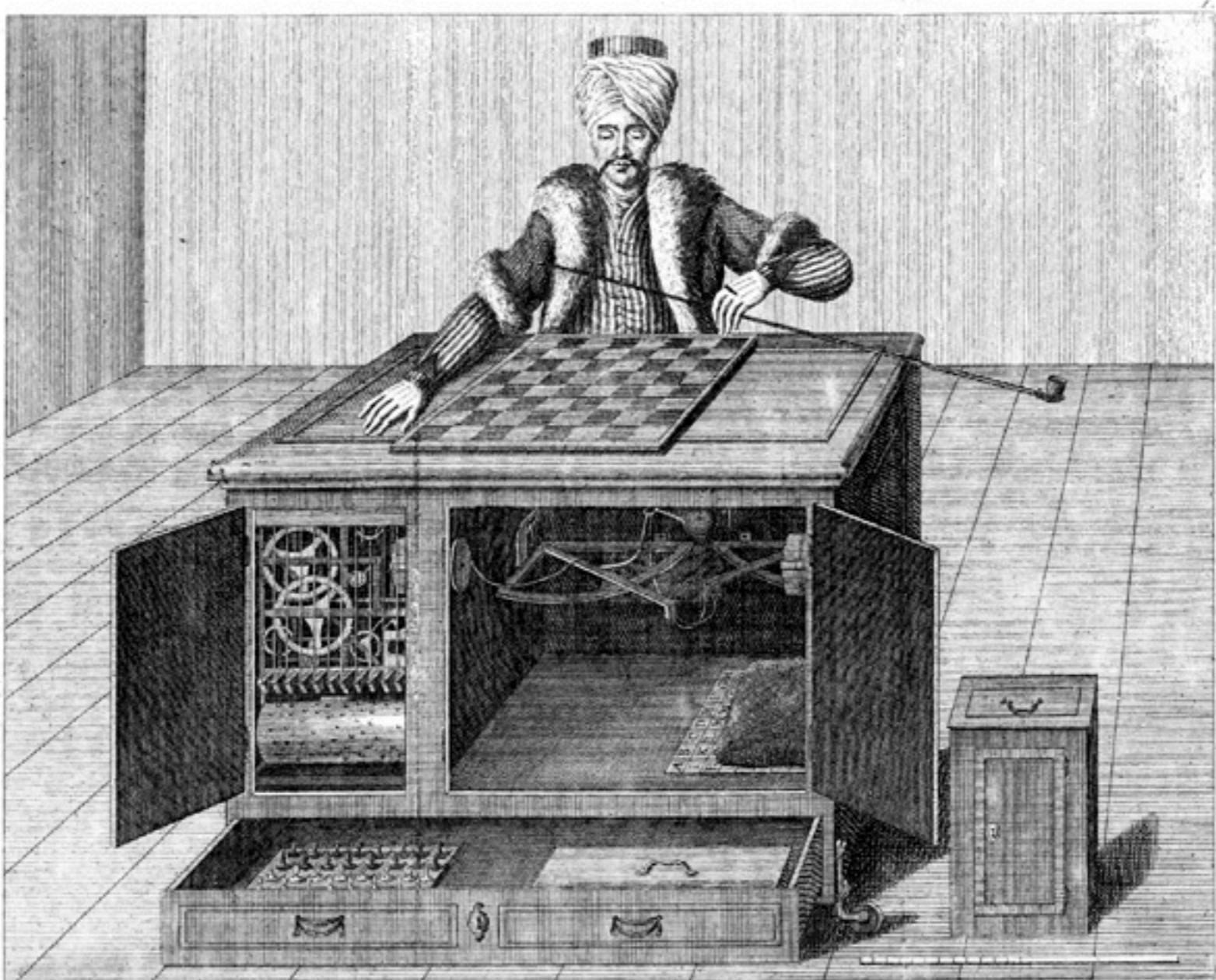


Prototyping

david.s.rodrigues@ipleiria.pt



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Chr. a Meichel excud. Basileae.

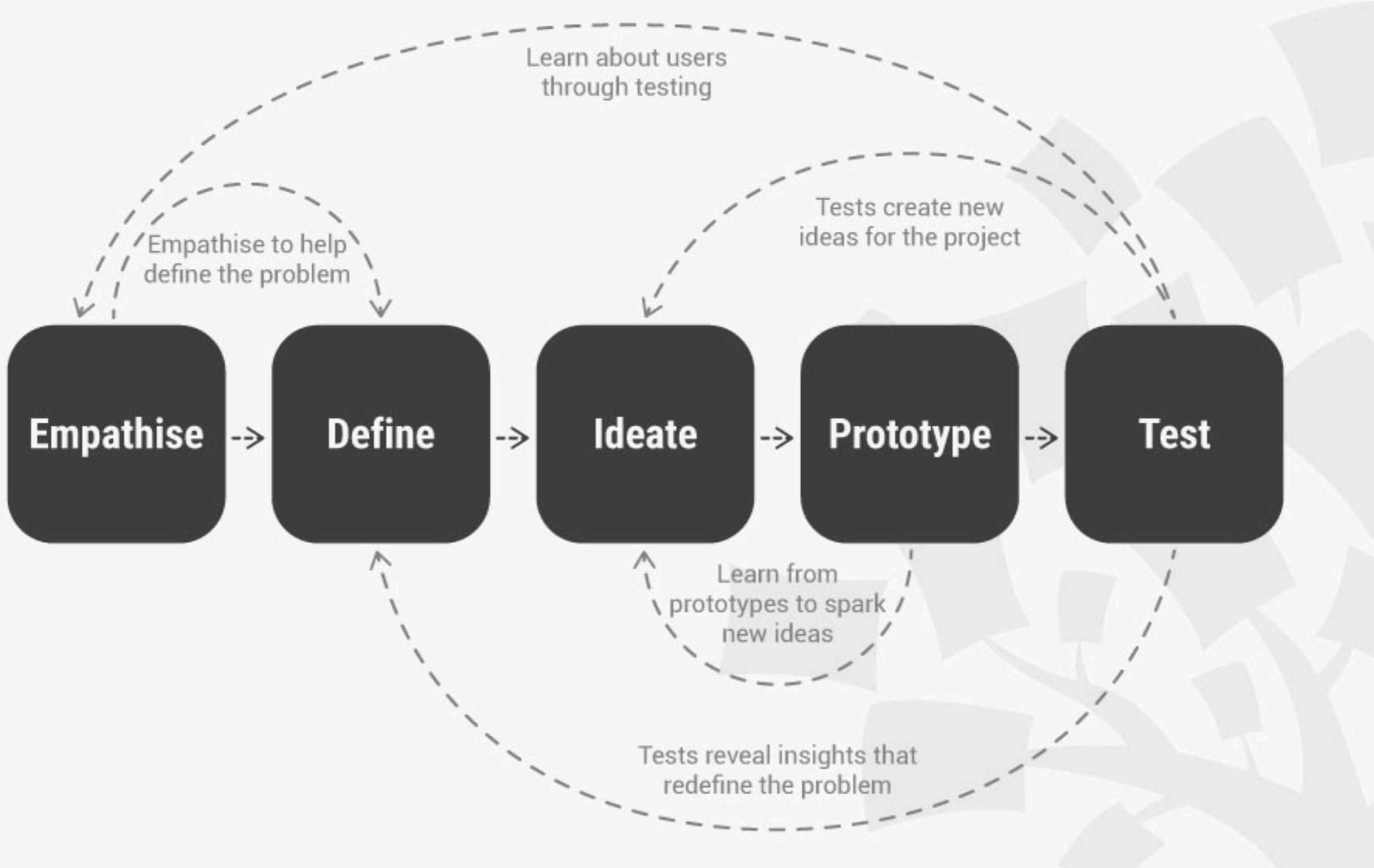
P. G. Piatz sc.

Der Schachspieler, wie er vor dem Spiele gesetzt wird von vorne. Le Joueur d'echecs, tel qu'on le montre avant le jeu, par devant.

User Centered Design

- focus on the needs, desires and limitations of users.

DESIGN THINKING: A NON-LINEAR PROCESS

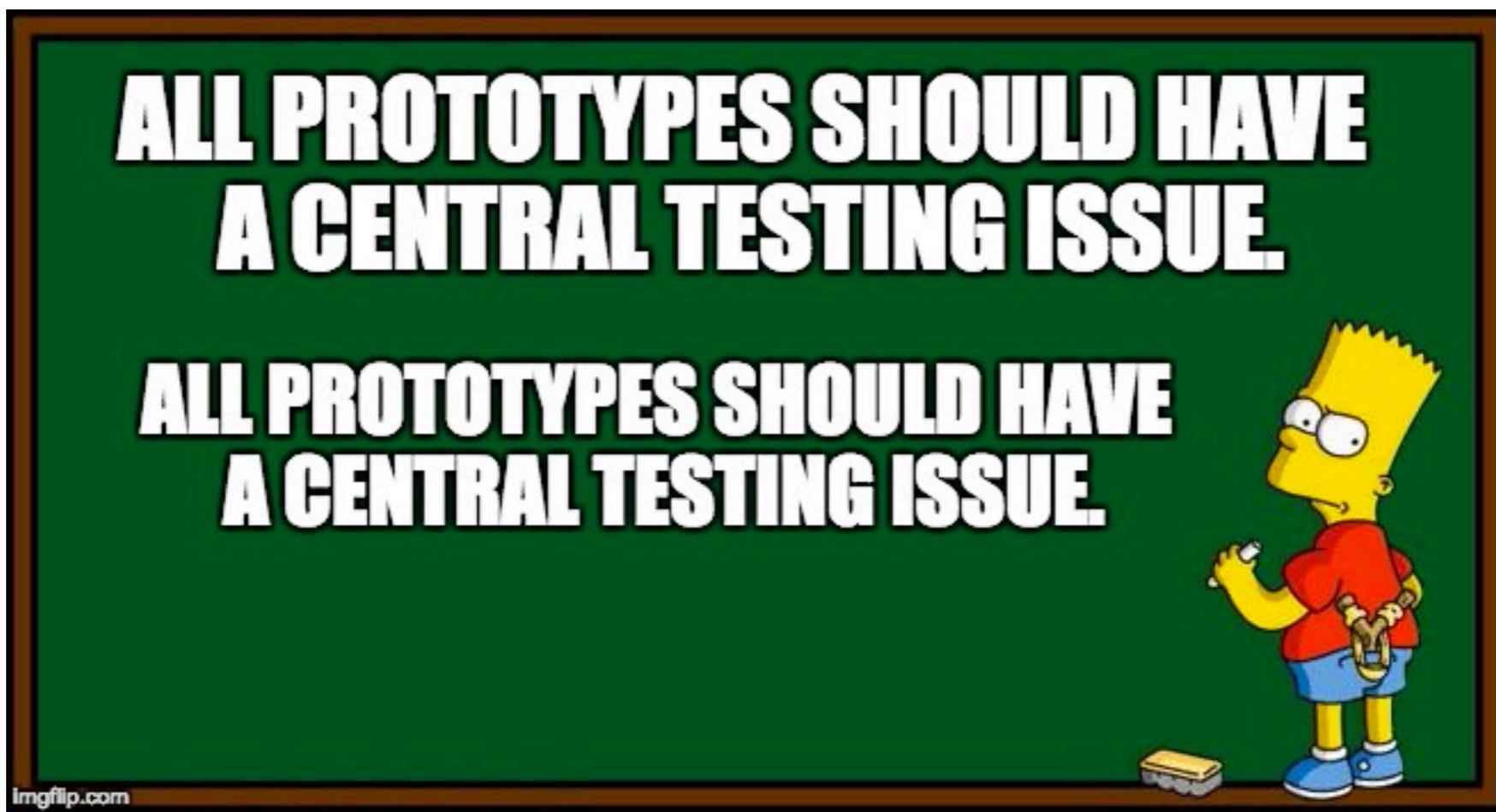


Prototyping

- Paper-prototyping
- “Wizard of Oz”
- Functional Prototypes
- Lo-Fi vs. Hi-Fi prototypes.

Testing

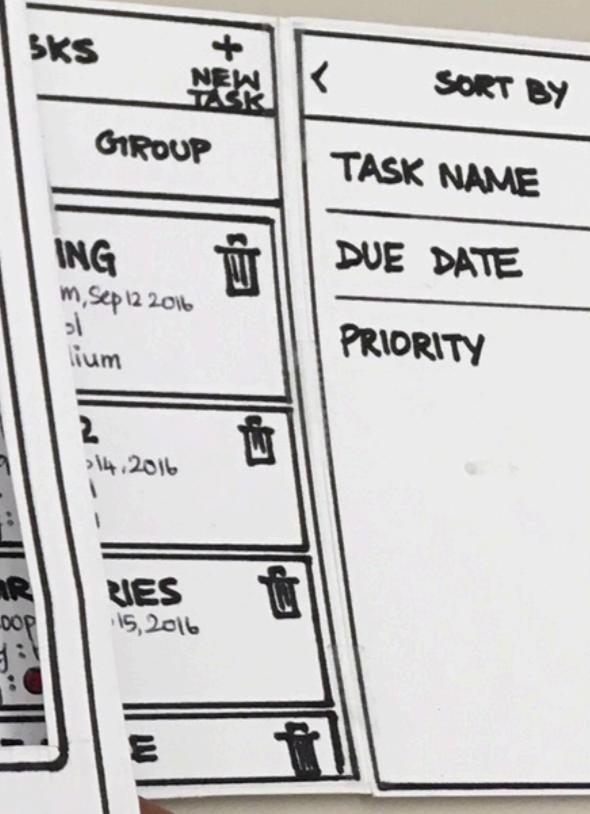
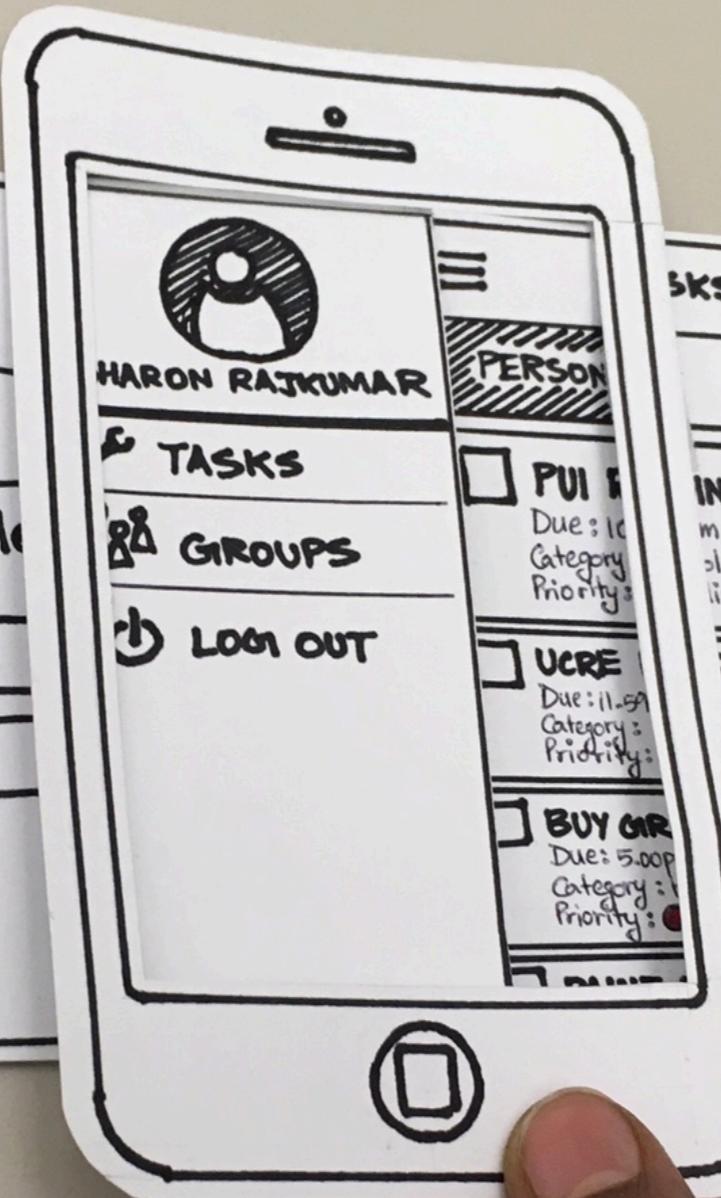
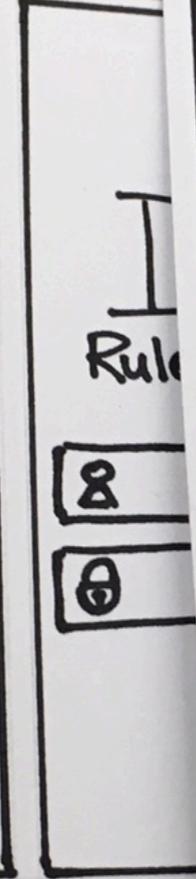
- All prototypes should have a central testing issue.



Why testing?

- testing and communicating user interface designs
- saving time and money
- bringing users into the design process
- engaging stakeholders in a meaningful way
- designing across devices and platforms
- creating and testing with real content and data

Paper prototyping



FILTERS



Check-in	Monday, 19th September	Check-out	Sunday, 25th September
Number of Guests (incl. you)	5		
About You			
Name			
Address			
Phone			
Email			
Comments			
<input type="checkbox"/> I accept the terms and conditions <input type="checkbox"/> I accept the privacy policy <input type="checkbox"/> I accept the cookie policy			
<input type="button" value="SEND BOOKING"/>			

② Receive confirmation.
Wait until your booking is confirmed via email.

③ Pay for your stay.
We accept bank transfer and credit cards. You can cancel your booking up to 30 days prior to your arrival. For more information, visit our payment page.

ABOUT YOUR STAY

Check-in Monday, 19th September Check-out Sunday, 25th September

720 € 6 nights off-season

Number of Guests (incl. you)

-	5
---	---

About You

Name

Address

Phone

Email

Comments

I accept the terms and conditions
 I accept the privacy policy
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REQUEST A BOOKING

Thanks for sending us your booking request!

You will shortly receive an email confirming your booking request. Please note that you haven't booked your stay yet. We will inform you about as soon as possible if your booking is confirmed.

To learn more about the next steps, please review our "page".

Interested in taking some courses during your stay?

Here are some courses that fit you requested time frame:

COURSE TOPIC

Date - Time - Duration
 No. of participants - Price per person

CASA
Explor

Let's imagine a
Vacuum Cleaner

VacMax 80



Features:

- 800w
- Disposable bags
- Optional tools

Full feature
list ✓

VacMax 100



—
—
—
—
—
—

Full feature
list ✓

VacMax 200



—
—
—
—
—
—

Full feature
list ✓

VacMax 800



Features

- 800w
- Disposable bags
- Optional tools
- Retractable cable
- Hi/Lo power

Dimensions:

50cm x 20cm x

Multi-direction

3 year warranty

Choice of colours:

Red, Green,

[Close](#)

VacMax 900

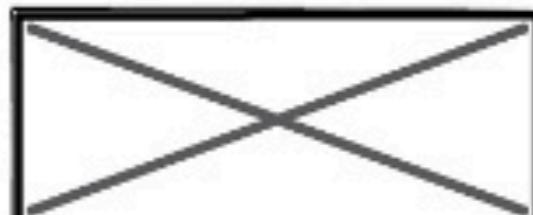


Features

- 900w
- Disposable bags
- Hose included

[Full feature list](#)

VacMax 1000

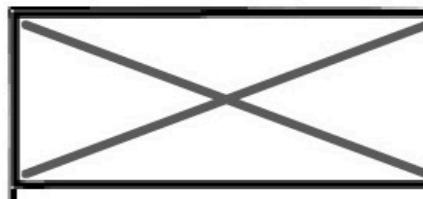


Features

- 1000w
- Reusable bag
- Full tool set

[Full feature list](#)

VacMax 800

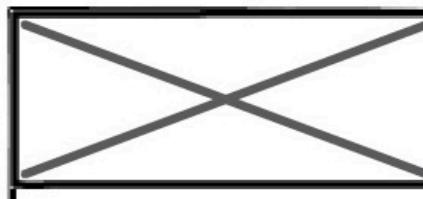


Features

- 800w
- Disposable bags
- Optional tools

[Full feature list](#)

VacMax 900

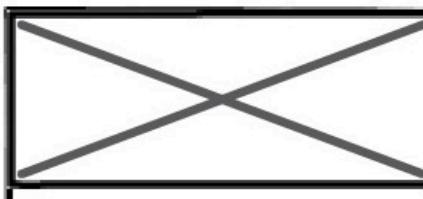


Features

- 900w
- Disposable bags
- Hose included

[Full feature list](#)

VacMax 1000



Features

- 1000w
- Reusable bag
- Full tool set

[Full feature list](#)

Develop multiple alternatives

What to test?

Testing what?

- Find what users understand of the app/web
 - Learnability
 - Efficiency
 - Memorability
 - Errors
 - Satisfaction

Let's Pretend

- Paper Prototype Interviews
 - Field interview conducted in the user's workspace
 - “let’s pretend” that the prototype works.
 - Interviewer manipulates the mock-up changing function and structure in response to user’s needs and tasks.

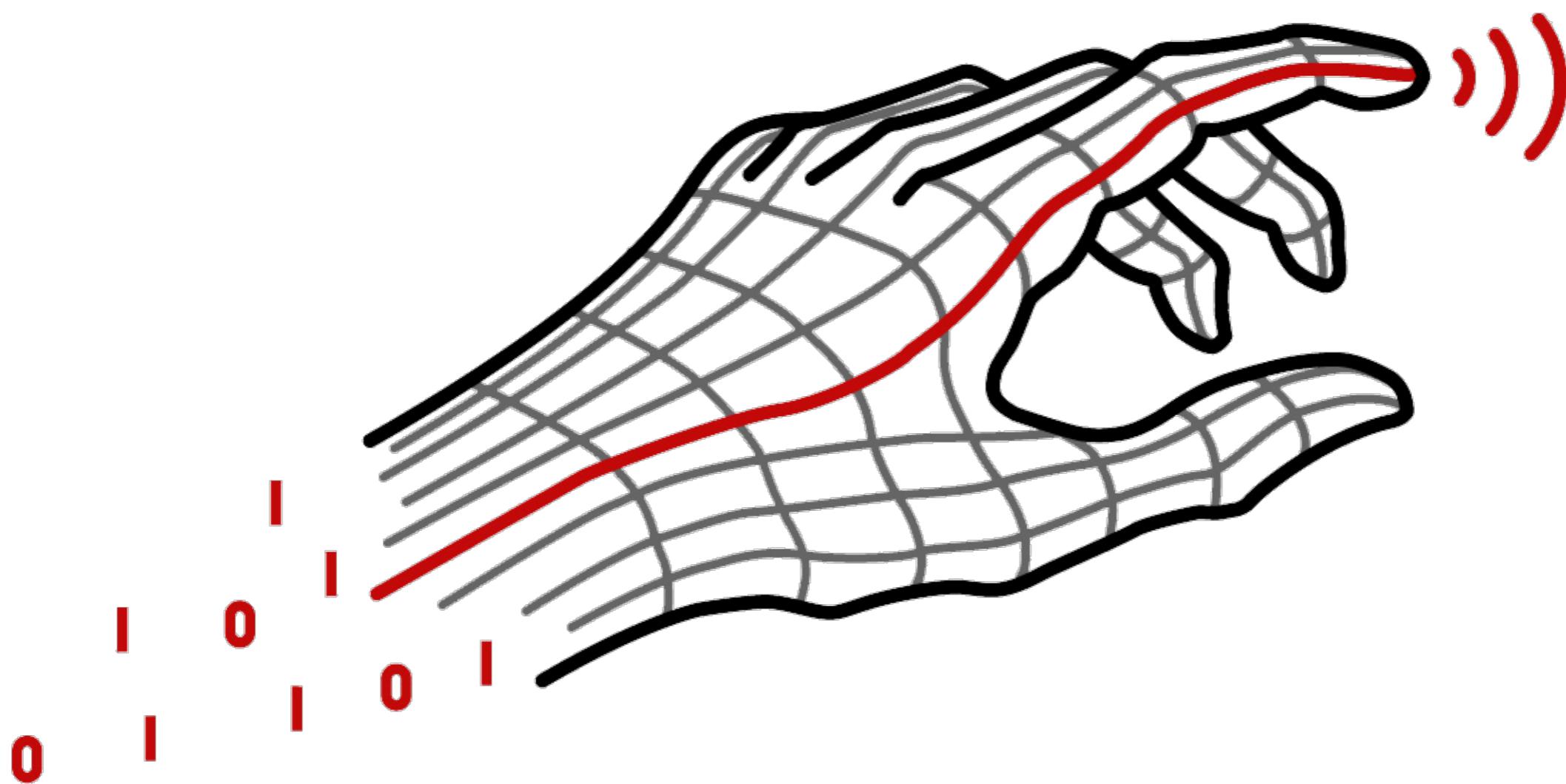
Wizard of Oz

Wizard of Oz

- Humans interact with a computer system, that they think is real, but that in reality its logic is manipulated by a human.



High-Fidelity or Low-Fidelity when prototyping for Human-Computer Interaction



Interaction Design

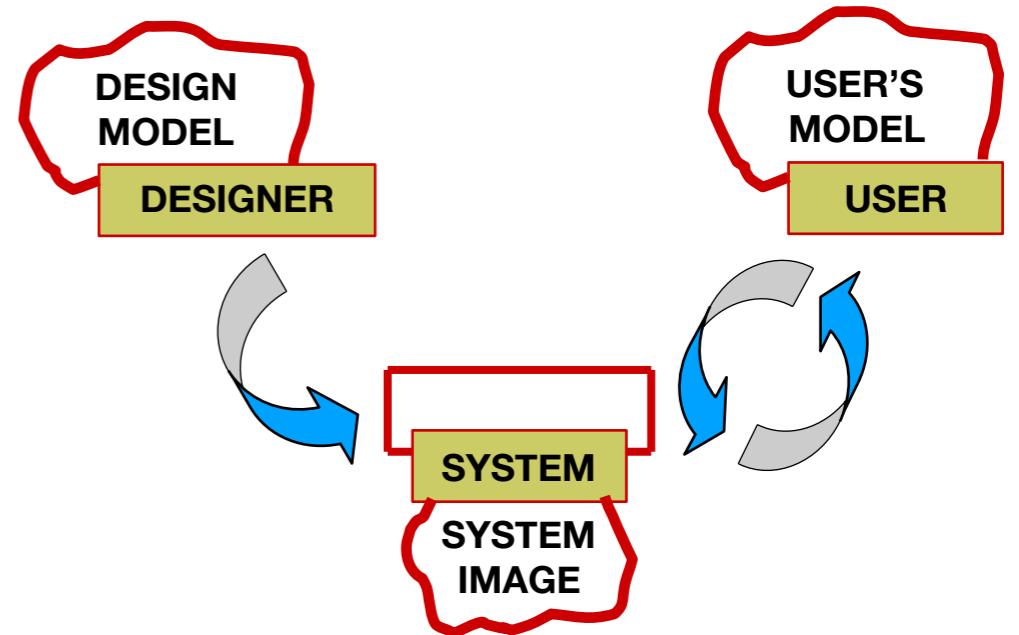
- Interactive products in everyday use
 - Supporting people in their everyday and working lives
 - Cell phones, computer, ATM, laundry machine, VCR...
 - Are they easy, effortless and enjoyable to use?

Key points

- Interaction Design involves taking into account a number of interdependent factors including context of use, type of task and kind of user
- Need to strive for usability and user experience goals

Conceptual Model

- The DESIGNER has model of how the system should work.
- The USER creates a model of how he/she thinks the system works.
- The SYSTEM has an image of how it actually works.



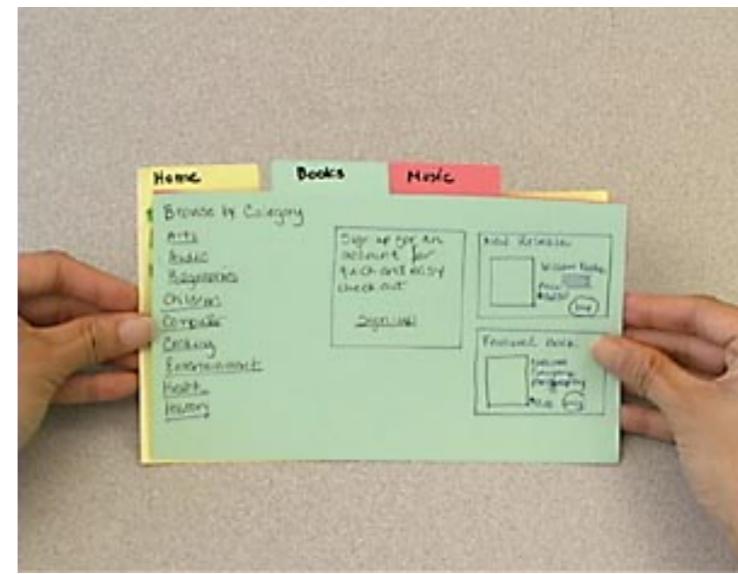
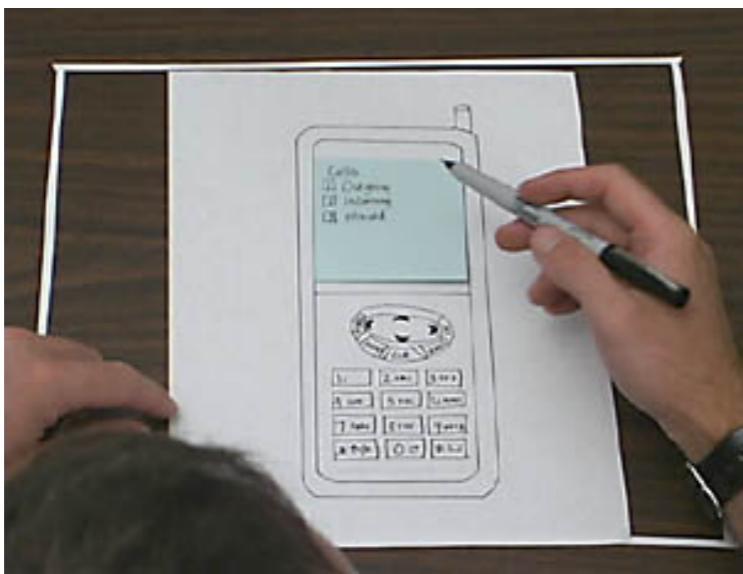
In an ideal world, all three should map into each other and the user's mental model of the system should be equal to the designer's mental model. That would provide good usability and effective interaction.

Prototyping goals

- While a usable product is a system where the image of it provides a user mental model which is equal to the designer mental model, it is natural to compare these models. That can be done using prototyping.
- Depending on the product that is developing the designer first have to create a brief idea what kind of feedback that is desired from the prototyping process.

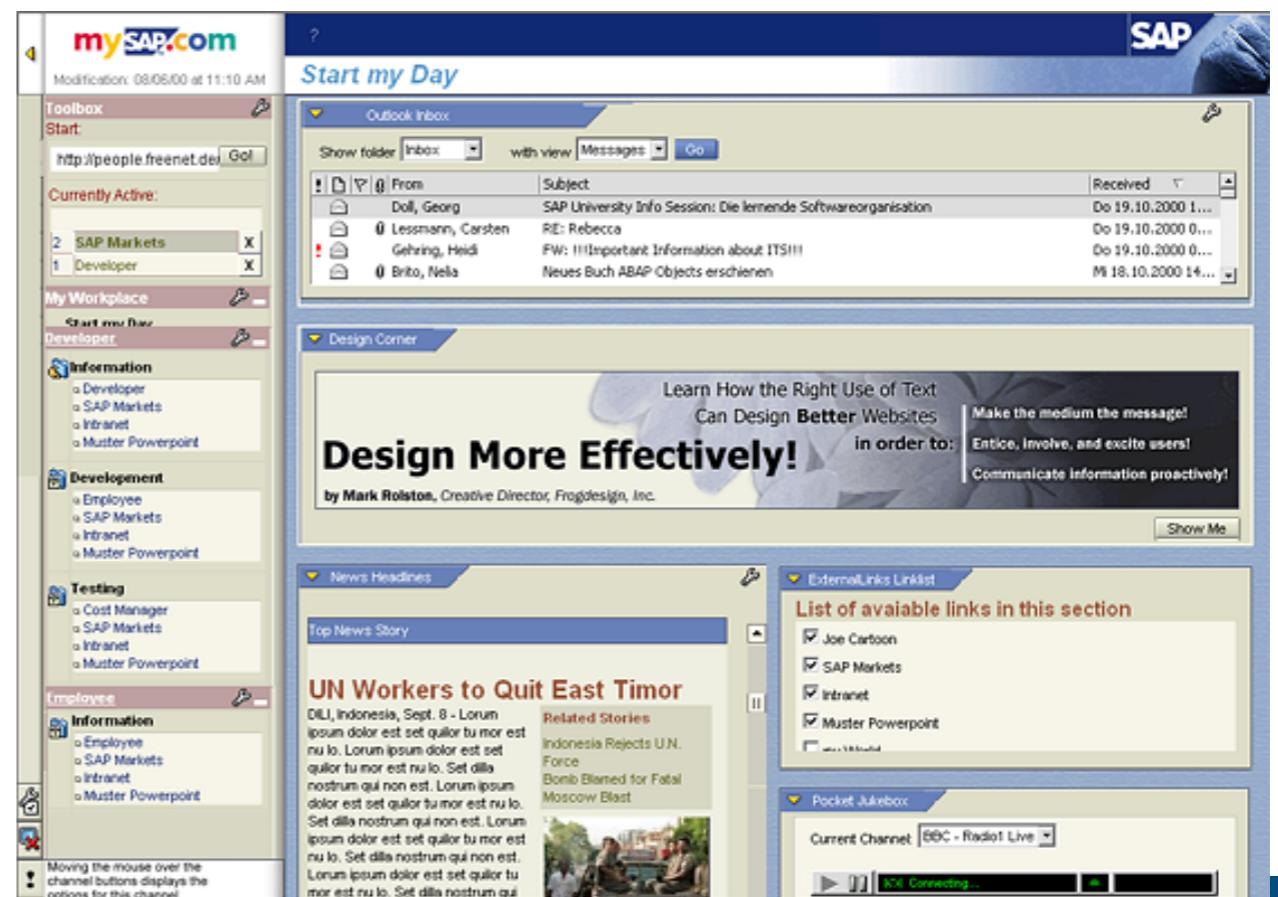
Low-Fidelity

- Does not look very much like the final product. Material, behavior etc.
- Material such as paper & cardboard rather than electronic screens, metal and detailed code.
- Simple, cheap & quick to produce and redesign. Encourage further exploration of alternative designs and ideas.
- Early stage of development – prototyping for the conceptual design.



High-Fidelity

- Looks very much like the final product.
- If the prototype is for software system, a software tool, such as Macromedia Director or Flash, Visual Basic or Smalltalk, might be needed.
- Software prototype tools are also often qualified development environments.
- More time-consuming to produce than low-fidelity prototyping.



Advantages & Disadvantages

Low-Fidelity

Advantages

- Low-fidelity representations, such as sketches, differ from the final product in interaction design, visual appearance, and/or level of details. The method is quick & cheap which encourage iterative design idea tryouts between/during usability tests.
- Quick Low-fidelity tests allows designers and users to focus on high-level interaction design and information architecture, rather than on details or visual style.

Disadvantages

- Users might judge a low-fidelity prototype as unprofessional.
- While Low-fidelity prototypes allow spontaneous changes for exploring interactions, they also sacrifice some realism.
- Limitations in navigation and flow while a control person has to “make the interaction”.

Advantages & Disadvantages

High-Fidelity

Advantages

- High-fidelity prototypes offer more realistic interactions than low-fidelity.
- Better at conveying the range of design possibilities.
- User-driven.

Disadvantages

- High-fidelity prototyping may make designers reluctant to change designs and less likely to fully explore the design space.
- Take a long to build and requires skill.
- Reviewers and testers tend to comment on surface aspects rather than content.

Conclusion

- Low-fidelity prototypes have big advantages in **cost** and **ease of iteration**, and allow designers to focus on interaction design and **information architecture** rather than aesthetic details.
- **Prototyping on paper eases testing of alternative design** and enables testing in a more exploratory, dynamic way.
- **Computer prototypes allow automatic recording of user tests**, can be distributed electronically, and can help document the design process.
- What kind of prototype method to choose is not a simple decision. Do combine and apply several techniques might be a good idea.

Online prototyping

Many online tools

- <https://www.invisionapp.com/>
- <https://webflow.com/>
- <https://proto.io/>
- <https://moqups.com/>
- <https://www.fluidui.com/>
- <https://origami.design/>

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Recent Message Sent

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Home - Option 1

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Home - Option 3

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HTML & CSS

Detailed documentation

Features 1 / 1

Detailed documentation

All you want from an app

Features 2 1 / 1

All you want from an app

Awesome Features

Features 3 1 / 1

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