User Experience Design I
(Interaction Design)
Day 6 - (17.12.2020 9-12 a.m.)

Prototyping User Experiences
- Prototyping Values and Dimensions
- Low vs. High Fidelity
- Sketching-in-Hardware
- Video-Prototyping
Prototyping User Experiences

• Prototyping values and dimensions

• Examples: Physical Experience Prototypes

• UX Video Prototyping
“It’s really hard to design products by focus groups. A lot of times, people don’t know what they want until you show it to them.”

Steve Jobs
**Define Stage**

- The generation of initial ideas and project development
- Ongoing project management
- Corporate objectives agreed and project sign-off

At the Define stage, a combination of the ideas or directions identified during the Discover stage are analysed and synthesised into a brief with actionable tasks related to new and existing product or service development. The Define stage ends with a clear definition of the problem(s) and a plan for how to address this through a design-led product or service. In practice, the Define stage ends in a project go-ahead through corporate level sign-off.

Source: [8]
An original type, form, or instance that serves as a model on which later stages are based and judged.

American Heritage Dictionary
Three main design contexts in the UX domain which can be expressed through prototypes:

1.) Screen based interactions
2.) Interactive products
3.) Technology enabled services
Creating Experience Prototypes during the design process pursues different goals:

1.) Exploring a context / research
2.) Examining design problems / testing
3.) Evaluating solutions / presentation
In summary:

Prototypes are **design-thinking enablers** deeply embedded and immersed in UX design practice.

Prototypes are **learning and discovery tools** for generating and refining UX design ideas.

source: [6]
©Peter Morville
http://semanticstudios.com
A principle for setting priorities: users will use 20% of the features of your product 80% of the time. Focus the majority of your design and development effort (80%) on the most important 20% of the product.

http://www.swissknifeshop.com/media/catalog/product/cache/1/image/5e06319eda06f020e43594a9c230972d/v/m/vm_53831--91_sol_front_ax1000.jpg

source: [7]
Horizontal vs, Vertical Prototypes

80/20 rule
For the Designer:
- Exploration
- Visualisation
- Feasibly
- Inspiration
- Collaboration

For the End User:
- Effectiveness / Usefulness
- A change of viewpoint
- Usability
- Desirability

For the Producer:
- Conviction
- Specification
- Benchmarking

source: [5]
Fidelity v. Resolution

low resolution  
low fidelity

high resolution  
low fidelity

high resolution  
high fidelity

resolution = amount of detail
fidelity = closeness to the eventual design (product/service)

source: [5,8]
High Fidelity

Low Fidelity

Open Discussion
Prompting Required
Quick and Dirty
Early Validation

Sharp Opinions
Self Explanatory
Deliberate and Refined
Concrete Ideas

source: [5,8]
Low Resolution

Less Details
Focus on core interactions
Quick and Dirty
Early Validation

High Resolution

More Details
Focus on the whole
Deliberate and Refined
Concrete Ideas

source: [5,8]
Prototyping User Experiences from scratch

- Sketches and Wireframes
- Paper Prototypes
- Storyboards

1st Iteration
low-res/low-fi
Prototyping User Experiences from scratch

- Design drafts and mock-ups
- Functional prototypes
- 3D Printing
Sketching in Hardware...

...is an annual summit on the design and use of physical computing toolkits. Participants from a wide variety of disciplines and backgrounds discuss tools for creating digital products, environments, and experiences: how to make them, why to make them (and why not), how to use them, how to teach with them, and how to understand their impact.

http://sketching-in-hardware.com/
Force Sensor

Potentiometer

Magnet Switch
Distance IR Sensor

Touch QT Sensor

Ultrasound Sensor
MINIMUM Viable Product

Best products to startups

Crappy products

Minimum

Viable

Better-financed products
Prototyping User Experiences for products using
- Embedded Platforms
- Off-the-shelf-components
- Customised hardware
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Design Workshop II

LMU München – Medieninformatik – Alexander Wiethoff – UX 1 - WS2021
Design Workshop II
...to Prototype!
Design Workshop II
In conjunction with B/S/H (Neff)
Home Appliances

- 12 MA Media Informatics Students
- Duration: One semester
- Topic: Tactile Feedback
Prototypes
Prototypes
Prototypes
Design Workshop II
In conjunction with Acelik Home Appliances

• 16 MA Industrial Design Students
• 14 MA Human-Computer Interaction Students
• Duration: One semester
Reminding Water Dispenser
Pure Air
Dirt Buster
Recipe Printer
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“Why prototype with video?”

Representing complex relationships, new behaviours and attitudes are an integral part of UX design. These can be represented through many means including sketching and making physical prototypes. However, capturing a journey **over time** requires a linear medium like video.
“Just enough Prototyping”

Understand your audience and choose the right level of resolution and fidelity. Judge the time and resources available. Go for the easiest and **simplest track**, don’t overdo you prototype for a given context.
Example

low resolution
high fidelity
(crossing on demand)
The Smoke & Mirror Approach
StreetView Game
StreetView Game
Tutorials

Keyboard Hacking Tutorials

Physical Computing Intro
https://itp.nyu.edu/physcomp/

Arduino Tutorials

Physical Computing w. Raspberry PI

Adafruit Hacking Tutorials
https://learn.adafruit.com/
References: