

INTRODUCTION TO PROTOTYPING

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A series of several parallel white lines of varying thicknesses, slanted diagonally from the bottom-left towards the top-right, located on the right side of the slide.

Easy to use and understand?





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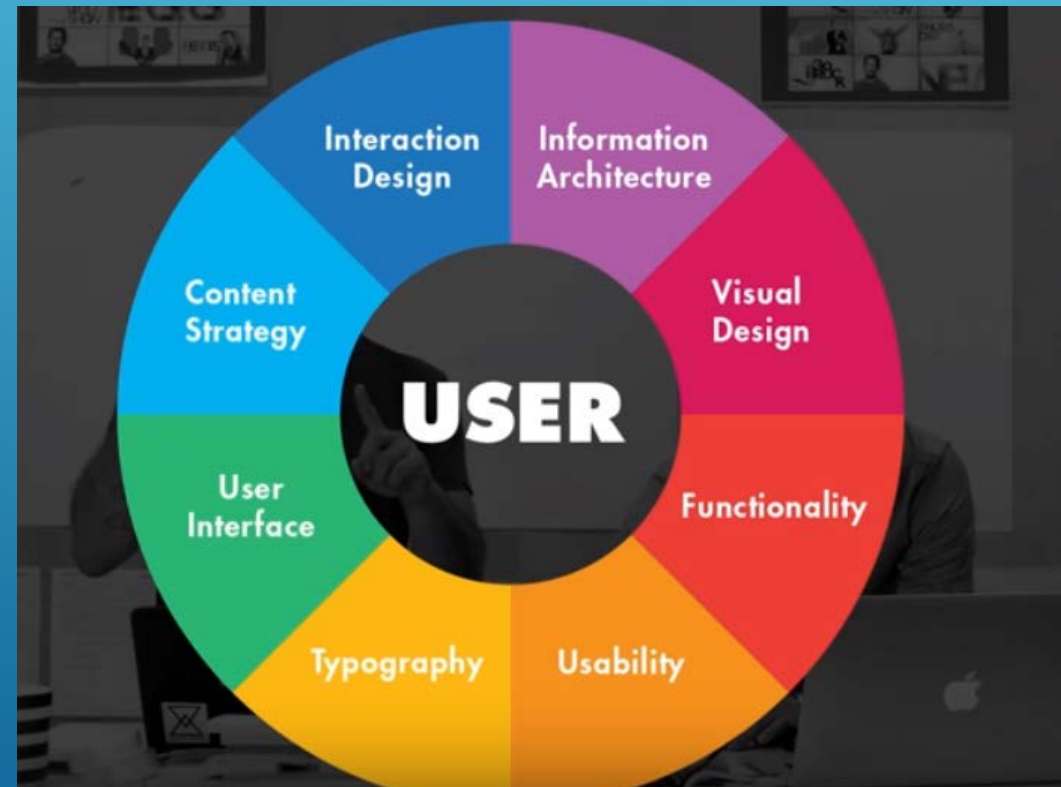
Bug Bash by Hans Björndahl

<http://www.bugbash.net/>

- ▶ User study

- ▶ <https://www.youtube.com/watch?v=G1mIJ9OM6KA>

USER ROLES!!




CORE


Brand Attributes

CULTURE	CUSTOMER	VOICE	BENEFIT	VALUE	X-FACTOR

User Profiles

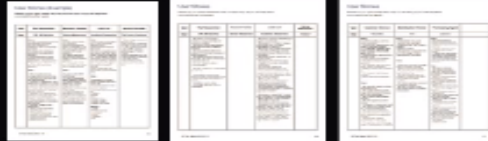


Priorities




UX

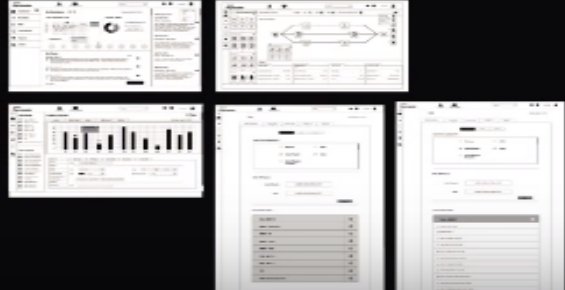
User Stories



Site Map



Wireframes



FROM USER-CENTERED DESIGN TO UX DESIGN

- ▶ Who the customer is
- ▶ What their challenges are
- ▶ How you can solve them?

User profile: Students

Timo 33 student

The challenges / Scenario

- *Need to access to the course*
- *Perform their educational task while away*
- *Avoid complexity*

Solutions / Needs

- Mobile/ Online Material
- Educational Activities
- Manage courses

User profile: The school

Sauli 50 Teachers

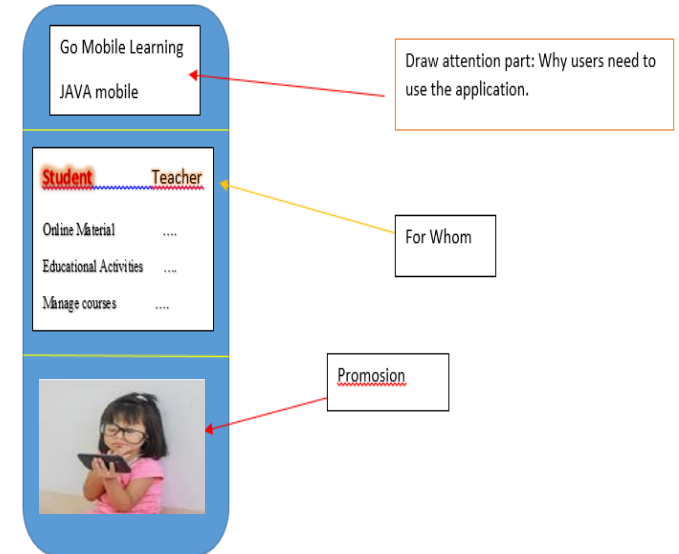
Challenges:

- Course process
- Keep track of students' performance
- Grading

Solutions:

- Course process change / online material
- Back-end to keep track
- Access to the Winha anytime / any places

Design:



UI/UX DESIGN WHAT ARE THE DIFFERENCES...



1. Narrow your scope: small sample, easy to implement, faster to implement, e.g., amazon (Only books), google (search (12th in the ranging as a search engine), not android), twitter (only for SMS)
2. Build (Scenario / persona) whether, all users use this? Jarmo, Ahti!
 1. Low and hi prototype
3. Test/collect feedback
4. Simplify



UX DESIGN PRINCIPLE



- ▶ Goals After completion of this course you will be able to
 - ▶ Describe the role of product prototyping in the product development process □
 - ▶ Describe the relation and the difference between virtual and physical prototypes
 - ▶ Describe different methods to manufacture physical prototypes and when to select one before another □
 - ▶ Select a prototype method to manufacture a specific prototype and motivate this choice with respect to purpose, cost, time and quality

GOAL

All lecturers are mandatory for all students.

- ▶ Rapid Prototyping and Engineering Applications, A Toolbox for Prototype Development, Liou, Frank W. ISBN 0-8493-3409-8

REFERENCE

All lecturers are mandatory for all students.

- ▶ This course aims to bring an overview of available methods for prototyping as well as knowledge of practical handling of a selected number of those.
- ▶ This means that a large part of the course is assigned to designing artifacts and exercises for preparing for the final project.
- ▶ The theoretical course content is presented at the lectures and at the last part of the course includes a project work where a prototype is to be constructed and manufactured.
- ▶ **All lectures are mandatory for all students.**

ACTIVITIES

- ▶ The course is mainly based on a project work where you will be given a design concept (or your own) for which you together with a number of other students will design a prototype and manufacture it using the methods that you have trained at during the lecture
- ▶ This final result of the project work will be presented and a written report is also required. More information about the project will be given during the course.

ACTIVITIES

Activity	Percentage	Report
Project	20%	Team
Class activities	20%	Team / individual
Final Report	50%	Team
Individual activity	10%	Indicidual

PASSING THE COURSE

- ▶ In UX course we have talked about:
 - ▶ How to study users
 - ▶ Ethnography
 - ▶ Surveys
 - ▶ Interviews
 - ▶ How to structure that data
 - ▶ Hierarchical Task Analysis
 - ▶ Use Cases/Scenarios
 - ▶ How to interpret data (Scenario)
- ▶ So, what do we do with this knowledge?

WHERE WE ARE...

Prototyping is the process of quickly putting together a working model (a prototype) in order to test various aspects of a design, illustrate ideas or features and gather early user feedback.- [Wikipedia](#)

IEEE defines **prototyping** as “ A type of development in which emphasis is placed on developing prototypes early in the development process to permit early feedback and analysis in support of the development process.”

PROTOTYPING DEFINED

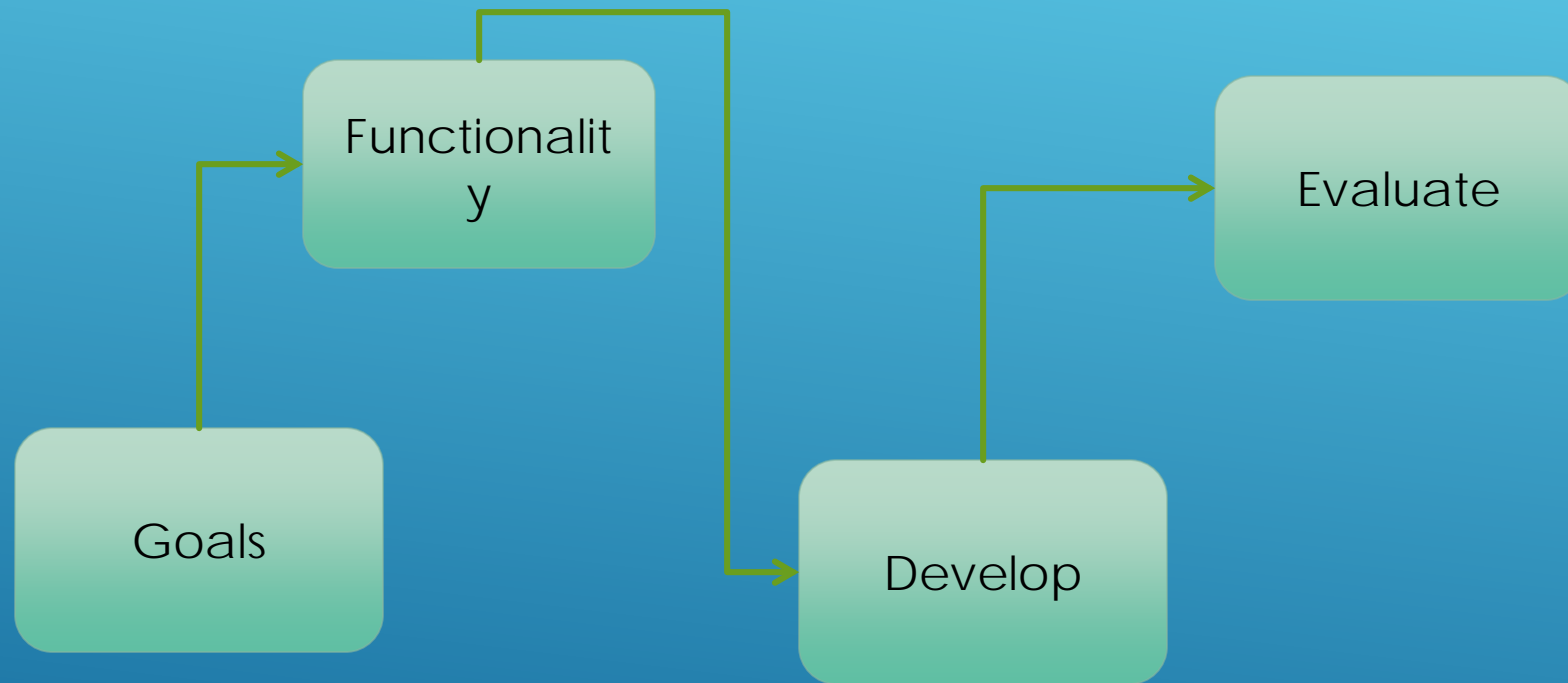
- ▶ Enables us to explore the problem space with the stakeholders.
- ▶ As a requirements artifact to initially envision the system.
- ▶ As a design artifact that enables us to explore the solution space of your system.
- ▶ A vehicle for you to communicate the possible UI design(s) of your system.
- ▶ A potential foundation from which to continue developing the system

NEED FOR PROTOTYPING

ADVANTAGES & DISADVANTAGES OF PROTOTYPING

<u>Advantages</u>	<u>Disadvantages</u>
Users can try the system and provide constructive feedback during development	Each iteration builds on the previous iteration and further refines the solution. This makes it difficult to reject the initial solution as inappropriate and start over.
An operational prototype can be produced in weeks	Formal end-of-phase reviews do not occur. Thus, it is very difficult to contain the scope of the prototype.
Users become more positive about implementing the system as they see a solution emerging that will meet their needs	System documentation is often absent or incomplete, since the primary focus is on development of the prototype.
Prototyping enables early detection of errors	System backup and recovery, performance, and security issues can be overlooked.

JOURNEY OF THE PROTOTYPING PROCESS



- Client may believe that system is real.
 - Unrealistic expectations of the progress
- Implementers make poor choice
 - Justified in prototype but not in real system
 - Tempting to build real system same way
- Prototype is not identical to the real system
 - Users may interact differently due to different response characteristics
 - Must interpret prototype experience with care

RISKS IN PROTOTYPING

Two “points of interest” for companies to adopt prototyping based methodologies are:

- ▶ Point 1: They allow us to reduce the cost and time-to-market of a system.
- ▶ Point 2: For companies building critical systems, prototyping would help them perform formal verification when required. These methodologies provide high level of reliability in the system design and implementation.



DO WE NEED PROTOTYPING??

- ▶ Artifacts of one or few dimension of a potential product
 - ▶ Will it work?
 - ▶ Will the user like it?
- ▶ Prototype Milestones (Often) for proof of concept
 - ▶ Alfa:A1
 - ▶ Beta:b1-b4 (This is the version that some stakeholders are get access)
 - ▶ Gama
- ▶ Therefore, the product which we have in hand goes through many iterations to get a product to sell

PROTOTYPE

- ▶ Not necessary after concept design
 - ▶ Problem Definition (Focused prototype)
 - ▶ Answer some question
 - ▶ Communication with boss or within a team (Comprehensive prototype)

- ▶ Physical prototypes (Use some material to build)

- ▶ Analytical prototypes

WHY PROTOTYPE





FOCUSED, PHYSICAL PROTOTYPE



ANALYTICAL PROTOTYPE

For users to effectively evaluate the design of an interactive product, designers must produce an interactive version of their ideas, this activity is called prototyping.

- ▶ In **other design fields** a prototype is a small-scale model:
 - ▶ a miniature car
 - ▶ a model of a building
- ▶ In **interaction design** it can be
 - ▶ a series of screen sketches
 - ▶ a PowerPoint slide show
 - ▶ a video simulating the use of a system
 - ▶ a lump of wood, e.g. hand-held computer
 - ▶ a cardboard mock-up
 - ▶ a piece of software with limited functionality

WHAT IS A PROTOTYPE?

- ▶ Design a panel or a device for housekeepers in hotel?

EXERCISE





GOOGLE SKETCHUP

<http://www.sketchup.com/>

1. Learn google sketch up as a team
2. Use <http://www.sketchup.com/> to design the car monitor prototype

EXERCISE II