

Interaction Design

Chapter 7 (May 30, 2012, 9am-12pm):
Prototypes

Prototypes

- Benefits of Prototypes
- Low vs. High Fidelity / Resolution
- Interacting with Paper
- Video Envisionment and the Wonderful Wizard of Oz
- Sketching in Hardware
- Different Prototypes in the Design Process

INTERACTION DESIGN



INTERACTION DESIGN



Why Prototype ?



Prototyping as a proof of concept

photo credits © alexander wiethoff

Prototyping as a design process



photo credits © alexander wiethoff



Prototyping as a communication tool

photo credits © alexander wiethoff

For the Designer: Exploration
Visualization
Feasibility
Inspiration
Collaboration

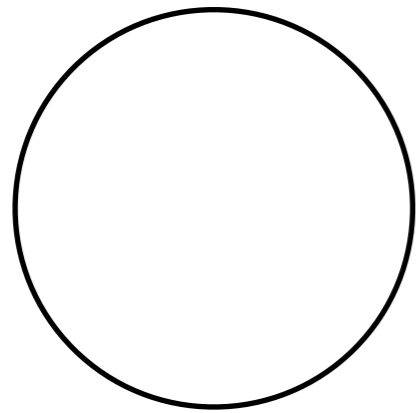
For the End User: Usefulness
A change of viewpoint
Usability
Desirability

For the Producer: Conviction
Specification
Benchmarking

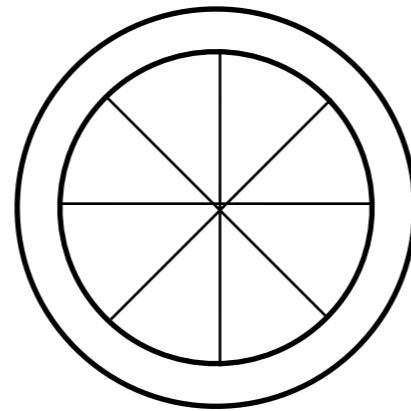
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Fidelity v. Resolution



low resolution
low fidelity



low resolution
high fidelity



high resolution
high fidelity

Low Fidelity

High Fidelity



Open Discussion

Sharp
Opinions

Prompting
Required

Self Explanatory

Quick and Dirty

Deliberate and Refined

Early Validation

Concrete Ideas

Low Resolution

High Resolution



Less Details

Focus on core interactions

Quick and Dirty

Early Validation

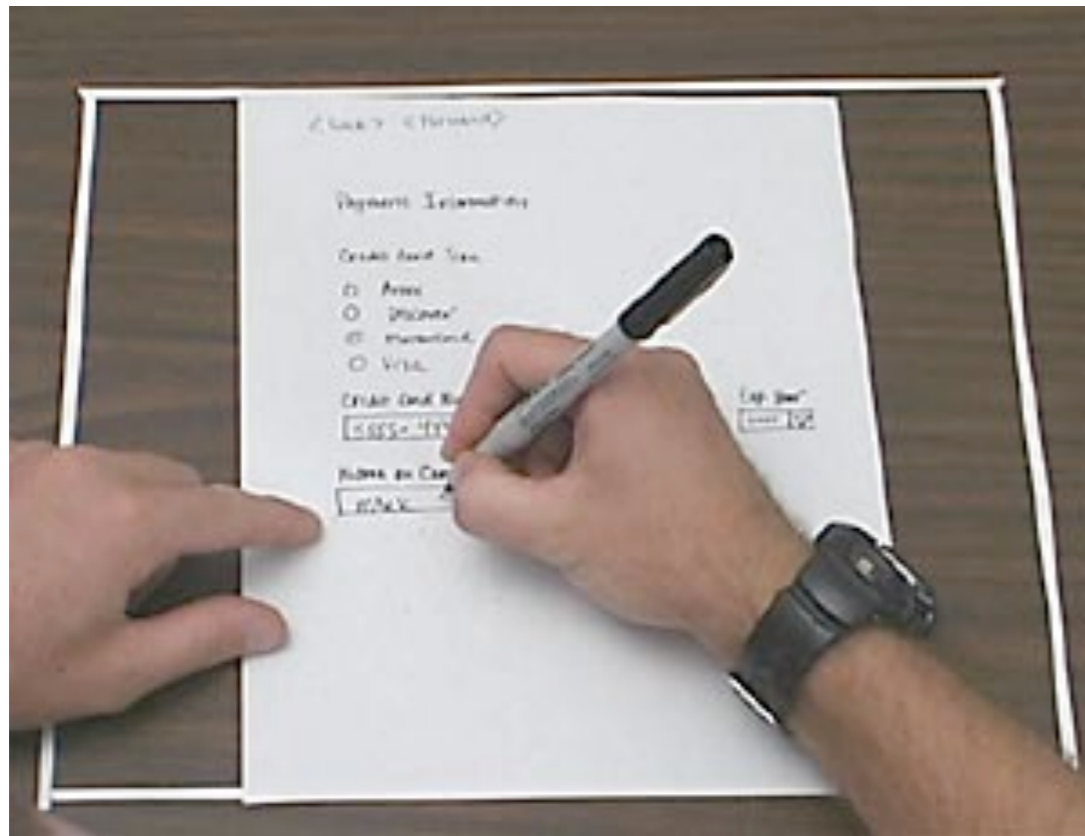
More Details

Focus on the whole

Deliberate and Refined

Concrete Ideas

looking back.....



User test of a low-fidelity paper prototype of a website

vs.



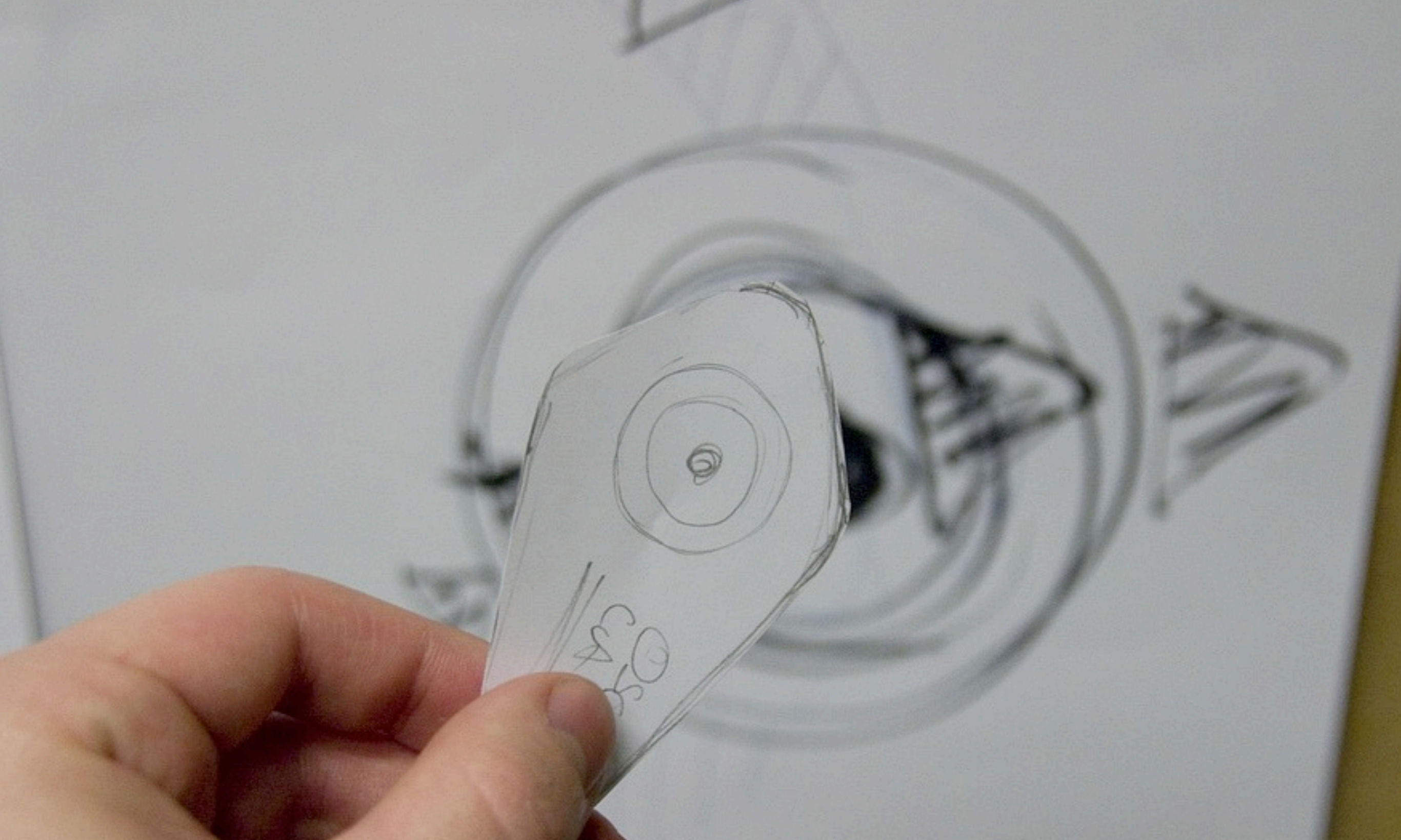
User test of a high-fidelity paper prototype of a homepage.

3 Main Prototyping Pillars and Directions

Paper Prototyping Video Prototyping Hardware Prototyping

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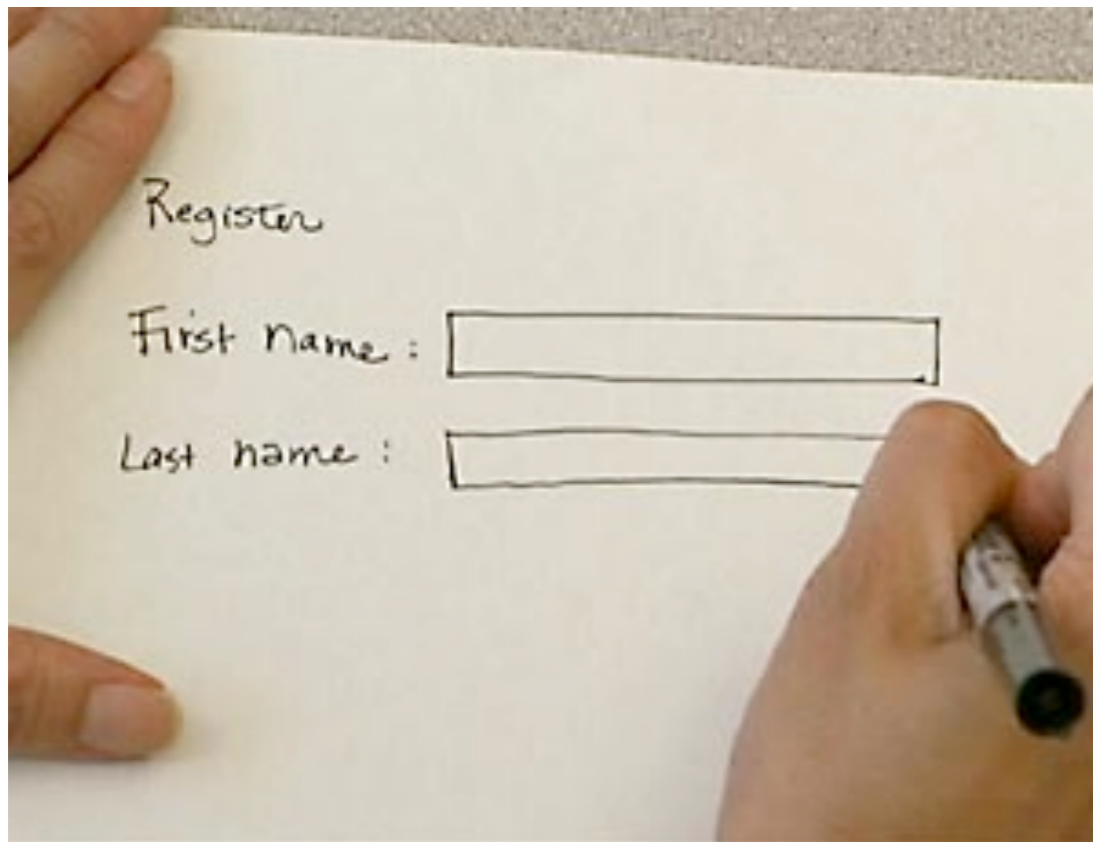
Paper-prototyping

What is it?

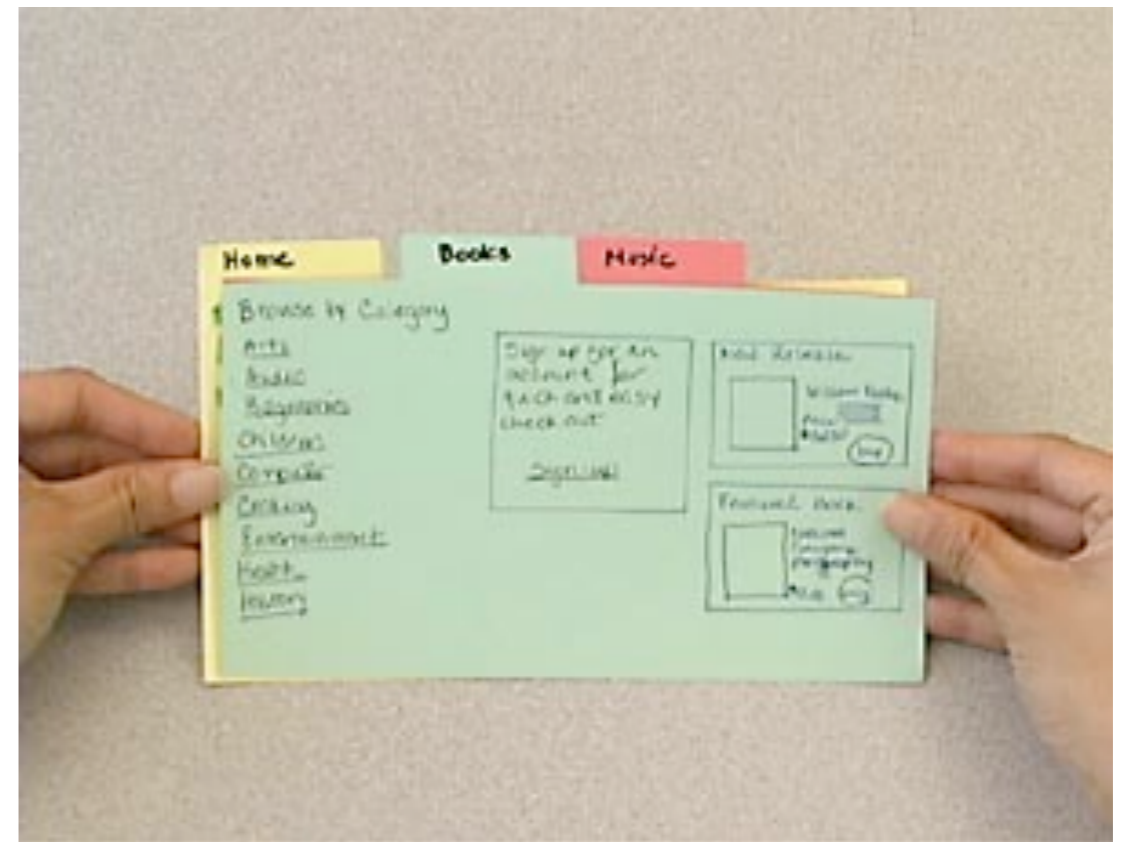
- widely used **method** in the user-centered design process
- helps developers to create **screen based** applications that meets the user's expectations and needs.
- throwaway prototyping** and involves creating rough, even hand sketched, drawings of an interface to use as prototypes, or models, of a design.

History of Paper Prototyping

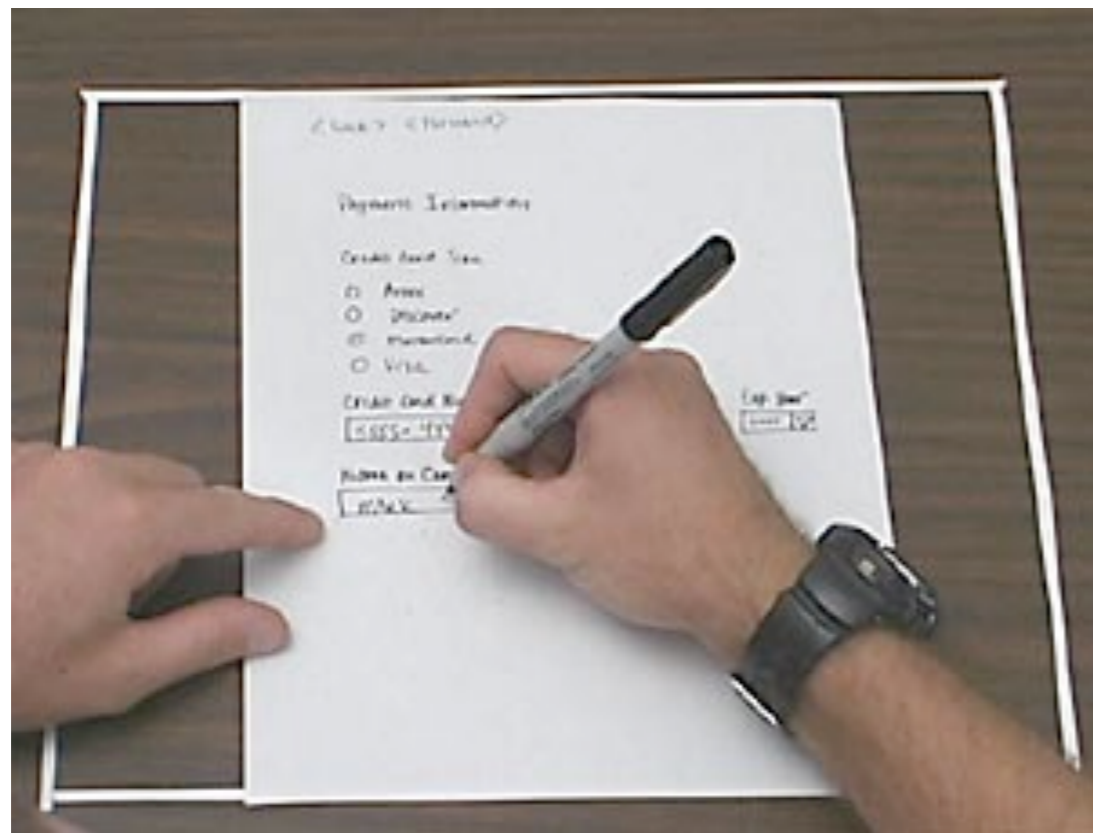
- started in the mid 1980s
- became popular in the mid 1990s when companies such as IBM, Honeywell, Microsoft, and others started using the technique in developing their products.



Typical form-filling screen



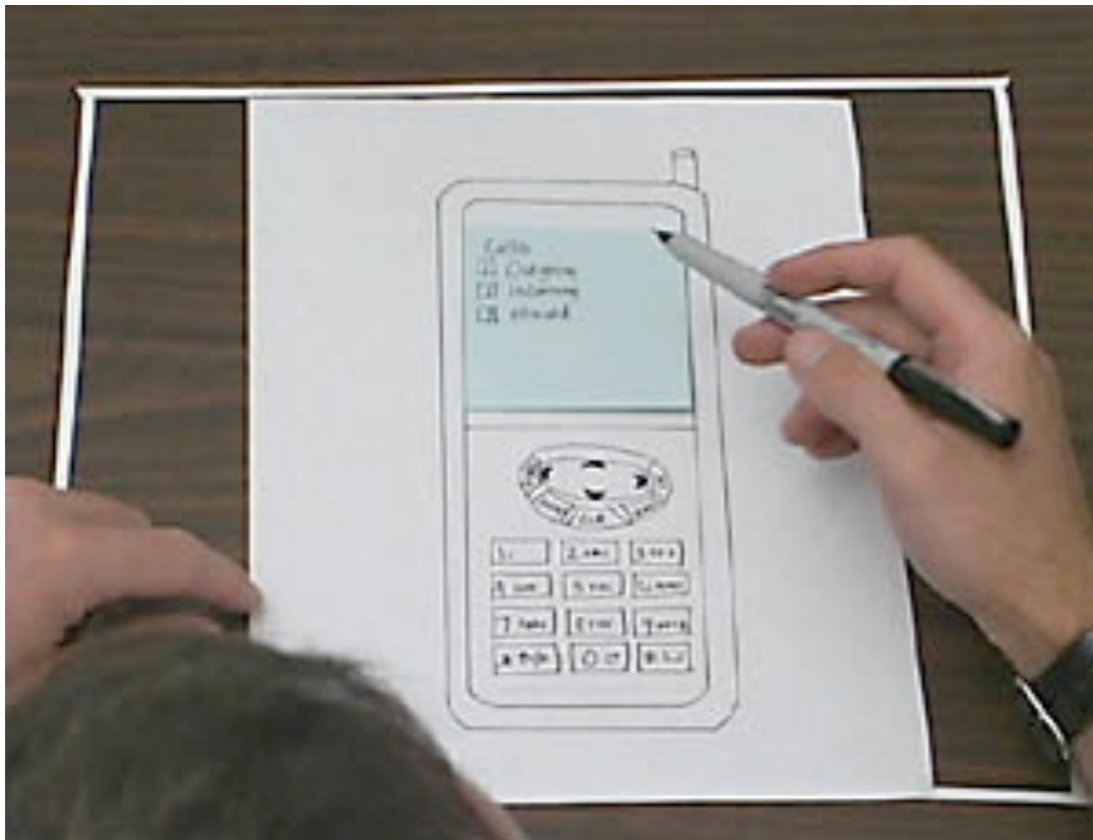
Tabs-based design



User test of a paper prototype



Typical set-up of a usability test



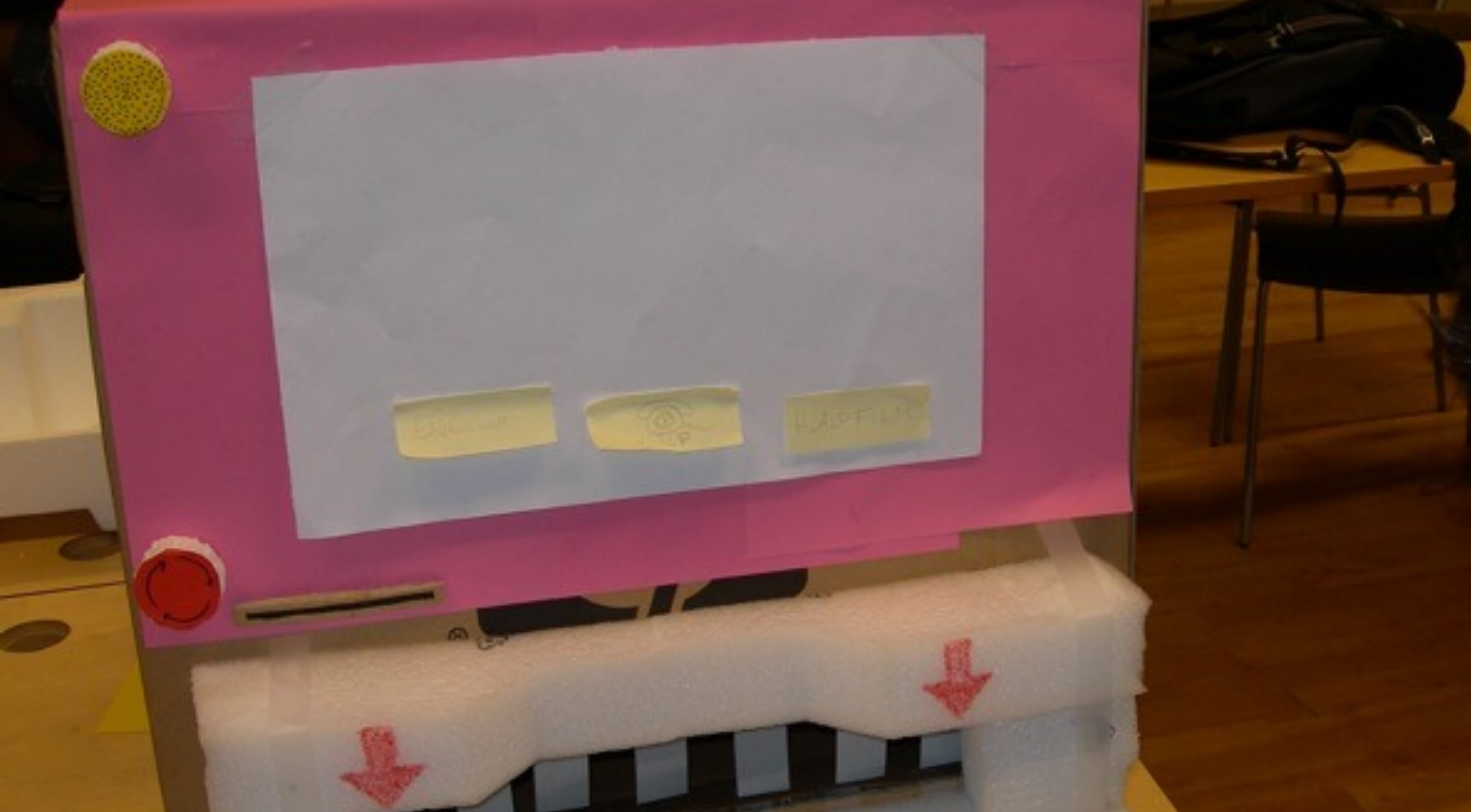
Device-based interaction



High-fidelity prototype of a homepage.



Mockup of a kiosk.



You can mockup real size products and environments which capture a degree of realism and while keeping it open for interpretation or further development.



Daum *[faded text]*



[Faded menu items]

[Faded menu items]

[Faded menu item]

<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>
<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>
<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>
<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>	<i>[Faded]</i>
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Video-prototyping

Image Source: CIID



Dealership

Work place

Home

Call centre

On-line support

EXAMPLE: Video Prototypes

low resolution
low fidelity
(a whole new world)

A whole new world

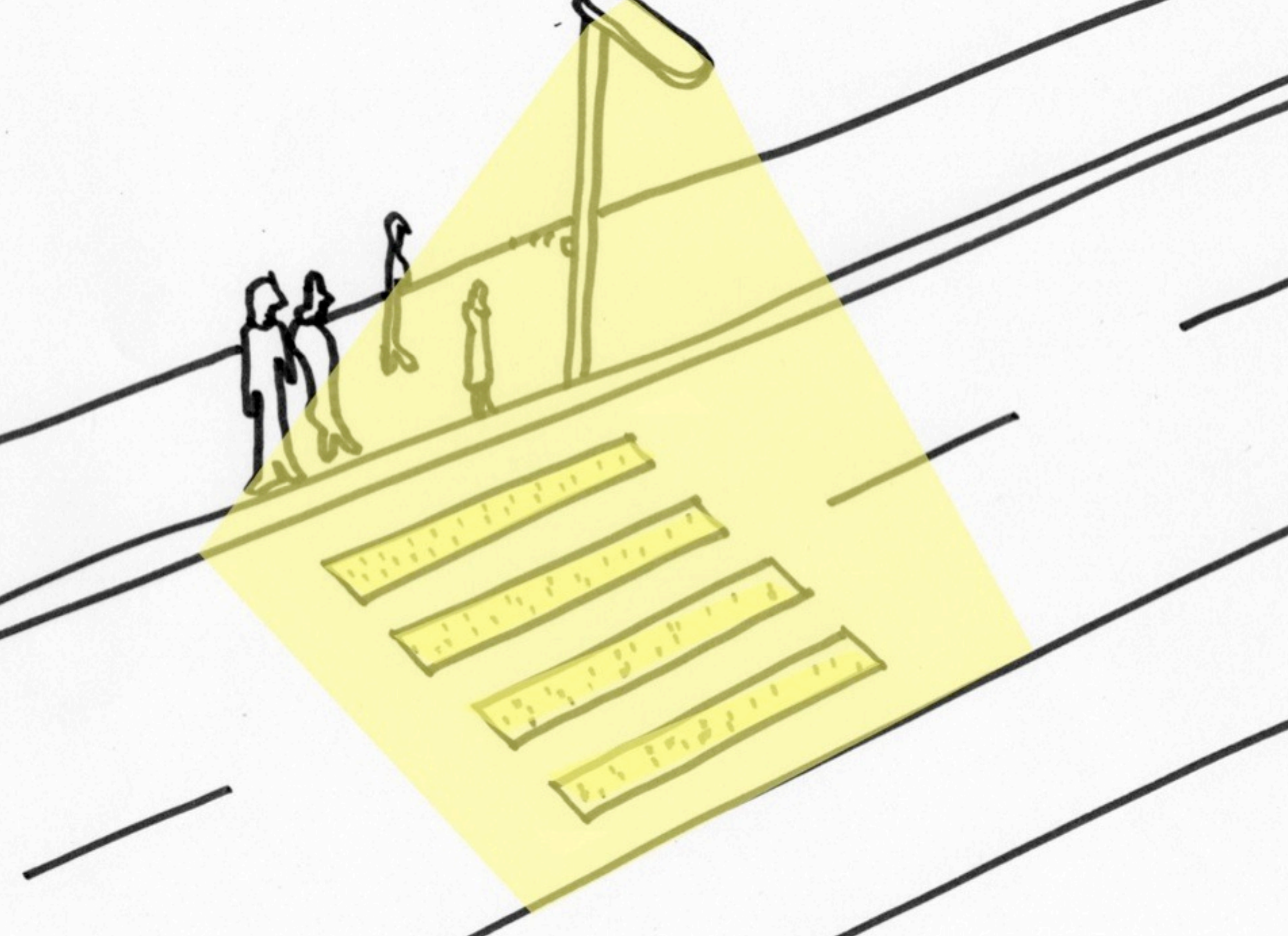
video phone



high resolution
low fidelity
(rotterdam hospital)

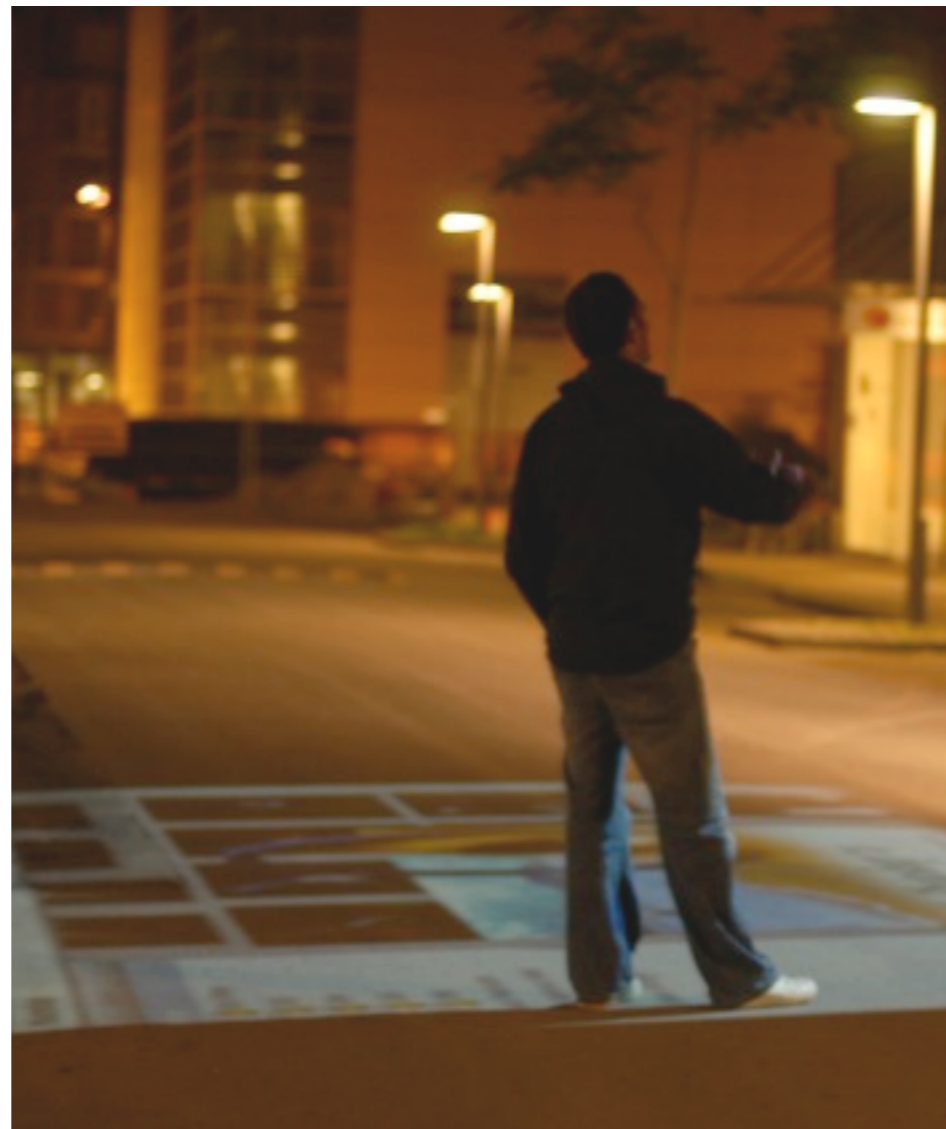


low resolution
high fidelity
(crossing on demand)



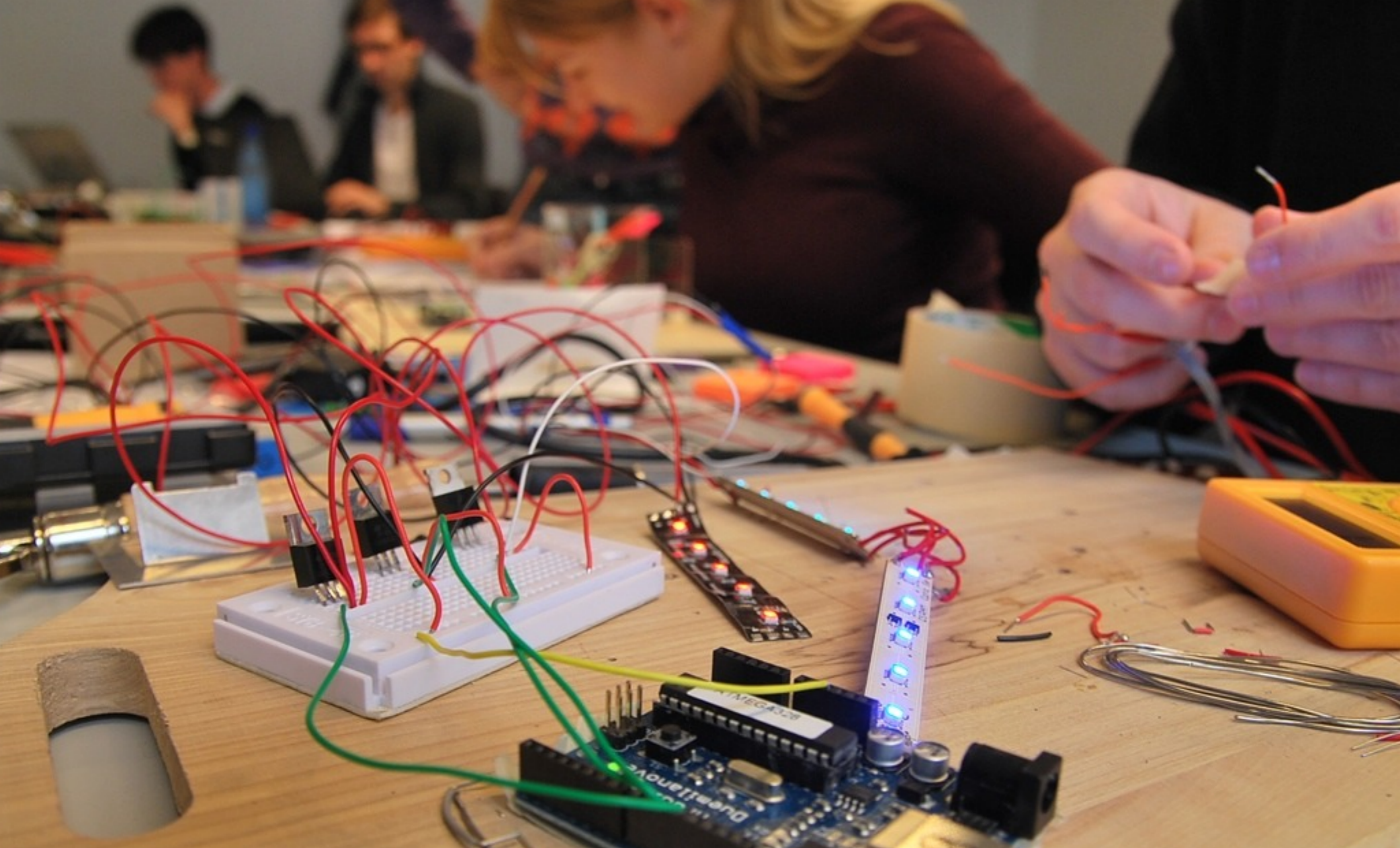
Zebra Zone

The Smoke & Mirror Approach



Prototypes

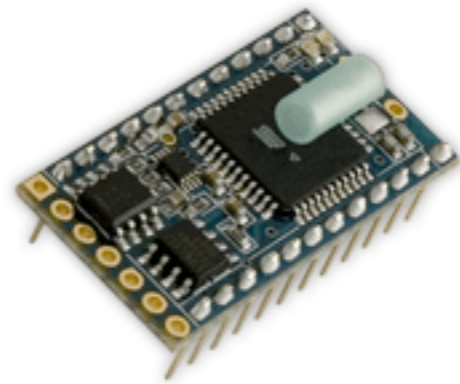
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Sketching with Hardware



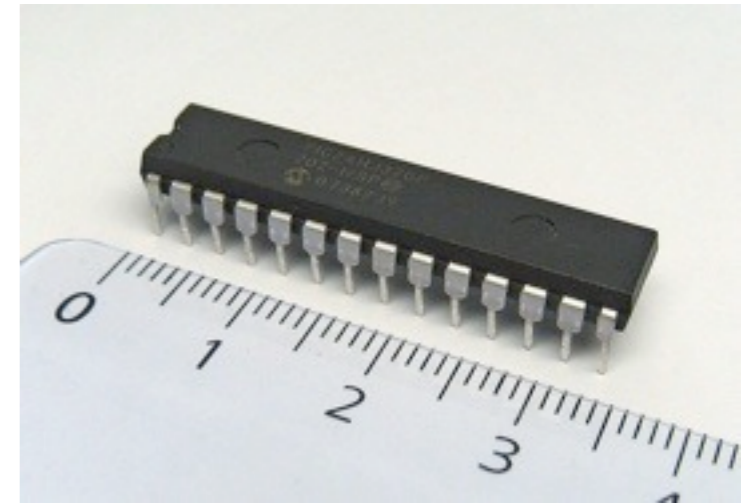
basic stamp



bx 24



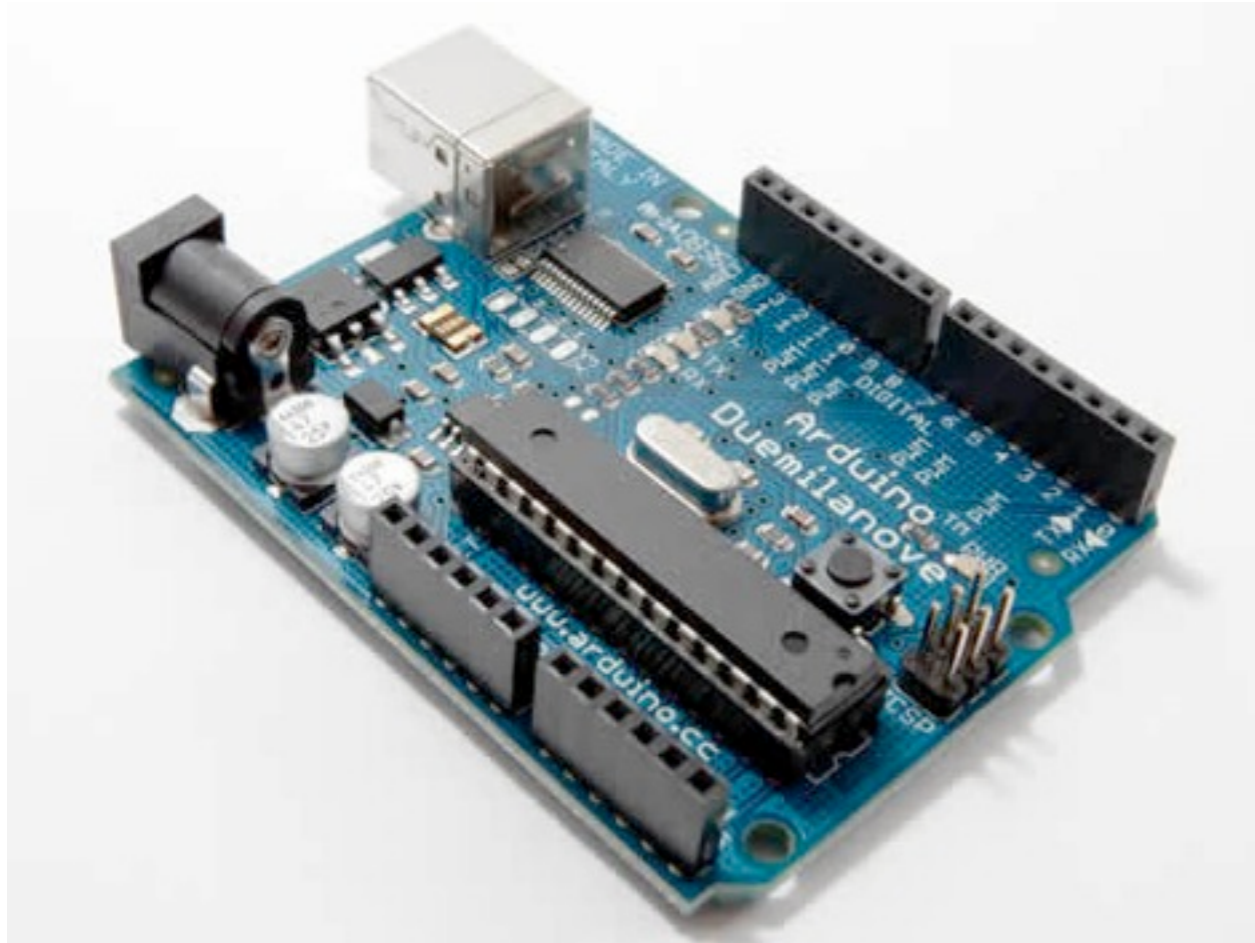
basic atom



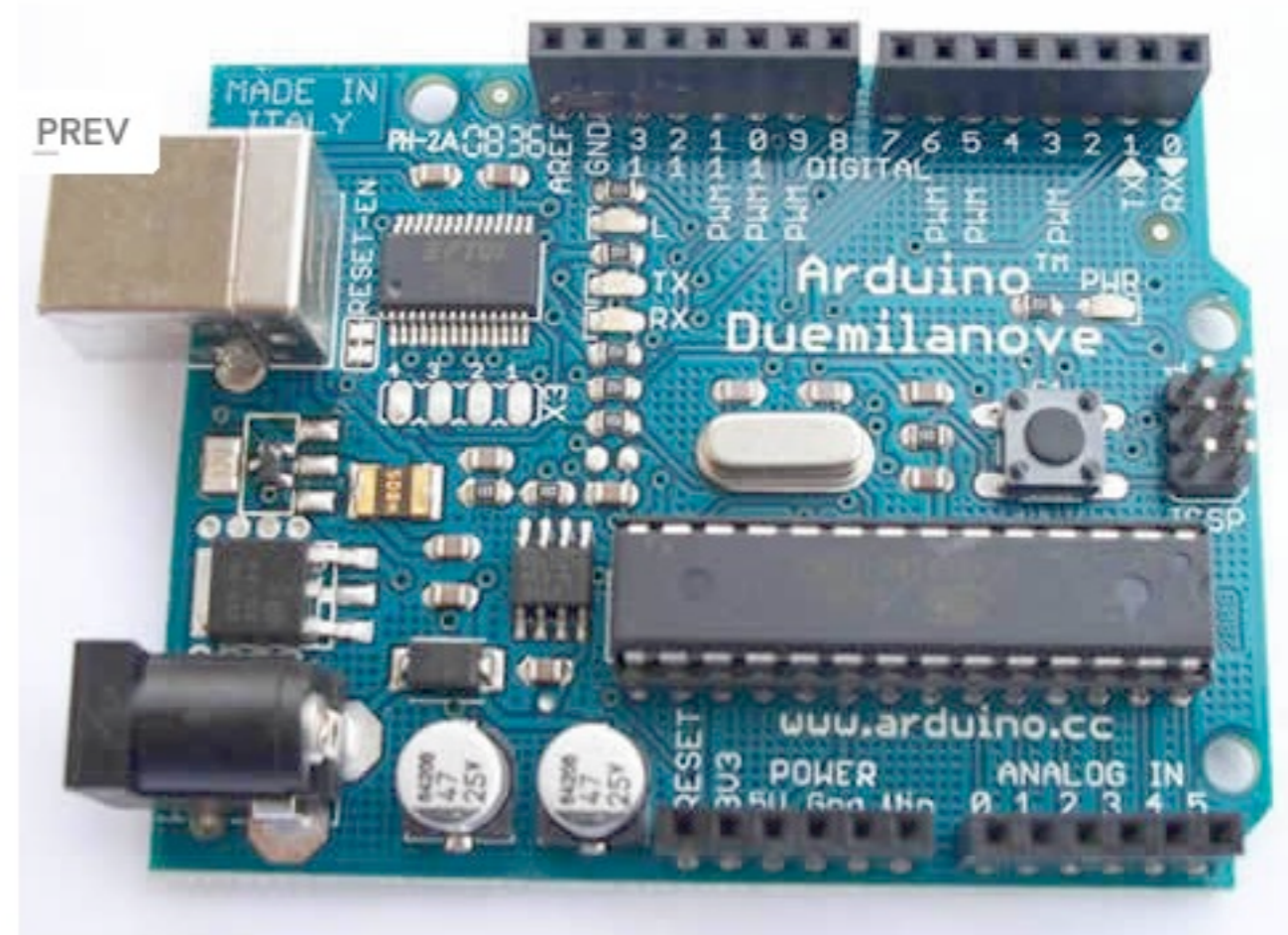
pic



Assembly



Atmel AT Mega 328



Atmel AT Mega 328



Thermistor



Bend Sensor



PIR Sensor



Force Sensor



Potentiometer



Magnet Switch



Distance IR Sensor

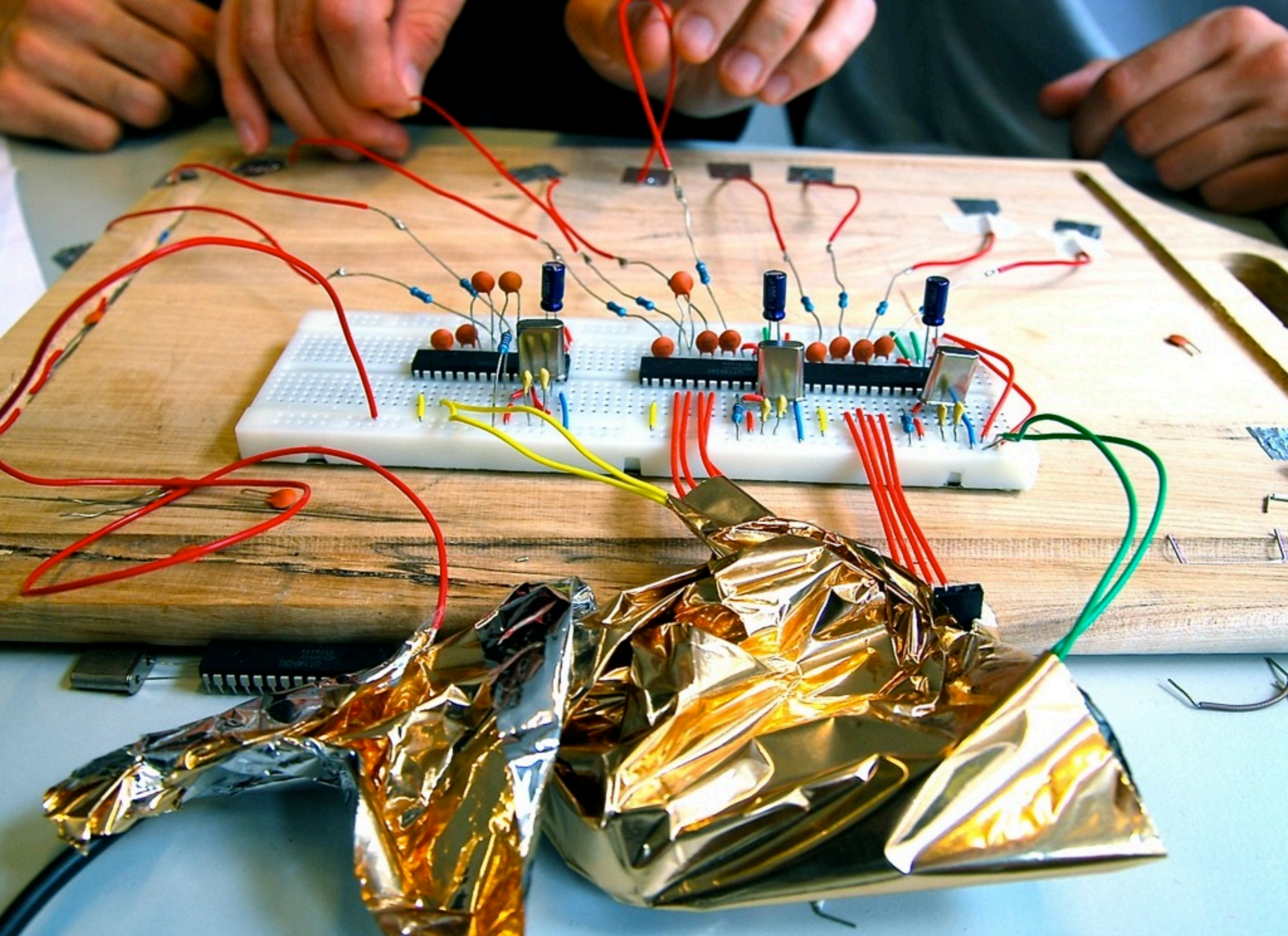


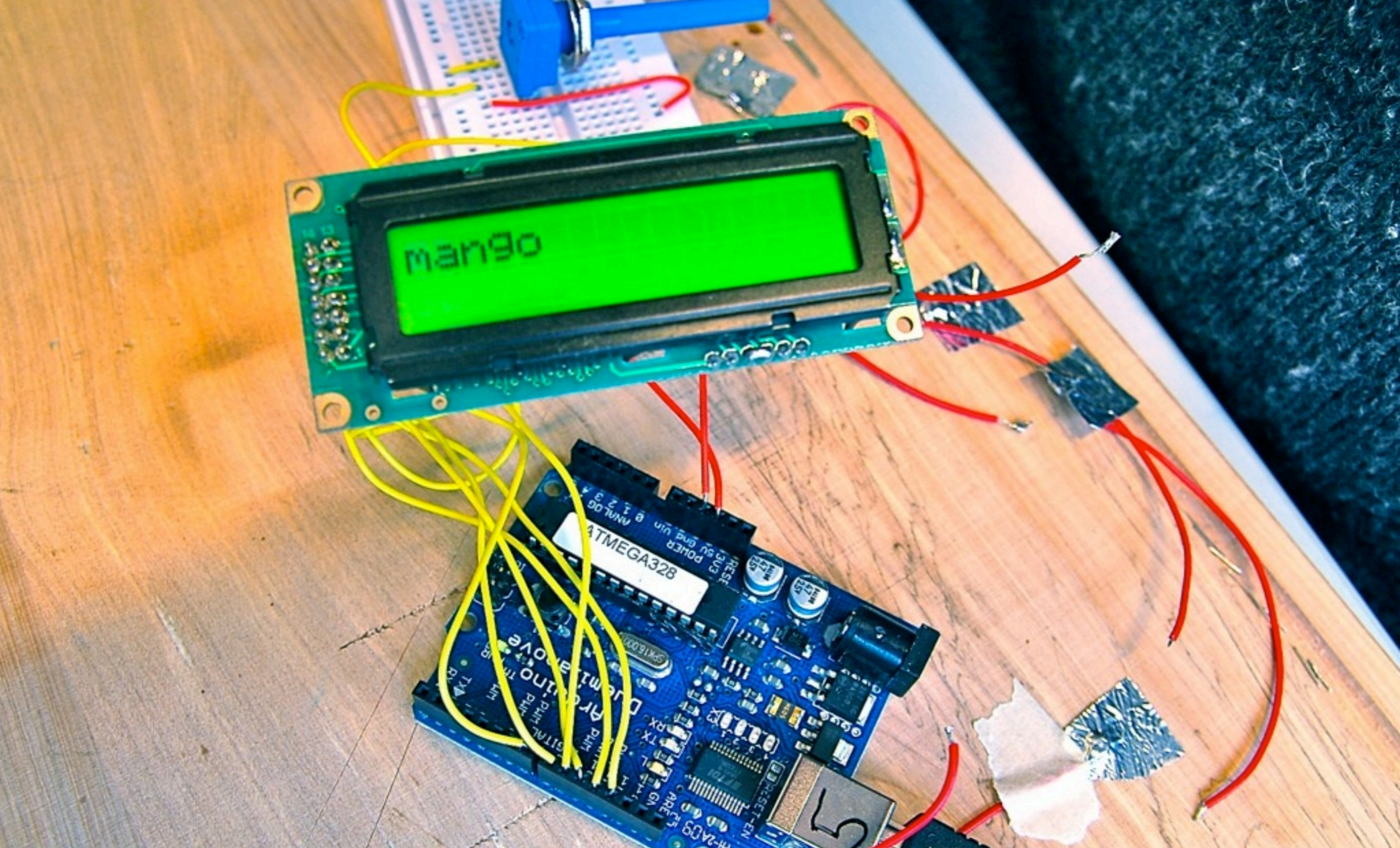
Touch QT Sensor



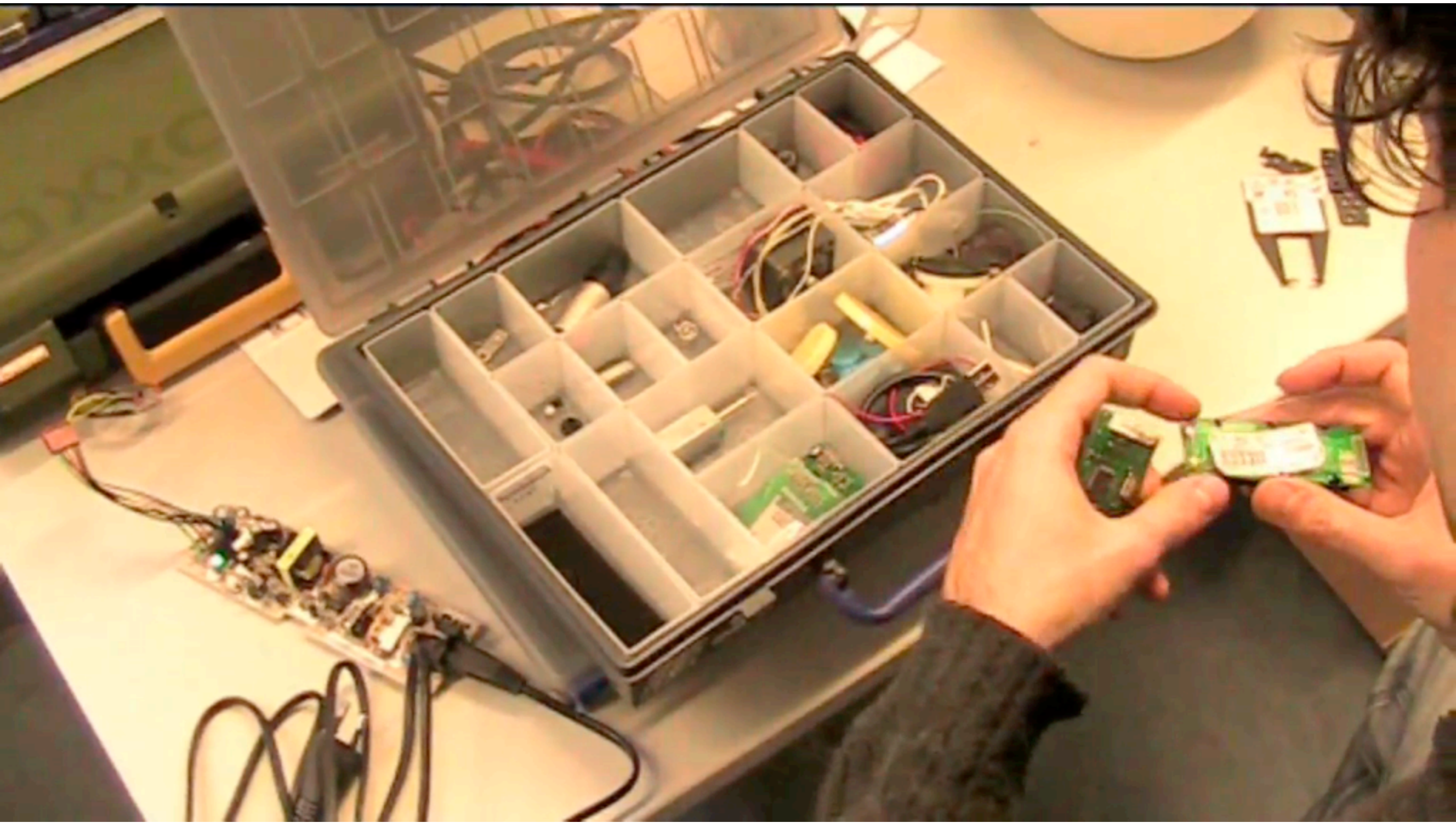
Ultrasound Sensor







Quick video overview



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Some Examples
from a school
called
**Copenhagen
Institute of
Interaction
Design
(CIID)**

photo credits © alexander wiethoff



Some Examples from a school called **Copenhagen Institute of Interaction Design (CIID)**

photo credits © alexander wiethoff

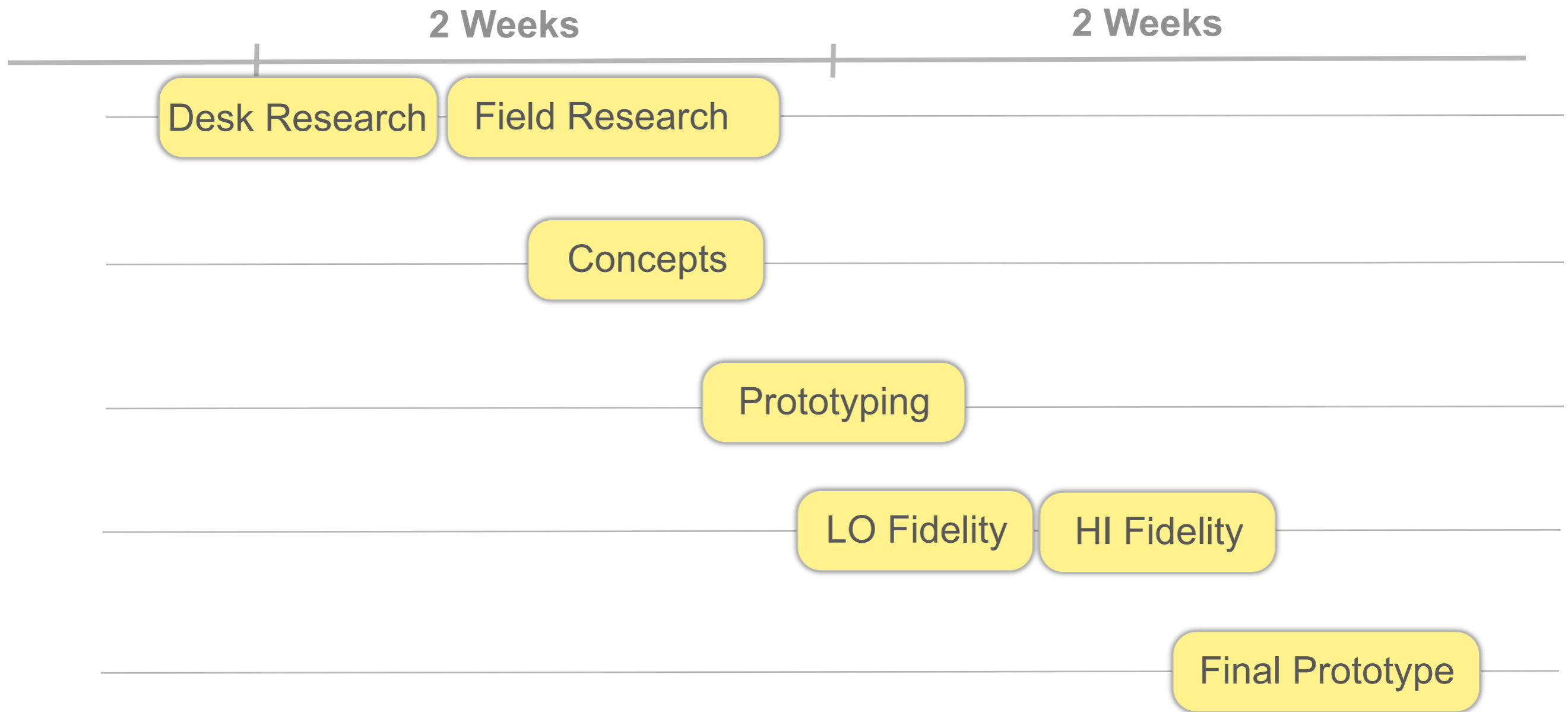
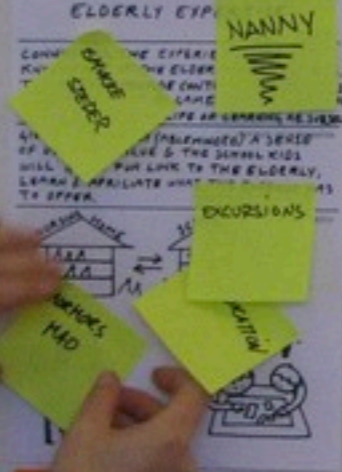




photo credits © ujval panchal

→ SOCIAL NETWORKING
 → OTIUM™
 → SCREEN WALL
 → E-MAIL - TO - LETTER
 → SKYPE - TV
 → FAMILY FRAME + POLAROID
 → ELDERLY AS RESOURCE (GREENHOUSE)
 → GREEN HOUSE (PET HOME?)
 → TIME MACHINE
 → STORYTELLING DEVICE
 → MEMORY - TRIVIA

ELDERLY EXP...
 CONN... THE EXPERI...
 KN... THE ELDER...
 THE ONTI...
 SAME...
 LIFE AN...
 (P...)
 A SERIE...
 OF...
 THE SIMIL...
 WILL...
 FOR LINK TO THE ELDERLY...
 LEARN...
 TO OFFER...



CHANGE ORDER
 NANNY
 EXCURSIONS
 HAD
 MENTOR

UI
 interface
 web portal
 for the
 elderly

SPECIALIZED
 BROADBAND
 REMOTE
 PROXY
 SERVER
 WINDOWS
 OTIUM™
 USED...
 WITH...
 TIME...
 DEVICE

TV channels
 elderly
 focus
 OTIUM
 PROXY

Content
 ...
 ...

RFID
 SHIRTLETTOR

...
 ...

MEMORIES
 - ...
 - ...
 ...

make
 storytelling

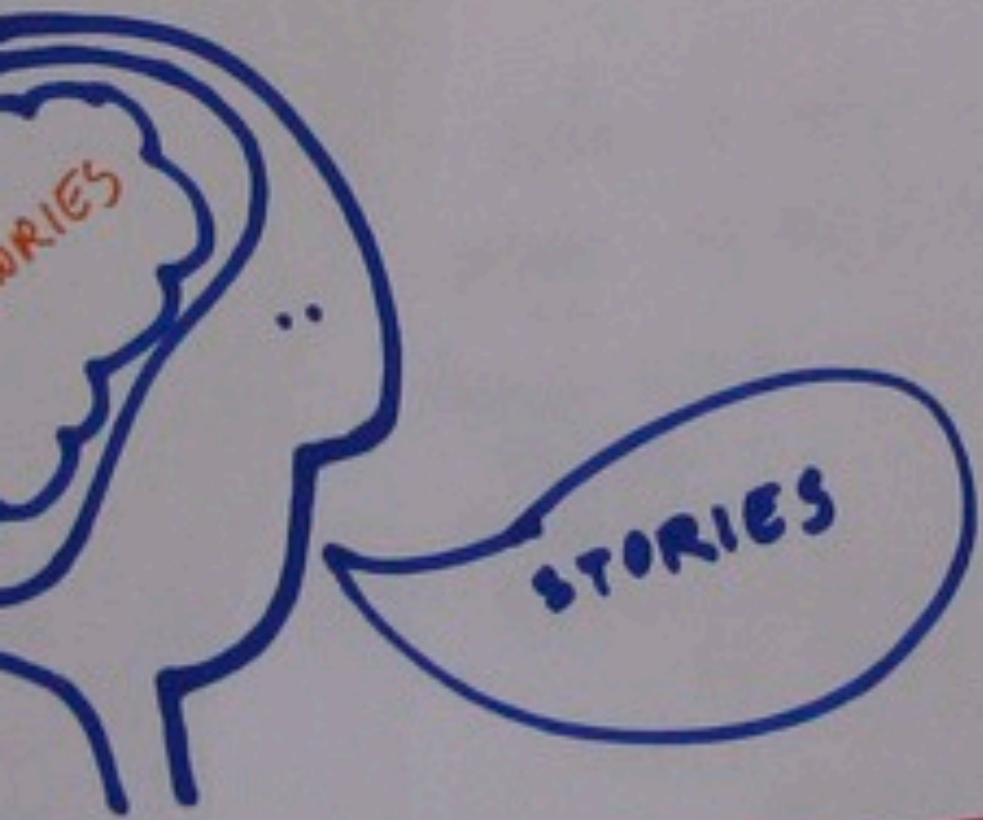
See through
 walls / ...
 ...
 ...
 ...
 ...

changing
 walls
 (walls ...
 into streets)

WIFI
 POLAROID

SKYPE / TV
 PICTURE
 FRAME
 ...
 ...





↳ Social studies!



THE ELDERLY (ONLY) EXPERIENCE USE THROUGH

THE ELDERLY (ONLY) EXPERIENCE USE THROUGH

THE TIME MACHINE

It's not about time... it's about the stories.

THE ELDERLY (ONLY) EXPERIENCE USE THROUGH

THE TIME MACHINE

It's not about time... it's about the stories.

THE ELDERLY (ONLY) EXPERIENCE USE THROUGH

TIME MACHINE

THE KIDS CAN TRAVEL IN TIME

THE ELDERLY

SAVING KIDDLER

SPIN FOR KETTER TO KETTER

SPIN FOR KETTER TO KETTER



THE TIME MACHINE

THE BUTTER AND THE MACHINERY

THE STORY MACHINE

THE VALUE MACHINE

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

STAR PROBLEM

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

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THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

SOCIAL NETWORKING BOTTOM

- SCREEN WALL
- E-MAIL - TO - LETTER
- SCOPE-TV
- FAMILY SCRAMBLE + PLEASIO
- ELDERLY AS REMOTE CONTROL
- GREEN HOUSE (FTV HAD)
- TIME MACHINE
- STRETCHING DEVICE
- NERVOUS TUNA

TIME MACHINE

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE

THE STORY MACHINE

THE VALUE MACHINE



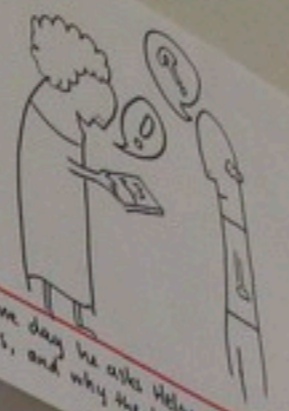
KEY VALUE

- Making old people reconnect with their past and their family.

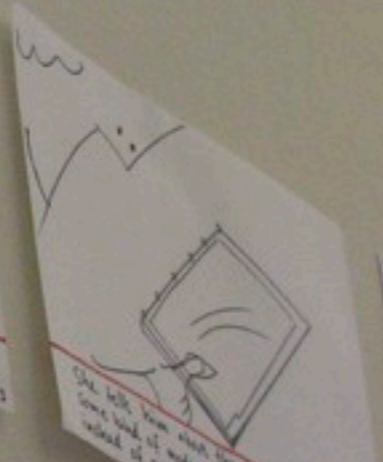
He noticed that his neighbor Helga often get visits from her grandchildren. Apparently they look at old photos, but the album looks a bit strange.



One day he asks Helga what kind of photo-album it is, and why the kids are so interested in it.



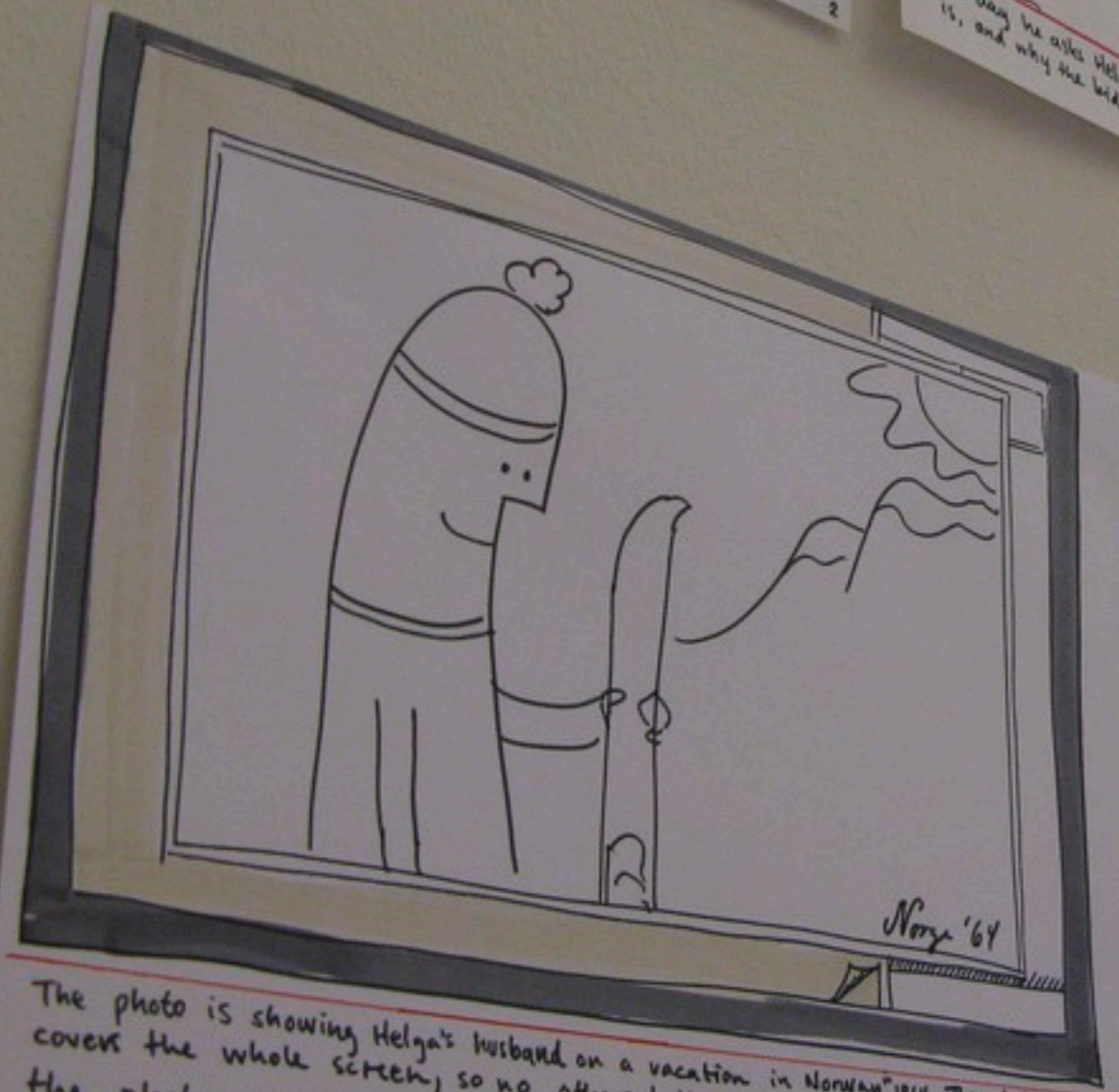
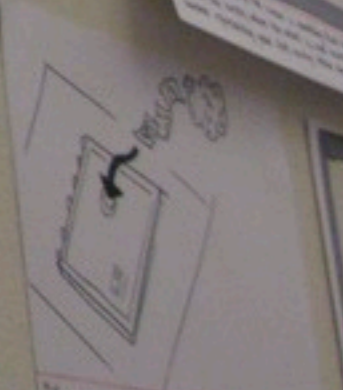
She tells him what the photo-album really is, some kind of modern device that has a screen.



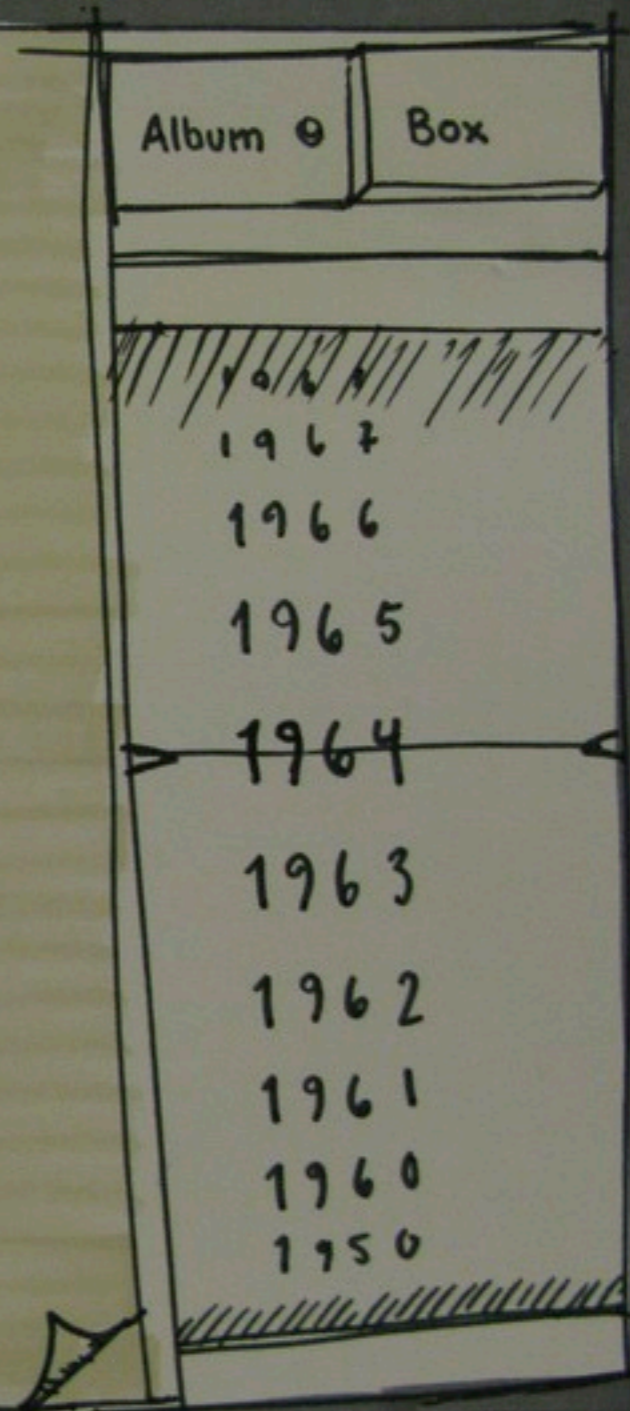
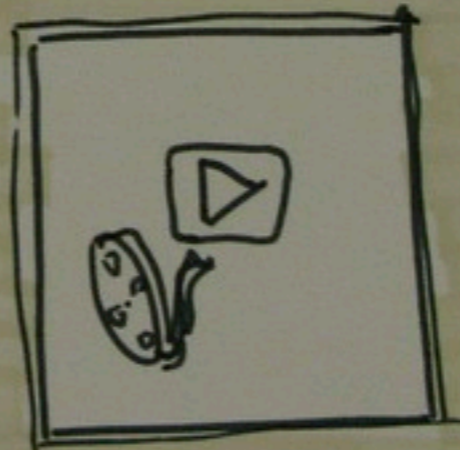
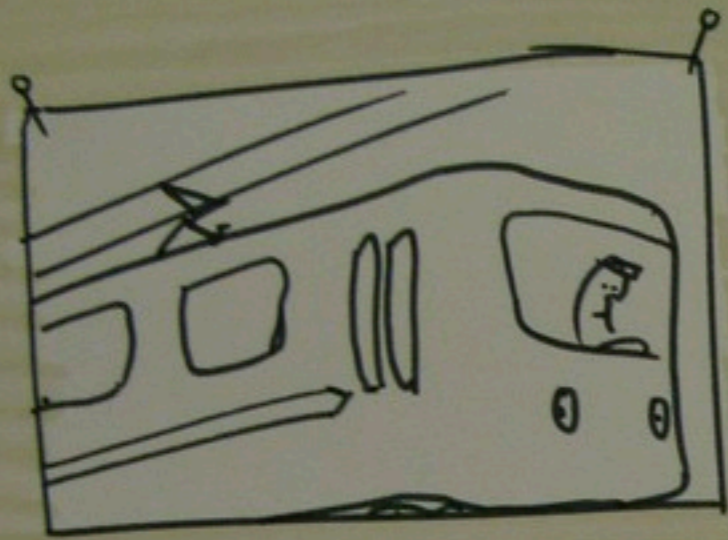
"So you have personal photos in it? But wait, didn't I also see a photo from Reinken in there?" Albert asked.



"Yes, when there is no empty space the screen automatically fills in images & photos from other users."



The photo is showing Helga's husband on a vacation in Norway 1964. The photo covers the whole screen, so no other buttons can be pressed. She touches the photo again, and it shrinks to it's original size.



On the ~~left~~ right side of the screen is something that looks like a big wheel. Helga puts her hand on the screen, where the wheel is, and moves it up. The wheel starts rolling and numbers representing years start moving. When the year 1964 is centered, she removes her hand.

5



photo credits © tobias toft



photo credits © tobias toft



photo credits © tobias toft

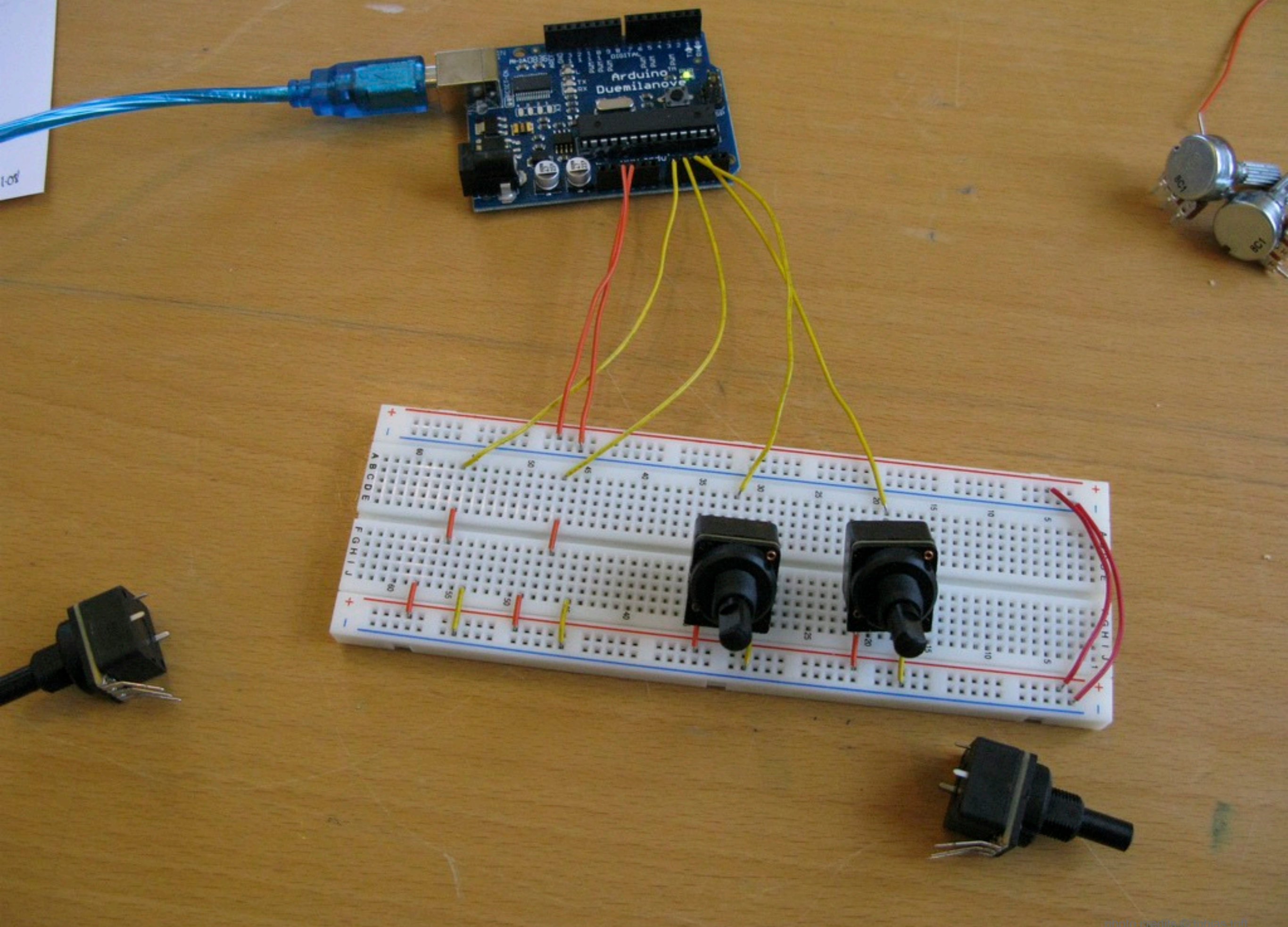


photo credits © tobias toft



photo credits © tobias toft



photo credits © tobias toft



Viseaften


Journalistforeningen

1968, Music

198

Favorites

De



OH!
WHAT A LOVELY WAR

Glenn Gauer
1978, Radio Theater

1975 1980 19 Favorites DC

References (Books):

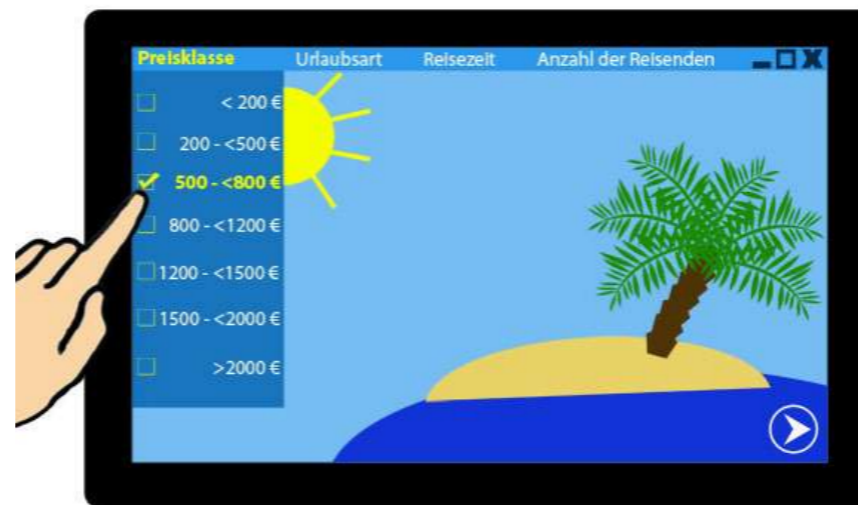
- [1] Buxton, W. Sketching User Experiences, *Morgan Kaufmann* 2007.
- [2] Norman, D. The Psychology of Everyday Things, *Basic Books* 1988.
- [3] Moggridge, B. Designing Interactions, *MIT Press*, 2006.

Restaurant
 Scout
 loading...




Breakoutsession No. 5

Paper Prototyping



Paper Prototyping

- definition:
 - fast, easy and cheap way to build prototypes for usability testings
 - mostly low fidelity
 - particularly qualified for GUIs
 - first step of Rapid Prototyping



http://commons.wikimedia.org/wiki/File:ELiving_Campus_Paper_Prototype_2.jpg

Paper Prototyping

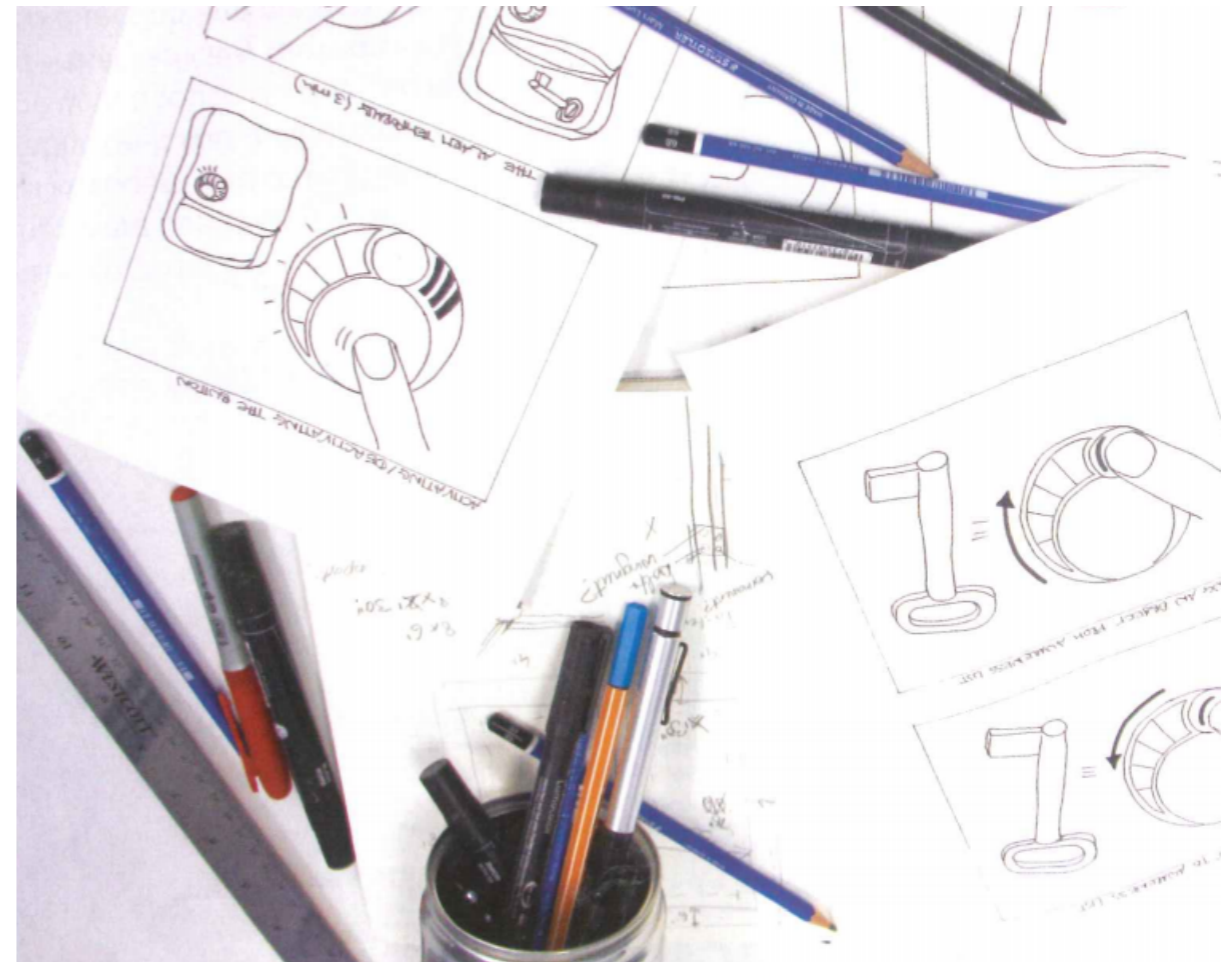
- requirements:

- material:

- » paper
 - » scissors
 - » pencils
 - » glue stick

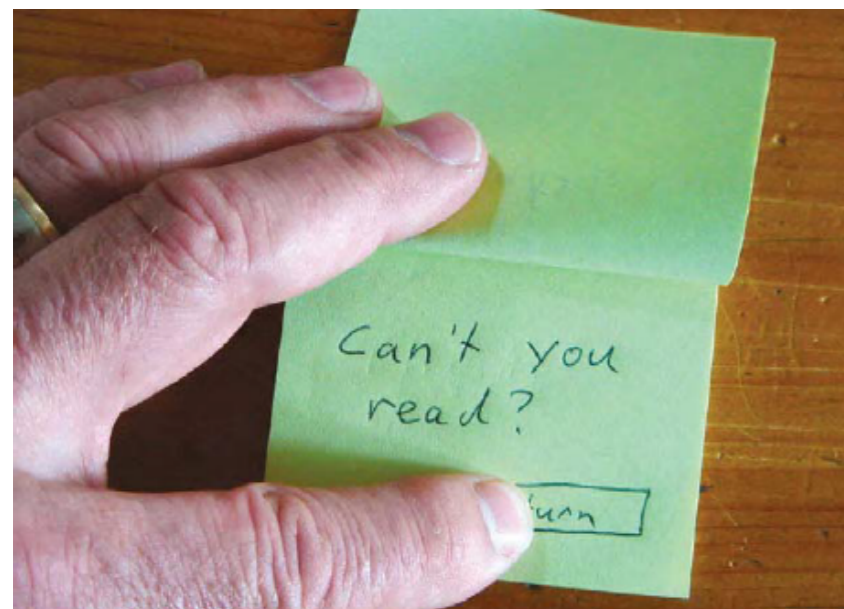
- skills:

- » almost none!



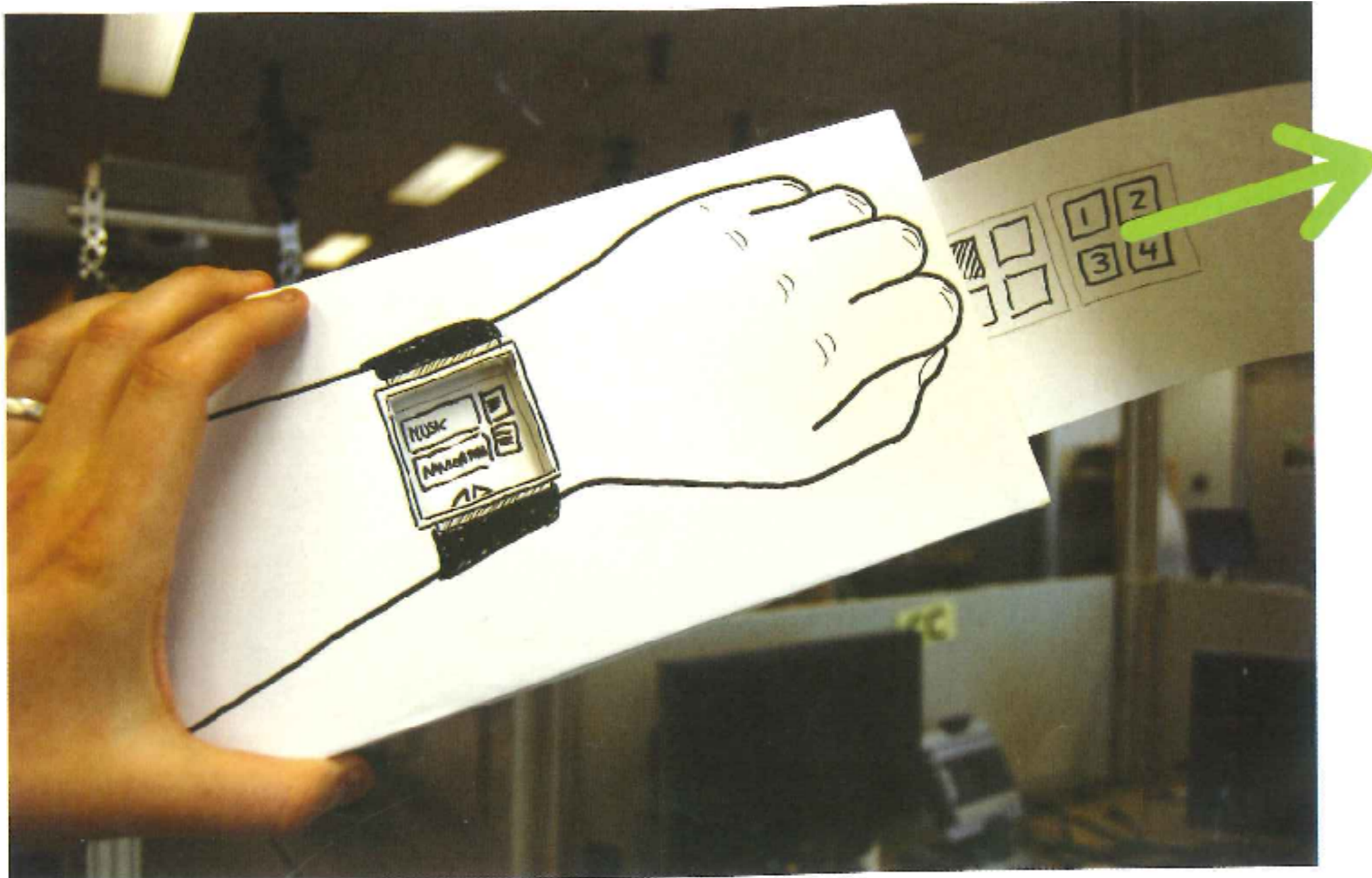
Paper Prototyping

- various possibilities:



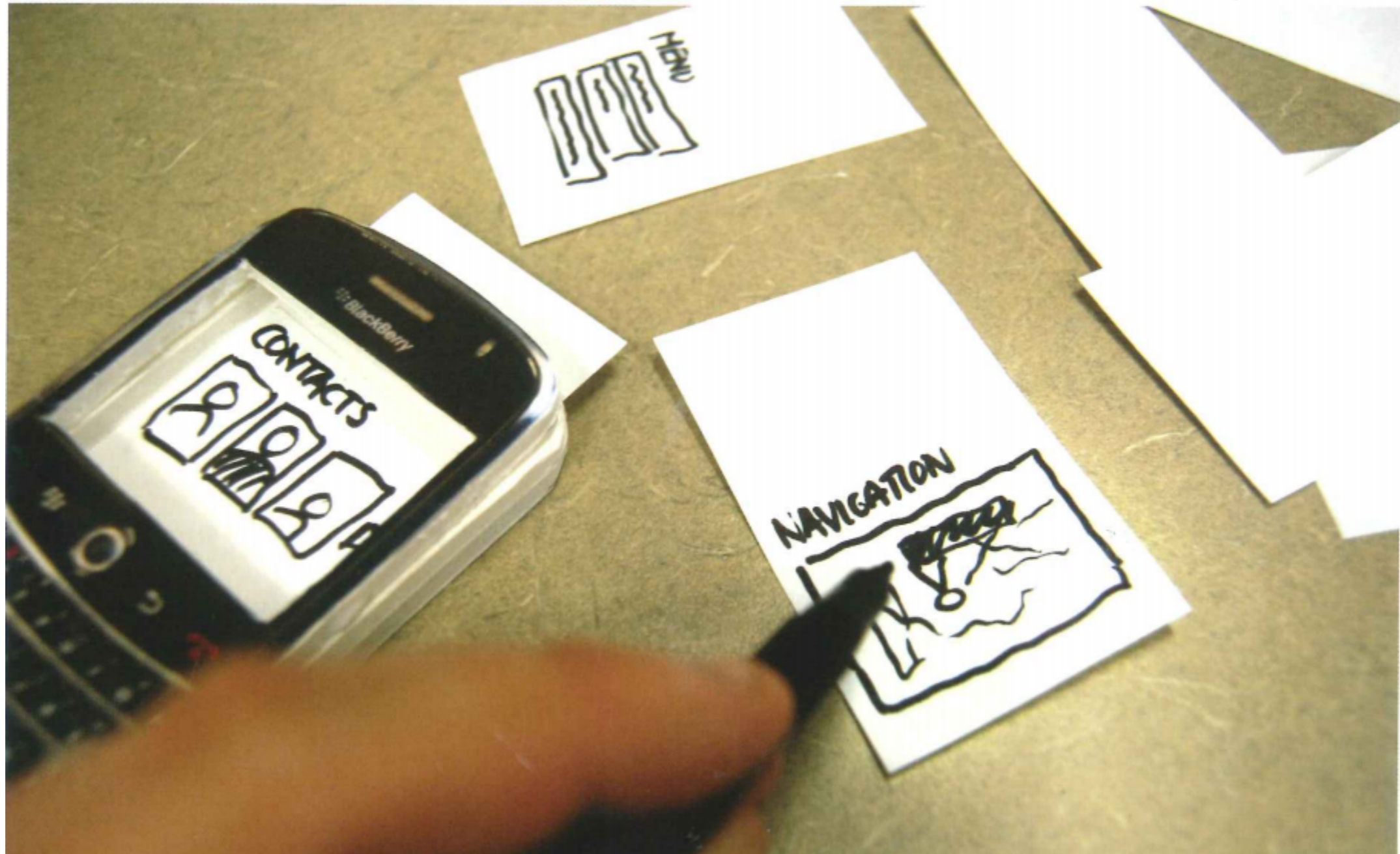
Paper Prototyping

- various possibilities:



Paper Prototyping

- various possibilities:



Paper Prototyping

- Task:
 - build a paper prototype of your concept
 - your concept's core features should be included

