Introduction to UX Prototyping

- Prototyping Basics
- Prototyping Processes
- Prototyping Tools and Resources

"They slow us down to speed us up. By taking the time to prototype our ideas, we avoid costly mistakes such as becoming too complex, too early and sticking with a weak idea for too long."

— Tim Brown, CEO & President of IDEO

What is Prototyping?

Prototype is the means by which designers present their designs and see them in action. In UX it is a **simulation** of the final interaction between the user and the interface.

People often confuse **sketches, wireframes and mockups** with prototype. These assets **lead to creation of a good Prototype** but they lack simulation (interaction with user). A person interacting with a prototype should be able to see the response on their input (**this response can be generated by human or a system**). Hence static assets, such as - sketches, wireframes and mockups are not considered as prototype.

Why Prototyping?

Primary goal is to test the design before releasing it in market and reduce negative feedbacks or risks:

- **Concept Validation:** Ensure the design concept works as intended. When the real users use the interactive version of the concept, it is easier to observe and get feedback from target audience.
- **Usability testing:** Determine if the people are able to use the product and resolve usability issues before launch (if any).
- **Cost saving business decision:** The stakeholders get a clear picture of potential benefits, risks and costs associated with where a prototype might lead. It also improves time-to-market by minimizing the number of errors to correct before product release.

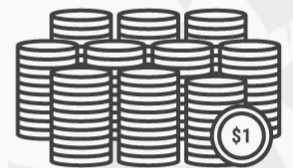**The 1-10-100 Rule: How Early Prototyping Prevents Costly Errors in Advance**

Prevention Cost: $1
E.g., evaluating usability through early paper prototypes
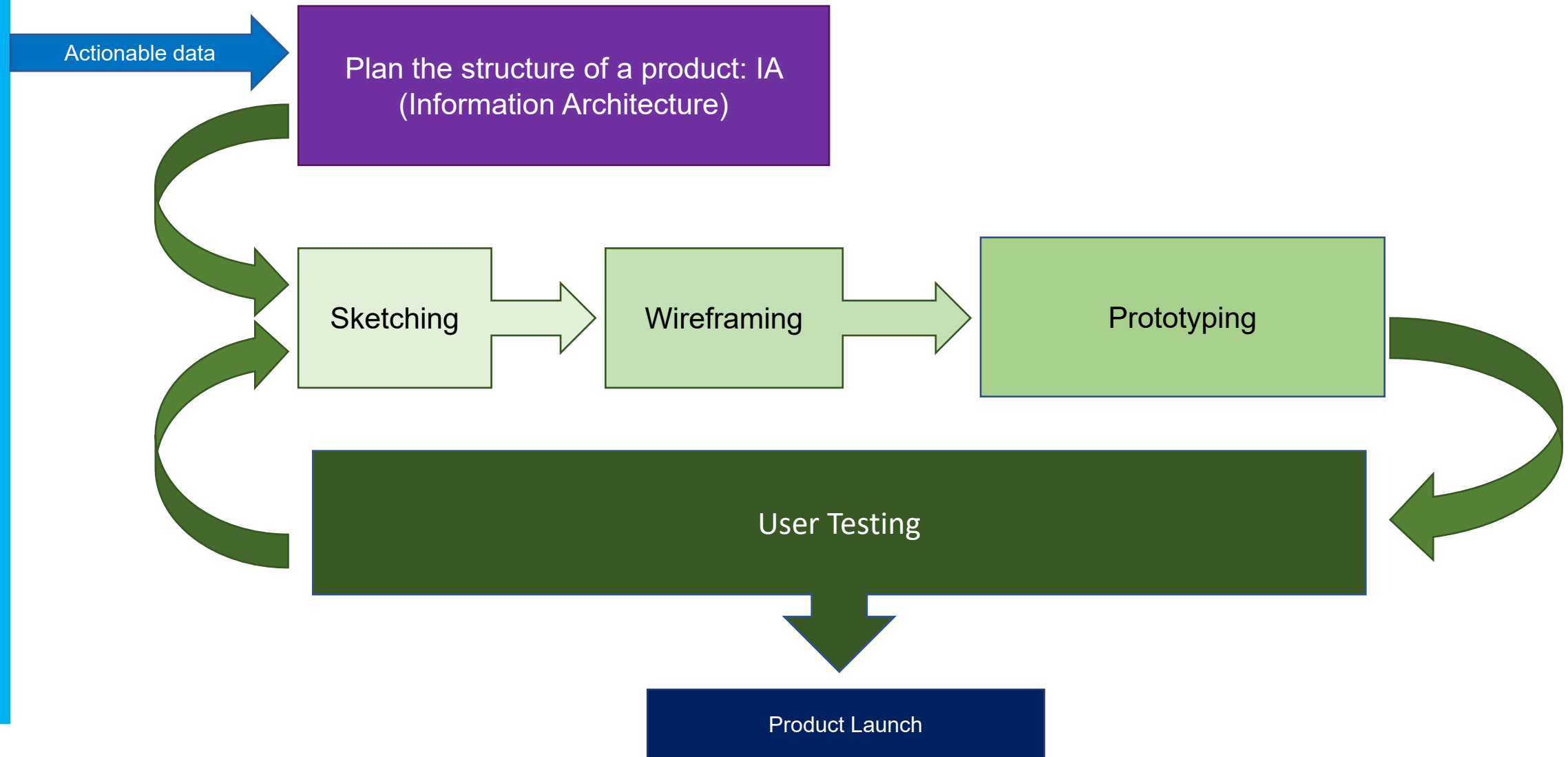
Correction Cost: $10
E.g., fixing usability errors discovered through usability tests with hi-fidelity prototypes

Failure Cost: $100
E.g., fixing the code and lost revenue from an error in the final product

How to create Prototype? The Process:

Actionable data → Plan the structure of a product: IA (Information Architecture)

Sketching → Wireframing → Prototyping
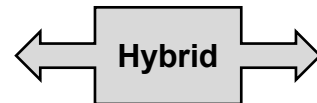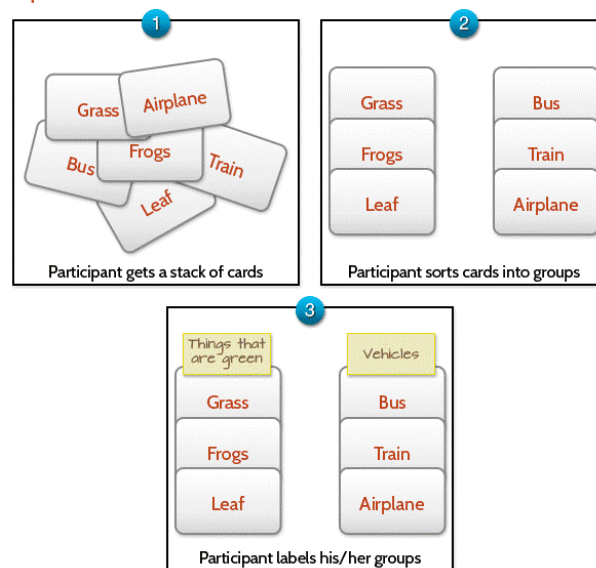
User Testing

Product Launch

IA (Information architecture)

IA is the structure of a website, app or other product. It leads to the creation of navigation, sitemaps, hierarchies and categorizations of content. It also helps with **Scoping** design to focus on the goal keeping user's expectations in view. **Card sorting** is often used to create the foundation for a robust IA. In this the users are asked to organize cards (labels/sticky notes of major features or topics of the product) into groups.
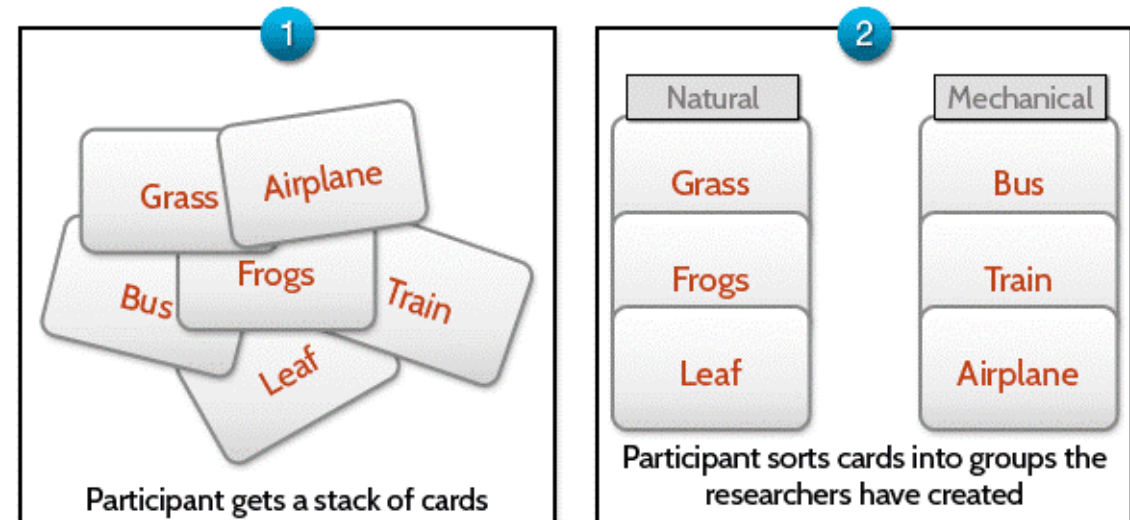
- They can sort the stack of cards under label/categories created by them **(Open card sorting)** or
- Sort cards into the categories created by researchers **(Closed card sorting)** or
- Sort cards into predefined categories but also have option to create their own categories (**Hybrid card sorting)**

This method helps find out **how users expect to see information grouped on a website or in an app.**
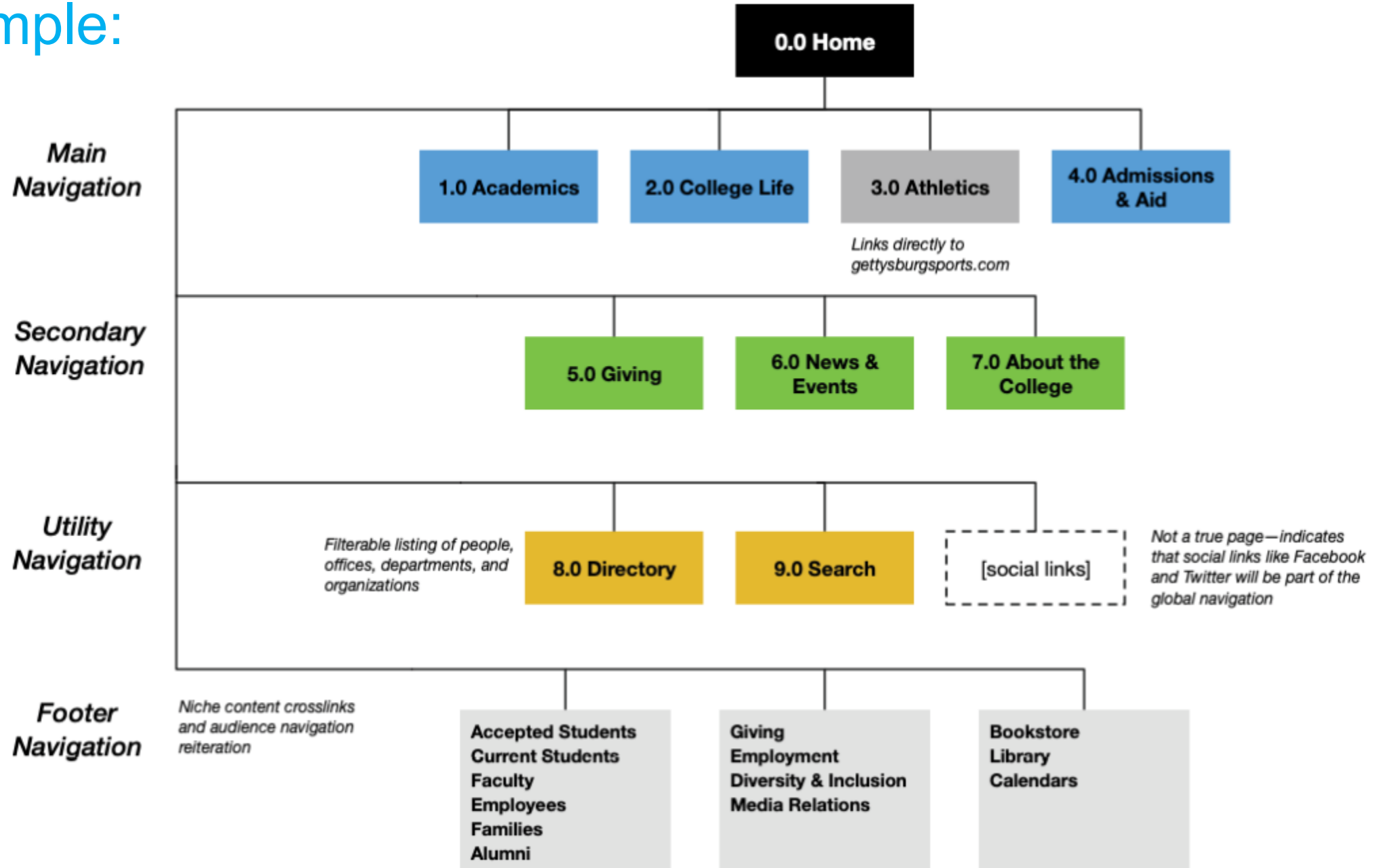
Example:

0.0 Home

Main Navigation

1.0 Academics 2.0 College Life 3.0 Athletics 4.0 Admissions & Aid

Links directly to gettysburgsports.com

Secondary Navigation

5.0 Giving 6.0 News & Events 7.0 About the College

Utility Navigation

Filterable listing of people, offices, departments, and organizations

8.0 Directory 9.0 Search [social links]

Not a true page—indicates that social links like Facebook and Twitter will be part of the global navigation

Footer Navigation

Niche content crosslinks and audience navigation reiteration

**Accepted Students
Current Students
Faculty
Employees
Families
Alumni**

**Giving
Employment
Diversity & Inclusion
Media Relations**

**Bookstore
Library
Calendars**

Sketching

Anyone can sketch! It is the **easiest and cheapest** way to visualize ideas, all you need is a paper, pen, ruler and a stencil. You can even use smartphone, tablet or desktop to sketch out your ideas. It's the **fastest** way to **share** your **rough ideas with the team** and is **disposable** in case they don't seem to work (so you won't get attached to bad ideas).
They can be useful to pen down touch points and identify how they relate to one another in a user's journey.

- **Always sketch out your ideas** in initial stage.
- **Avoid too much detailing,** sketches should be rough and quick with just right amount of detailing.
- **Scope out complex situations** by using different maps (journey map, empathy map etc.) or diagrams.
- **Share it with team** and invite them to give inputs. Even non-designers can give their inputs and join in the sketching sessions. This generates great opportunity to involve other stakeholders as well in the design process.
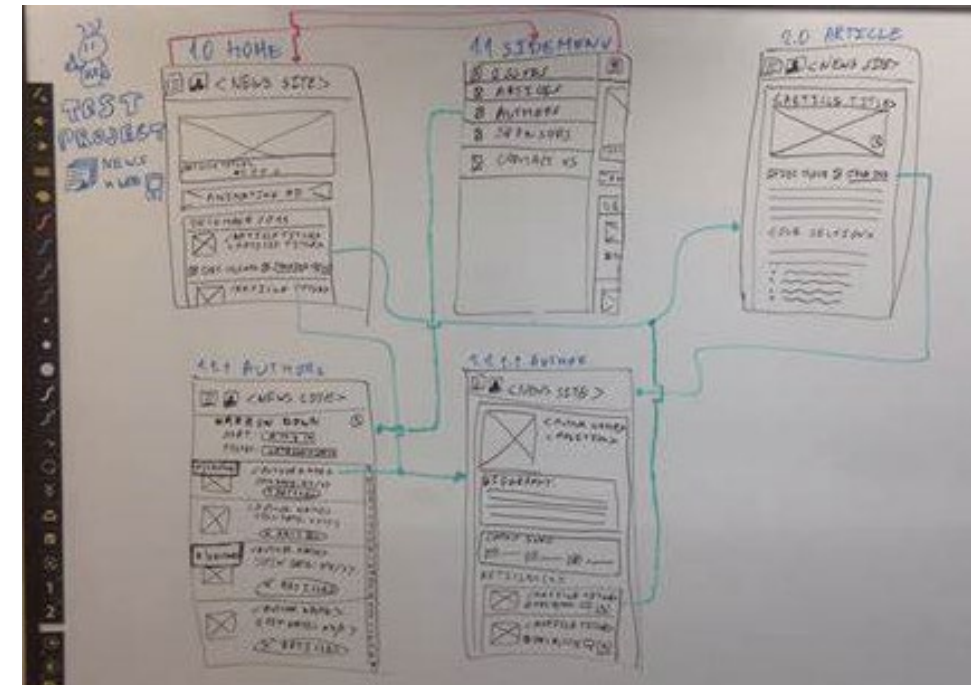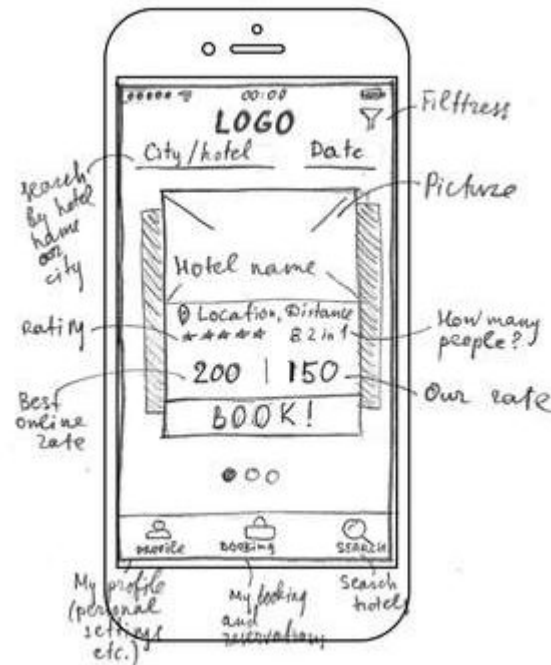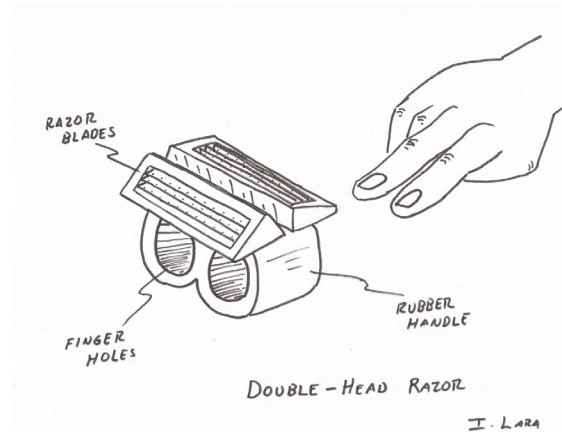
Wireframing

Wireframe represents a page's structure, hierarchy and key elements. It acts as a backbone of the product – designers often use them as **skeletons** for mockups. You can design a wireframe using simple shapes to create visual representation of page layouts. Instead of using specific design elements (images, videos, colors, real text etc.), **designers use placeholders** in a wireframe. Example: a box with a cross represents an image.

It focuses on the **layout and structure of the page**, rather than the visual aspects.

Methods of wireframing:
*   **Sketch:** Easiest, fastest and cheapest way. Best for brainstorming sessions.
*   **Graphic design software:** Using software like Photoshop or Illustrator.
*   **UX design software:** Using experience design software like Adobe XD, you can easily turn wireframes into **low-fidelity** or **high-fidelity** prototypes in a matter of minutes without switching to another tool.
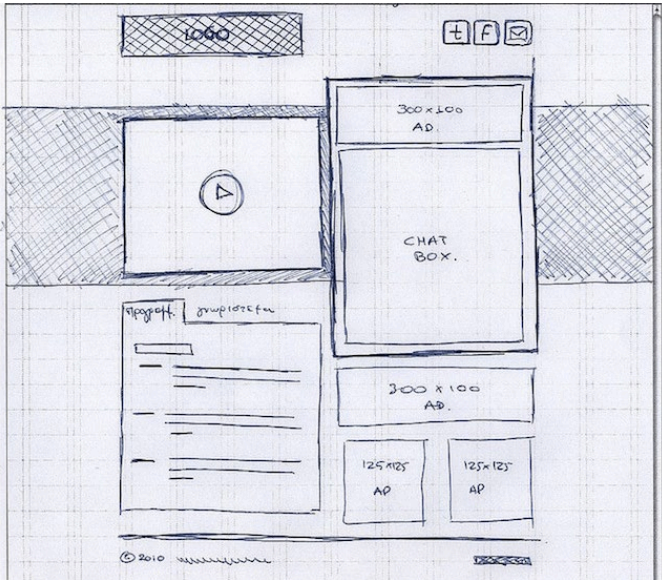


Sketch
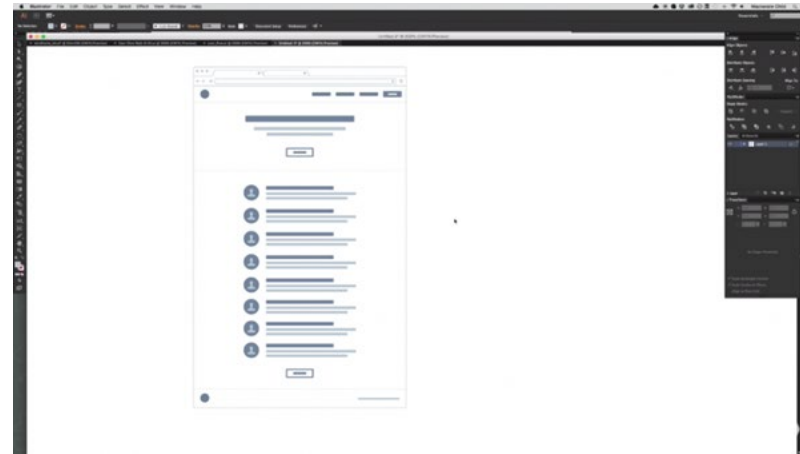
Graphic Design Software
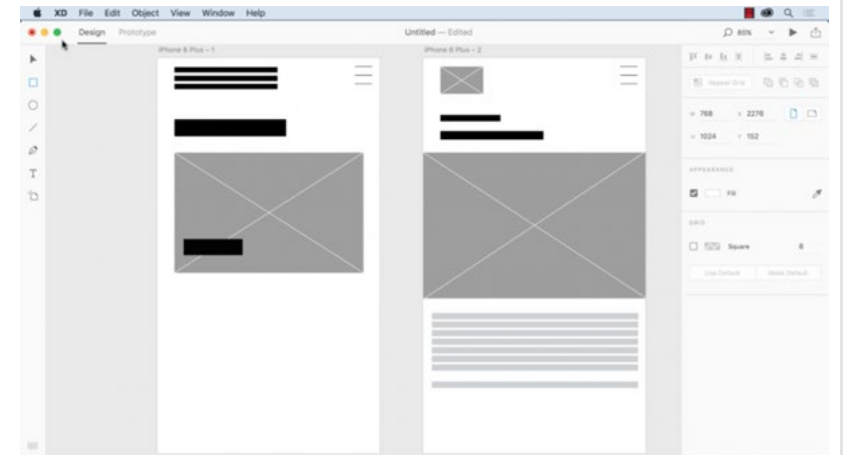
UX Design Software

Types of Prototype:

There are many types of prototypes, ranging anywhere between these two extremes:

1. **Low fidelity**
2. **High fidelity**

Fidelity refers to how the look and feel of the final product will be conveyed (level of detail and realism). It can vary in following areas:

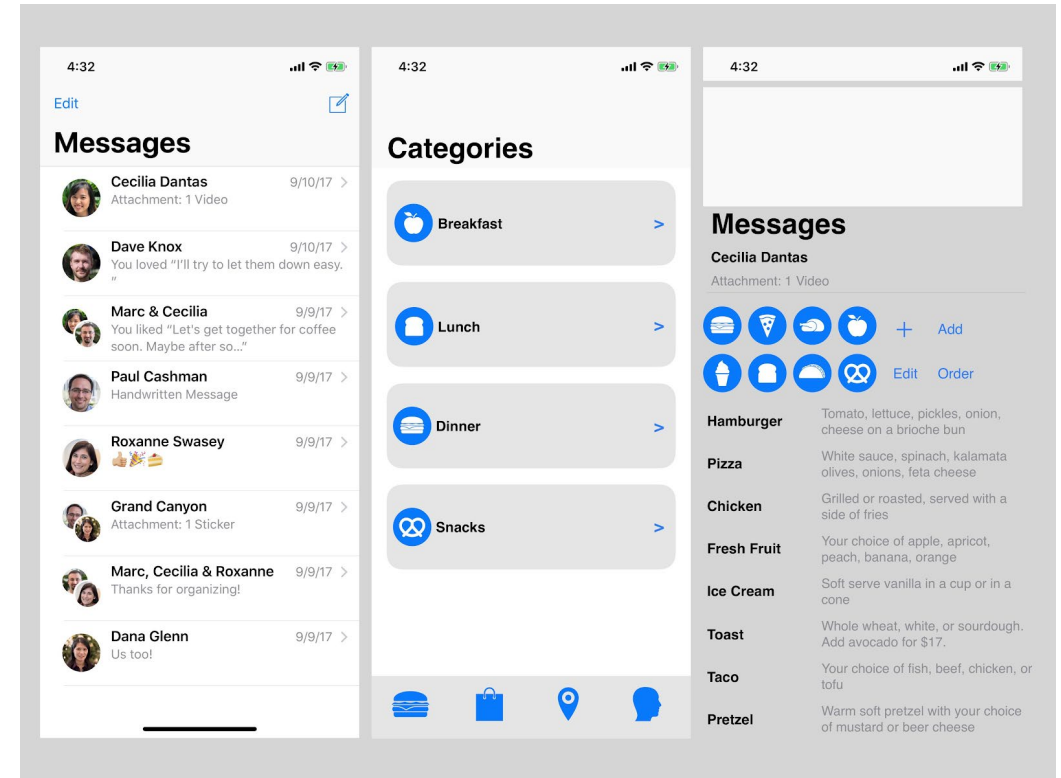- Visual design
- Content
- Interactivity

Low fidelity

High fidelity
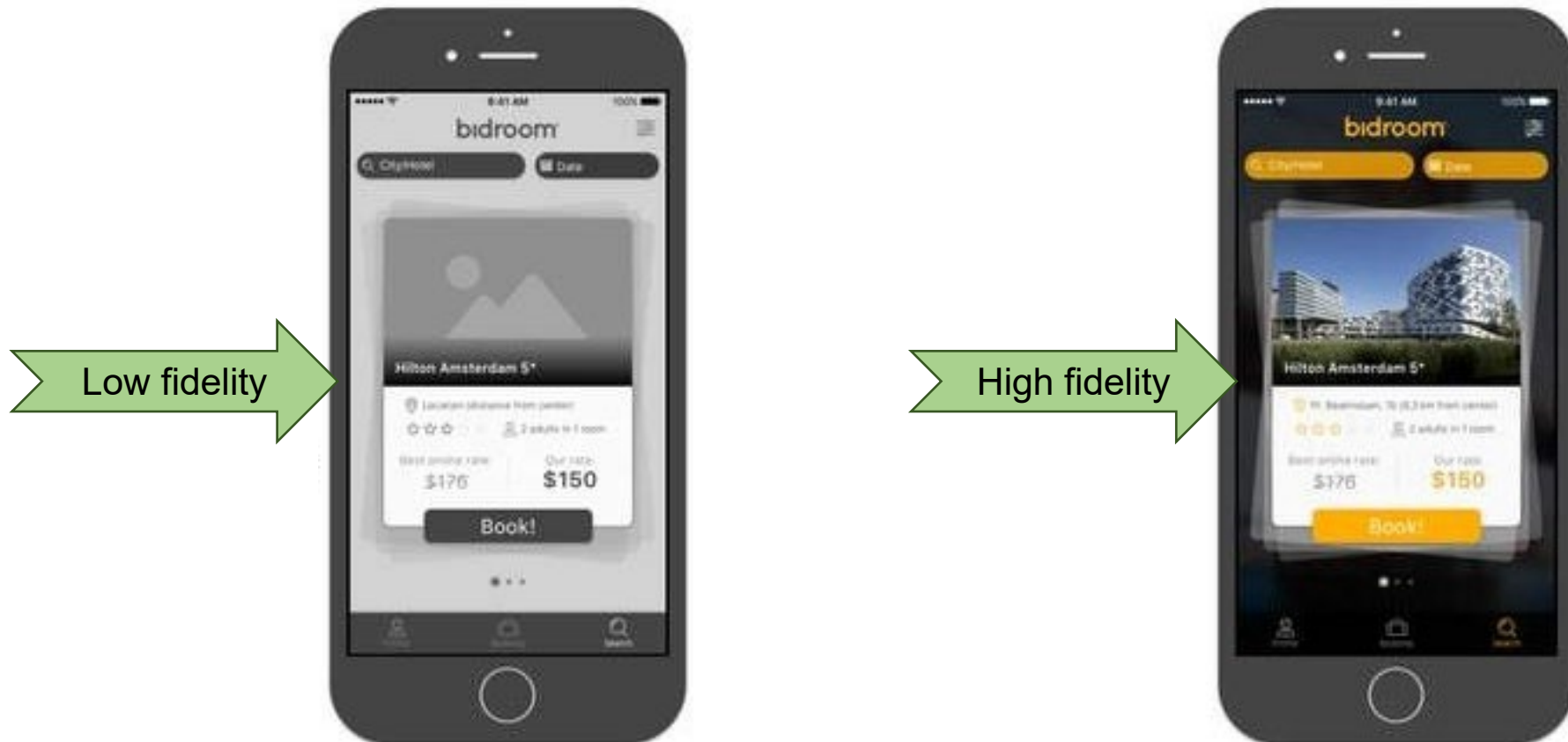
Low fidelity (lo-fi) protypes:

- Paper prototyping
- Clickable wireframes

Paper prototyping using basic office stationary items

Clickable wireframes, can be created using basic software like PowerPoint, Keynote or advanced specialized prototyping software like Adobe XD, Figma

High fidelity (hi-fi) protypes:

- **Digital prototype:**
  Visually rich, powerful and interactive prototype with transition effects and complex animation.

- **Coded prototype:**
  Close to the ready-to-release version of a product. Example: Rich interactive sandbox that allows test participants to explore different features of the product. Coding skills are must for creating this type of prototype.

Prototyping Tools and Resources:

Depending on type of prototype various tools and resources can be used.

In this course we will be using Adobe XD for designing digital prototypes.

Next...
UX Design Techniques – Paper Prototyping