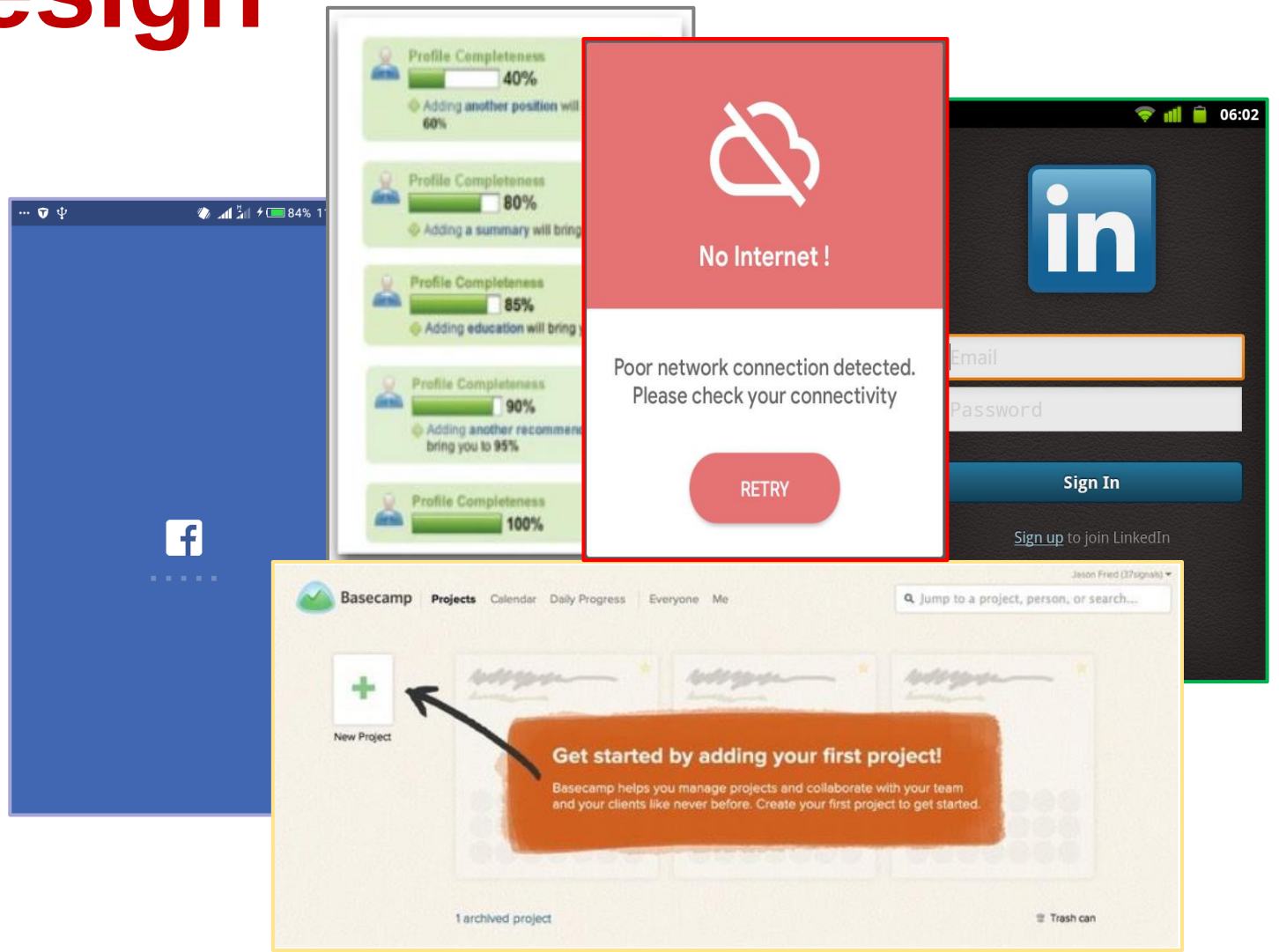
Agenda for today

- User interface design
- Envisionment
- Prototyping



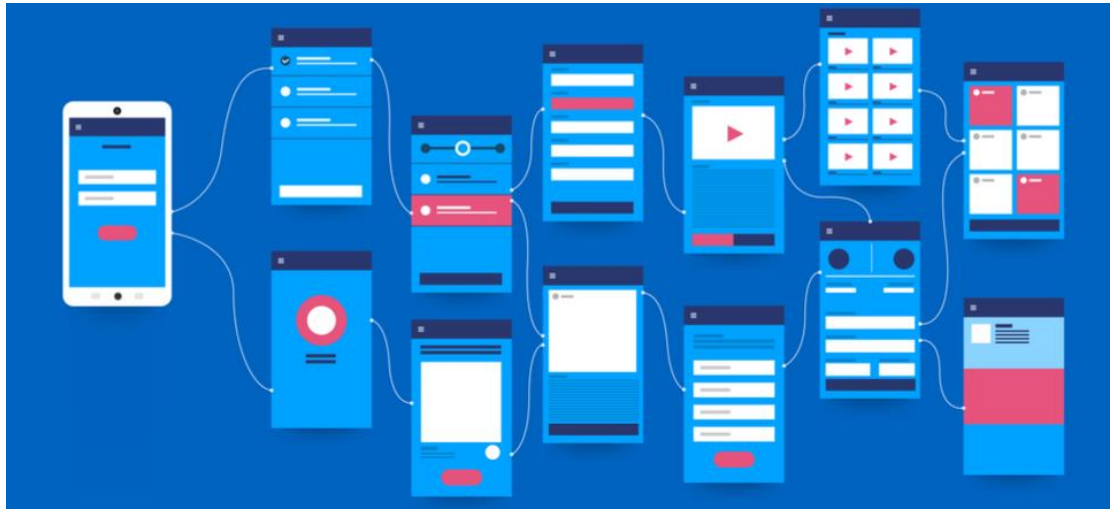
User Interface Design

- Introduction
- Conceptualization
- Principles
- UI Stack



What is UI?

- combines of art & science
- allows accessibility to digital product or service
- employs interacting elements
- integrates content, form and behaviour



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

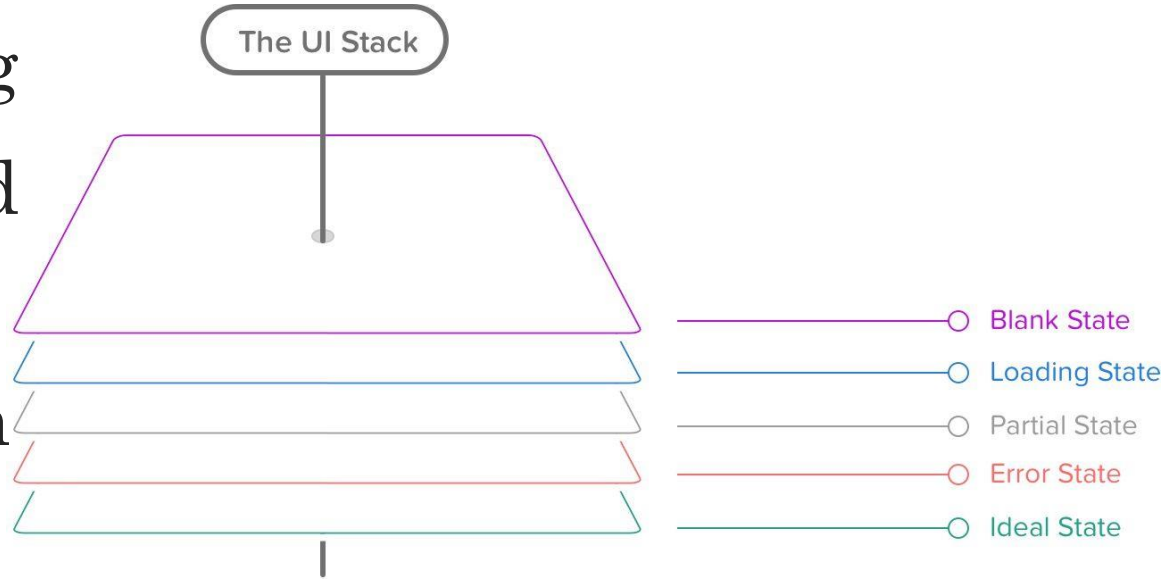
Principles

- 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

UI Stack

Five states:

- **Ideal state:** foundation for other states
- **Error state:** when things go wrong
- **Partial state:** no longer empty and sparsely populated
- **Loading state:** represent situation when fetching data
- **Blank state:** the first impression to the user



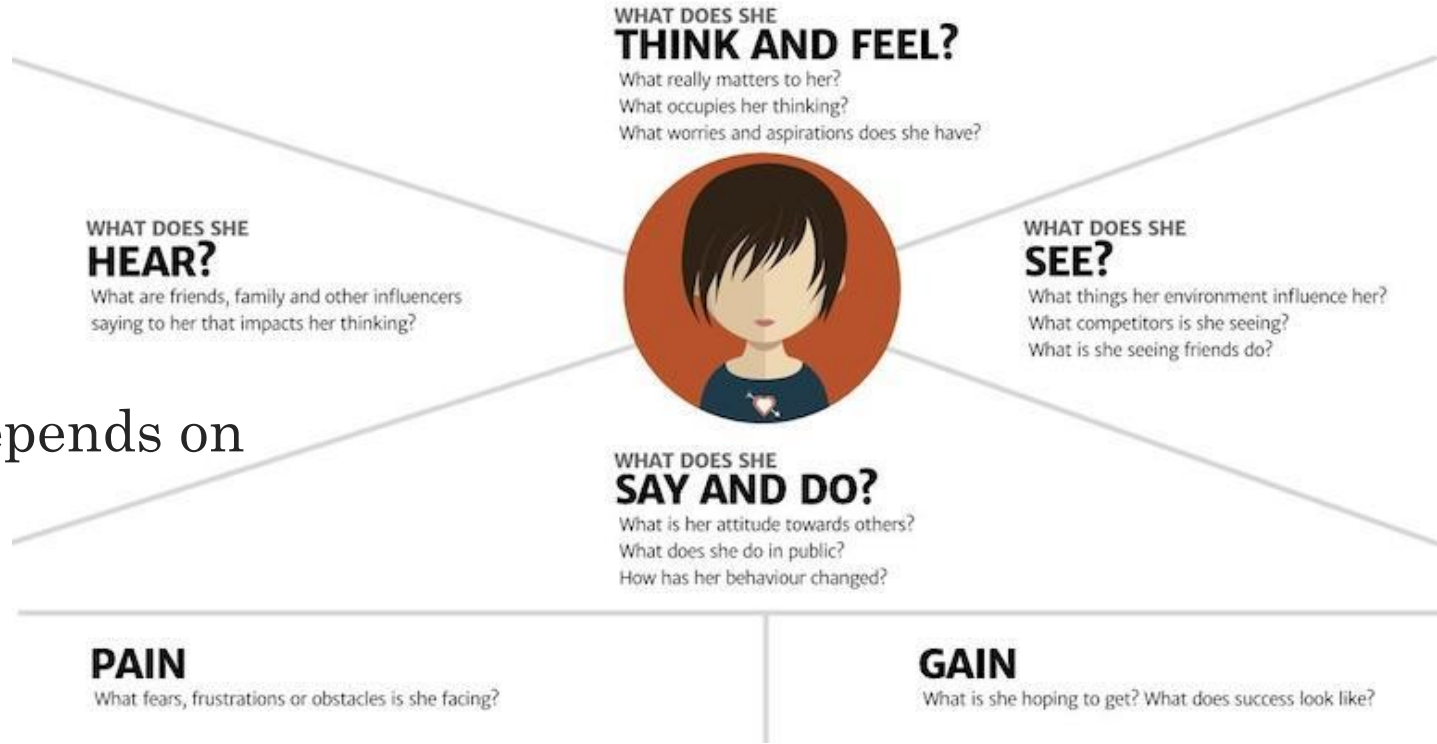
Envisionment

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.

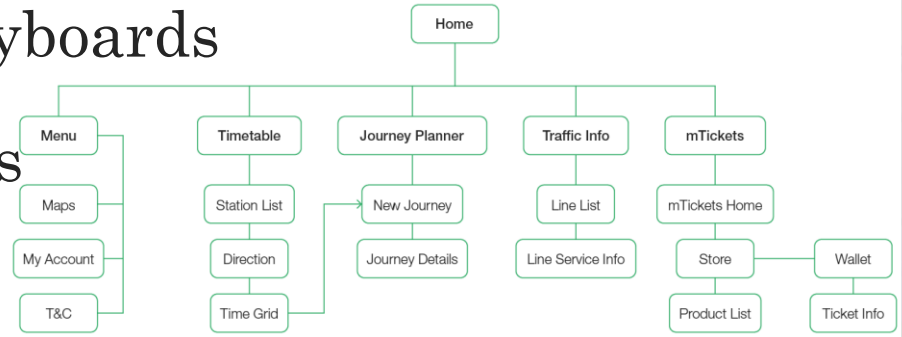
Representation:

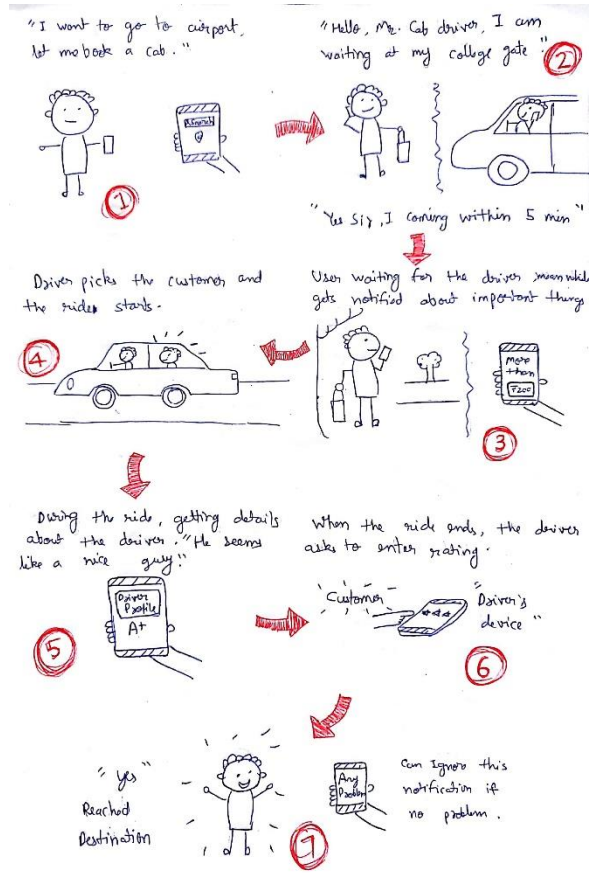
- Externalizes thoughts
- Different forms of representation
  - at different stages
  - to different audience
- Presenting techniques selection depends on
  - working style
  - project type
  - available resources
  - and so on



Envisioning techniques

- Stories and storyboards
- Navigation maps
- Wireframes
- Prototypes





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:

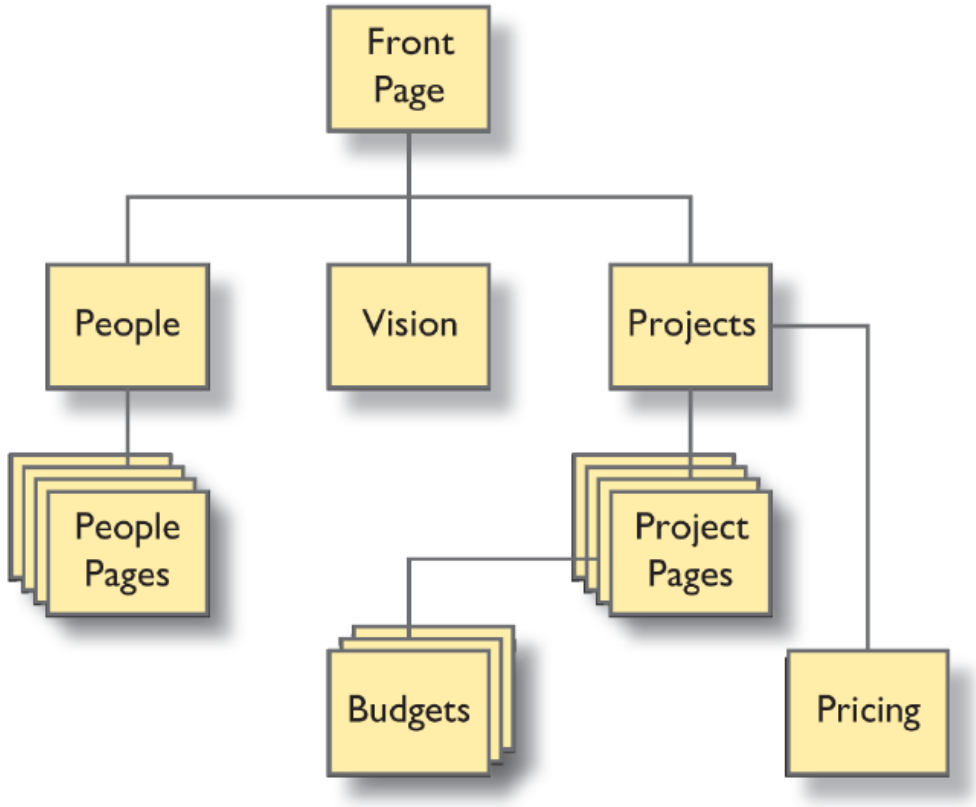
Creating a profile

The stars indicate information that is REQUIRED to use the profile. The rest are optional to write out and wether 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.

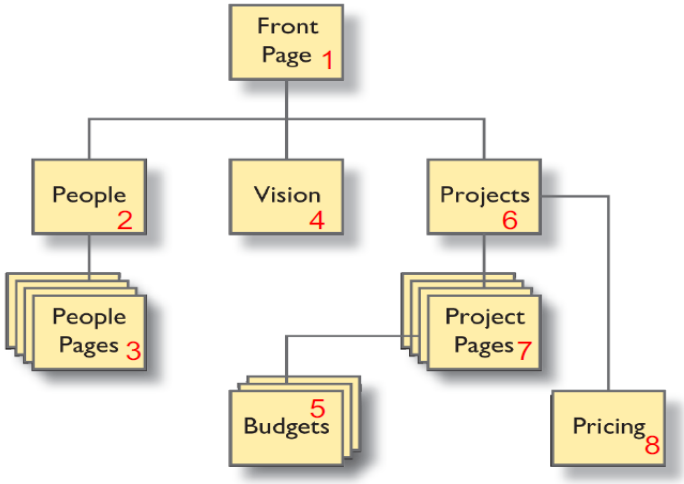
Navigation Maps:

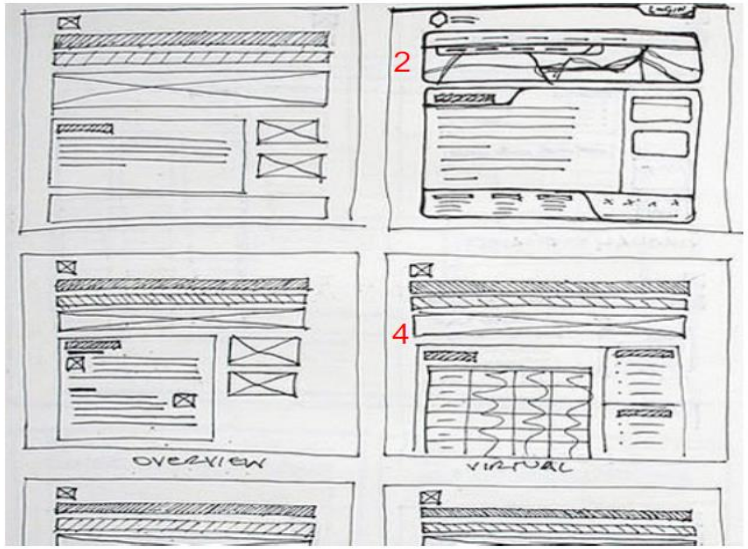
- mapping the interactions
- structuring and exploring information space
- how to move through the site or app
- representation:
  - page in a site or app – a box
  - access from that page – a connecting link (arrows can be utilized upon necessity)
  - different notational conventions can be used
- can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



Wireframes:

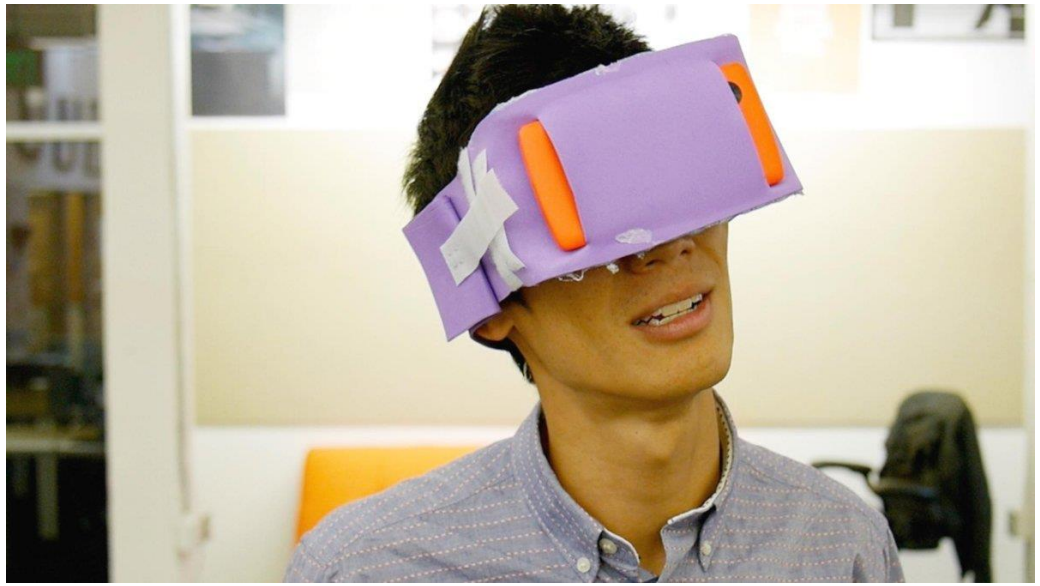
- outlines the structure of a software system – system blueprint
- focuses on the structure of the pages/app screens and navigations
- together with navigation maps, wireframes produce a basic overview of an app or website design
- good for defining screen layout – not good for showing interactivity/flow
- by numbering the screens/pages on the navigation map you can easily link them to the wireframes





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.



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)

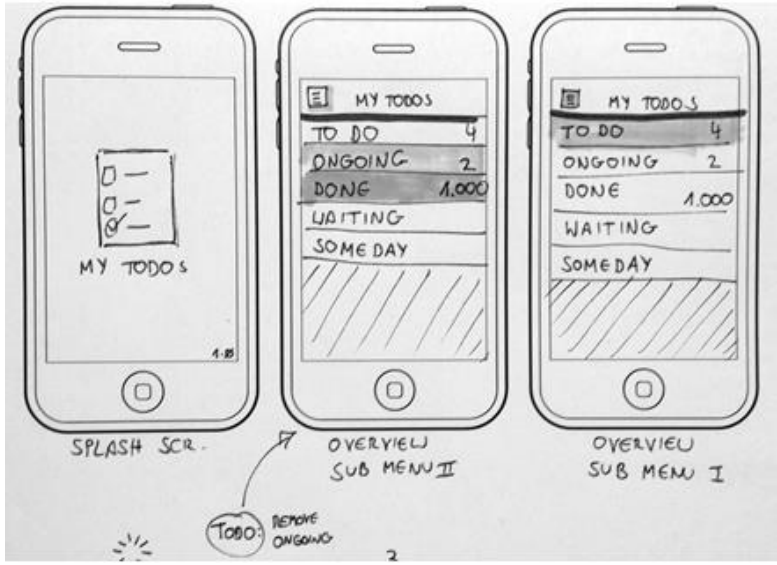
Sketch

Low Fidelity

High Fidelity

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

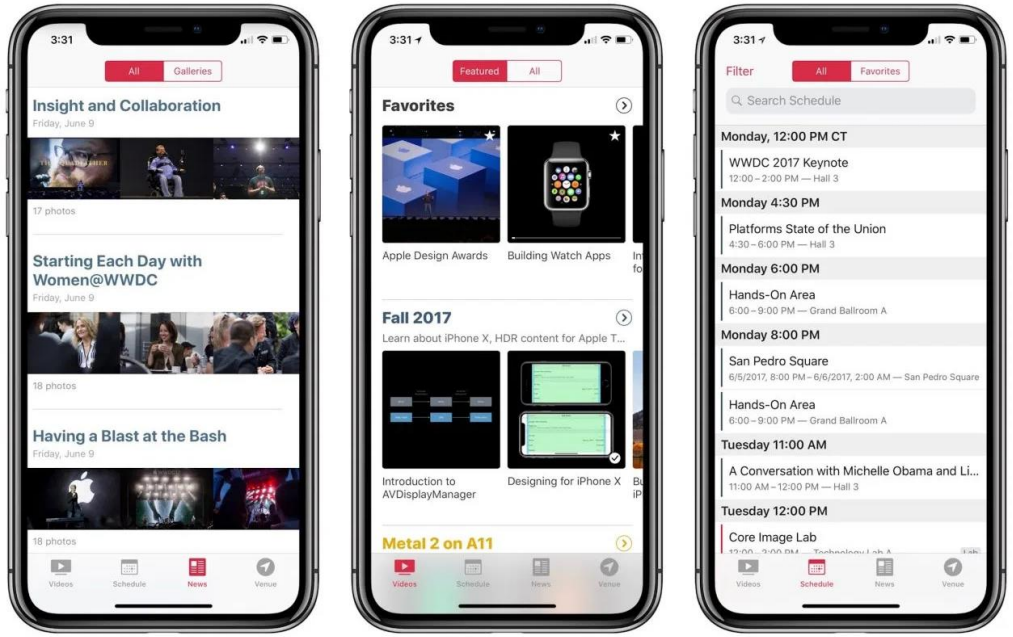


Lo-fi Prototypes:

- 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

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
- can be replicated and distribute to multiple users

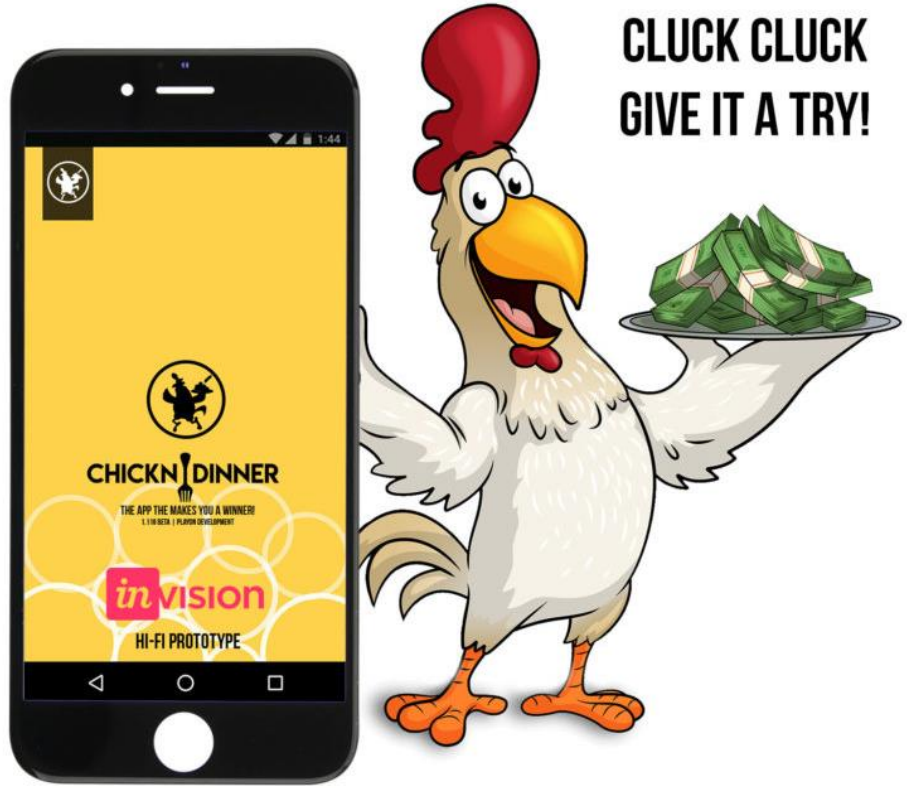


Hi-fi Prototypes:

- Practical issues:
  - impression of being finished products
  - may distract with finishing elements (fonts, alignment, colours)
  - technical mishaps can bring its demonstration to halt
  - error sensitive – a simple error can ruin a prototype
  - time consuming and costly

Hi-fi Prototypes:

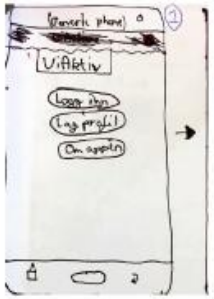
- Benefits:
  - realistic and faster system response
  - everything can be tested
  - live system to users
  - enough time for observation
  - less likely to be affected by human error



Prototyping trade-offs:

- Considering trade-offs in terms of:
  - time and 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?

Example from previous year deliverables: 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 2:

Creating a profile

The stars indicate information that is REQUIRED to use the profile. The rest are optional to write out and wether 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.

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 4:

My messages

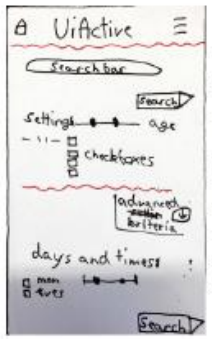
Simple list of messages you've recieved from people along with the date they sent it.

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

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.



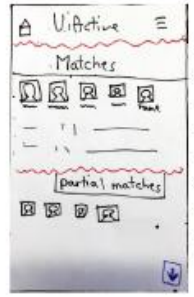
Picture 6:

Find Partner

The searchbar 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», provoding the user with the option of searching for more specific things, like days and times they want the person to be available.



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.

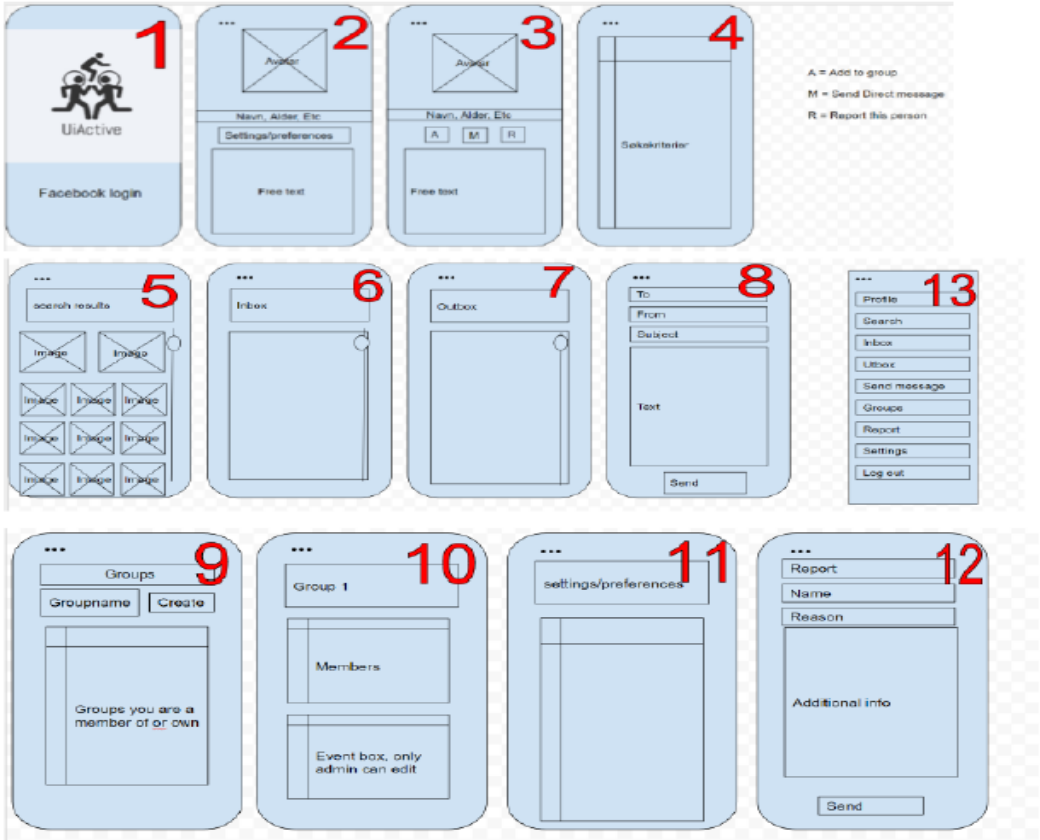
If there are more matches than the screen can cover, there's a next page button at the bottom ofthe screen, marked with an arrow.

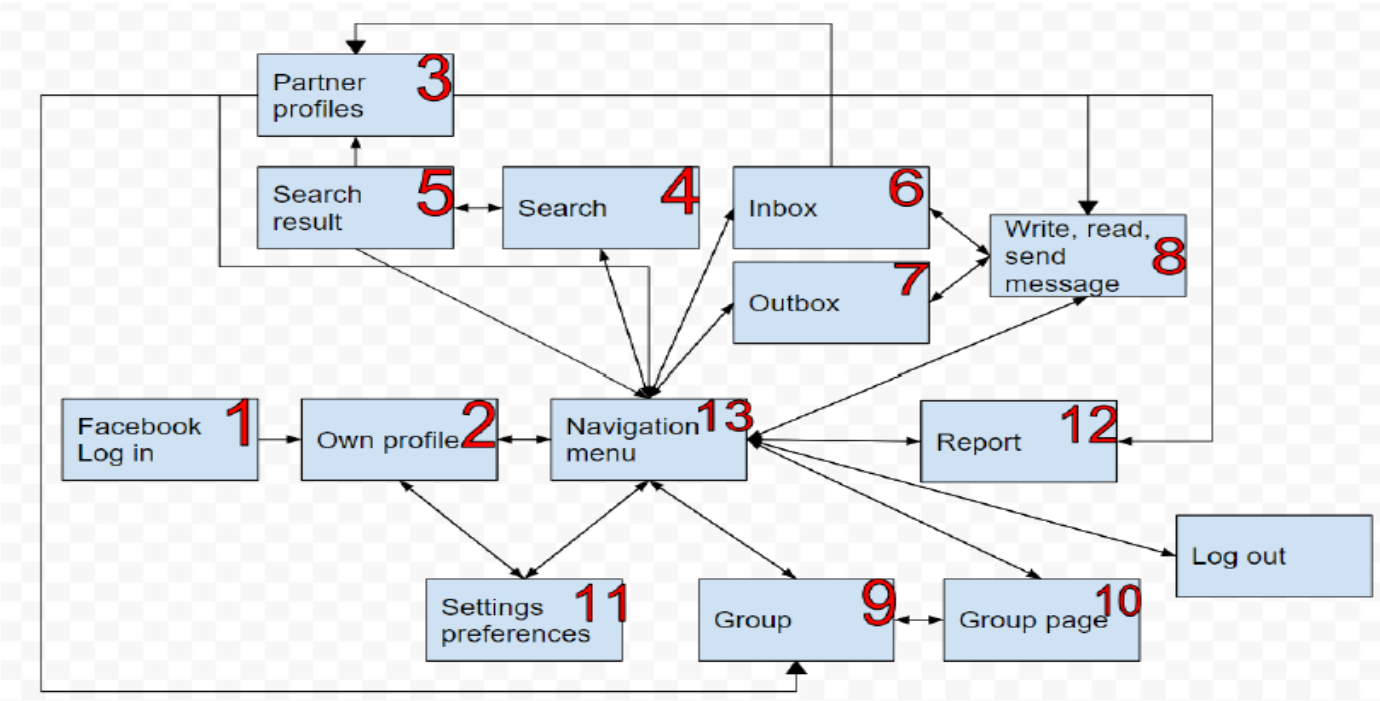
Picture 8:

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 unappropriate profile picture.

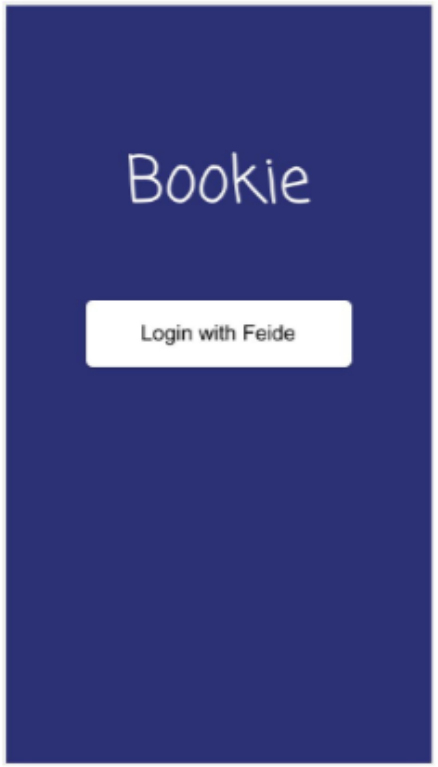
Example from previous year deliverables: Navigation Map & Wireframe



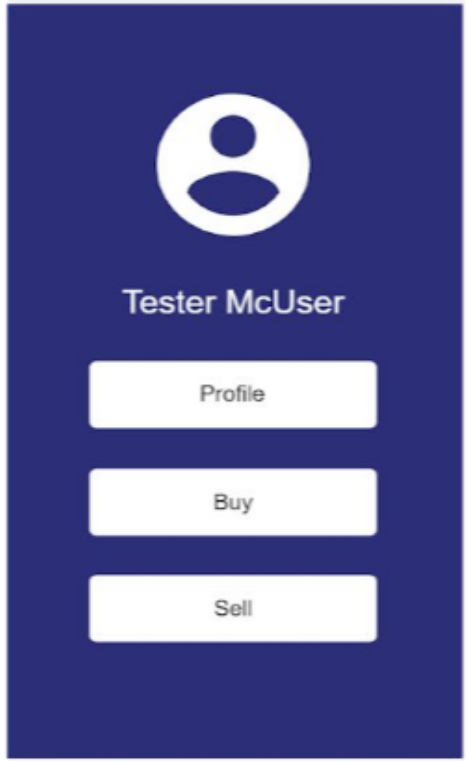


Example from previous year deliverables: Hi-fi Prototype

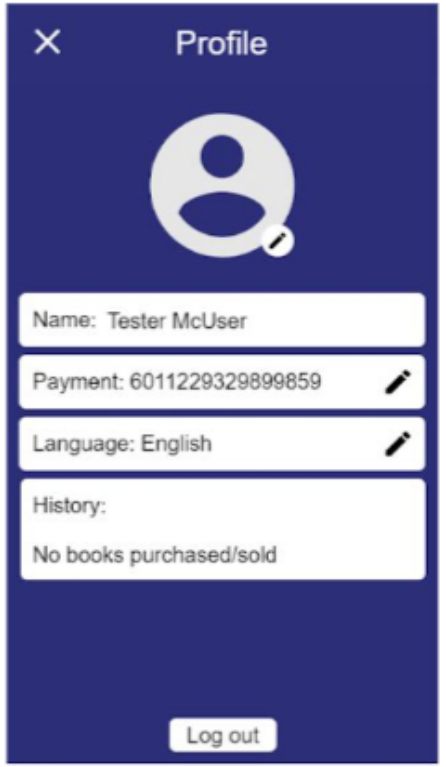
Login page



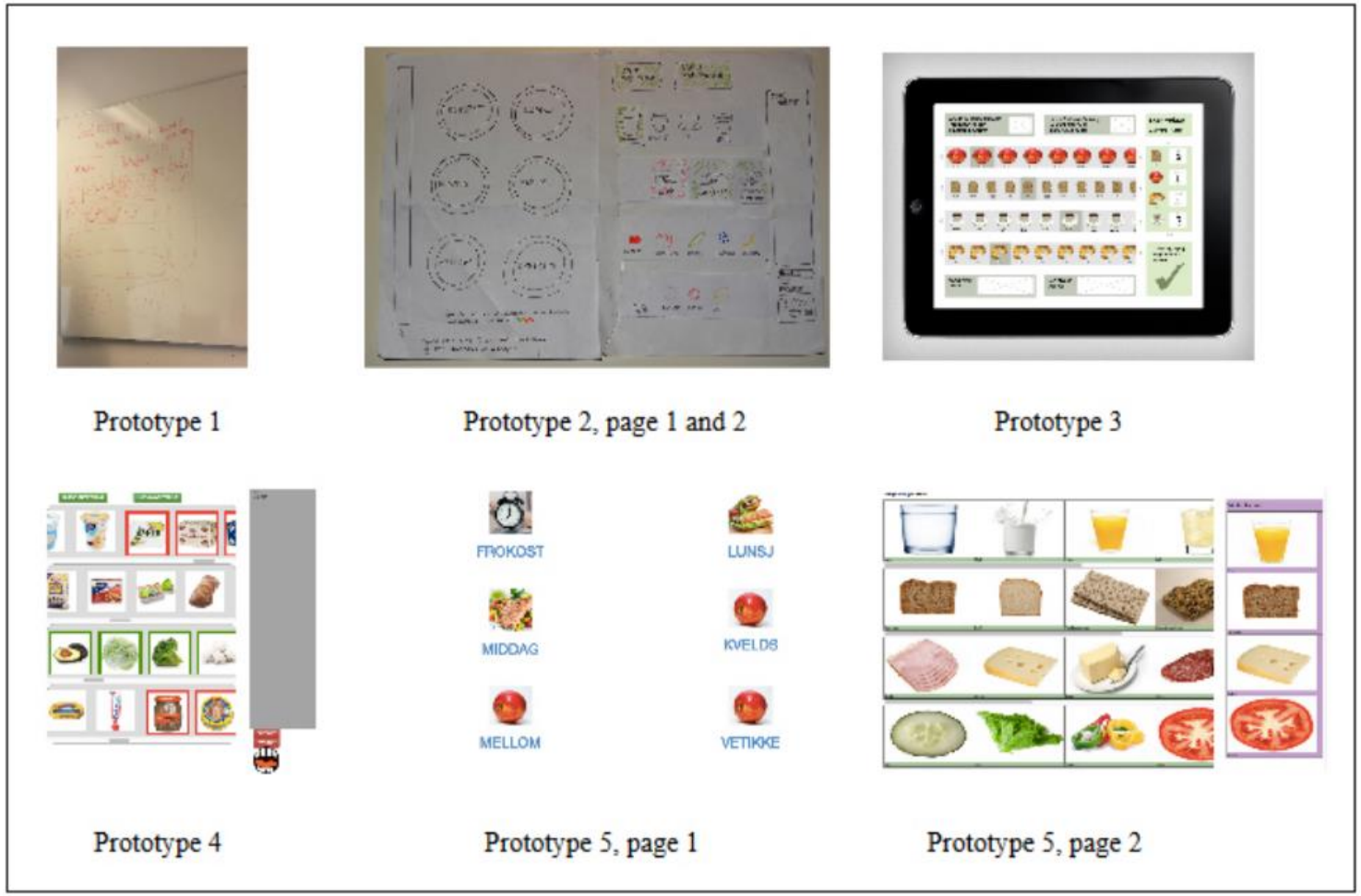
The frontpage:



Profile page:



Example of stages of prototyping



Prototype 1 | Prototype 2, page 1 and 2 | Prototype 3

Prototype 4 | Prototype 5, page 1 | Prototype 5, page 2

Dr. Mohammad Tafiqur Rahman

Ph.D. in Information Systems

Assistant Professor

University of South-Eastern Norway

mohammad.t.rahman@usn.no

Thank You!

Think Green, Grow Green, Live Green