UNIT -
3.2
The UX Design Process

1. Information Architecture

What is Information Architecture?

- Information architecture (IA) is a science of organizing and structuring content of the websites, web and mobile applications, and social media software.
- An American architect and graphic designer, Richard Saul Wurman, is considered to be a founder of the IA field.
- Today, there are many specialists working on IA development who have established the Information Architecture Institute.
- According to the IAI experts, IA is the practice of deciding how to arrange the parts of something to be understandable.

- IA aims at organizing content so that users would easily adjust to the functionality of the product and could find everything they need without big effort.
- The content structure depends on various factors. First of all, IA experts consider the specifics of the target audience needs because IA puts user satisfaction as a priority.
- Also, the structure depends on the type of the product and the offers companies have.

The role of IA in design:

a) IA and UX Design

- Many people may have the question: “Isn’t IA the same as UX design?”.
- Technically, these terms relate to each other but they are far not the same. IA is a blueprint of the design structure which can be generated into wireframes and sitemaps of the project. UX designers use them as the basic materials so that they could plan navigation system.
- Let’s get this straight: good IA is a foundation of efficient user experience, so the IA skill is essential for the designers

b) IA System Components

- If you want to build strong information architecture for the product, you need to understand what it consists of.
- Pioneers of the IA field, Lou Rosenfeld and Peter Moville in their book "IA for the World Wide Web" have distinguished four main components: organization systems, labeling systems, navigation systems and searching systems.

1) Organization systems

- These are the groups or the categories in which the information is divided. Such system helps users to predict where they can find certain information easily.
- There are three main organizational structures: Hierarchical, Sequential, and Matrix.

Hierarchical

- It is initially based on Gestalt psychological theory and its main goal is to present content on the carrier, be it a book page or poster, web page or mobile screen, in such a way that users can understand the level of importance for each element.
- It activates the ability of the brain to distinguish objects on the basis of their physical differences, such as size, colour, contrast, alignment etc.

Big City Guide

Sequential

- This structure creates some kind of a path for the users. They go step-by-step through content to accomplish the task they needed.
- This type is often used for the retail websites or apps, where people have to go from one task to another to make the purchase.

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by a long fermentation of dough u
naturally occurring lactobacilli and

★★★★★

$6.10 Add

Matrix

- This type is a bit more complicated for the users since they choose the way of navigation on their own.
- Users are given choices of content organization. For example, they can navigate through content which is ordered according to date, or some may prefer navigation along the topic.

MoneyWise App

- In addition, content can be grouped according to the organization schemes. They are meant to categorize content the product. Here are some of the popular schemes:
- Alphabetical schemes. Content is organized in alphabetical order. Also, they can serve as a navigation tool for the users.
- Chronological schemes. This type organizes content by date.
- Topic schemes. Content is organized according to the specific subject.
- Audience schemes. The type of content organization for separate groups of users.

Book Swap App

2) Labeling systems

- This system involves the ways of data representation.
- Design of the product requires simplicity, so a great amount of information can confuse users.
- That's why designers create the labels which represent loads of data in few words.
- For example, when the designers give contact information of the company on the website, it usually includes the phone number, email, and social media contacts. However, designers can't present all of this information on one page. The button "Contact" in the header of the page is a label that triggers the associations in the users' heads without placing the whole data on the page.

So, the labeling system aims at uniting the data

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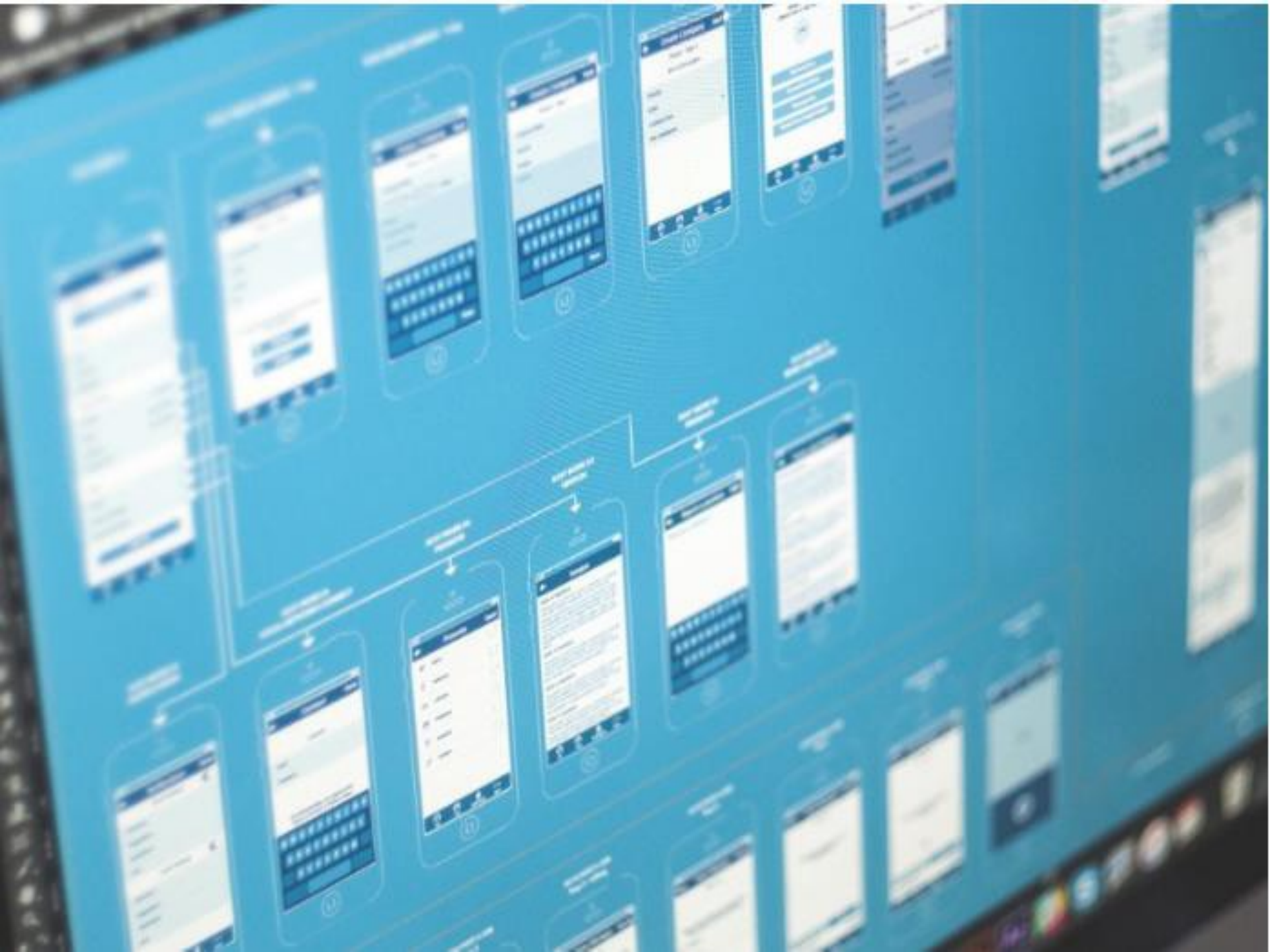
3) Navigation systems

- In one of our UX Glossary articles, we've defined navigation as the set of actions and techniques guiding users throughout the app or website, enabling them to fulfil their goals and successfully interact with the product.
- The navigation system, in terms of IA, involves the ways how users move through content. It's a complex system which employs many techniques and approaches, the reason why it's wrong to describe it in a short paragraph.

4) Searching systems

- This system is used in information architecture to help users search for the data within the digital product like a website or an app.
- The searching system is effective only for the products with loads of information when the users risk getting lost there.
- In this case, the designers should consider a search engine, filters, and many other tools helping users find content and plan how the data will look after the search.



2. Interaction Design

What is Interaction Design?

- It is design of the interaction between users and products. Most often when people talk about interaction design, the products tend to be software products like apps or websites.
- The goal of interaction design is to create products that enable the user to achieve their objective(s) in the best way possible.

The 5 dimensions of interaction design

- Gillian Crampton Smith,an Interaction Design academic, first introduced the concept of four dimensions of an interaction design language, to which Kevin Silver, senior interaction designer at IDEXX Laboratories, added the fifth.

1D: Words

- Words—especially those used in interactions, like button labels—should be meaningful and simple to understand. They should communicate information to users, but not too much information to overwhelm the user.

2D: Visual representations

- This concerns graphical elements like
  mages, typography and icons that users interact with. These usually supplement the words used to communicate information to users.

3D: Physical objects or space

- Through what physical objects do users interact with the product? A laptop, with a mouse or touchpad? Or a smartphone, with the user's fingers?
- For instance, is the user standing in a crowded train while using the app on a smartphone, or sitting on a desk in the office surfing the website? These all affect the interaction between the user and the product.

4D:Time

- While this dimension sounds a little abstract, it mostly refers to media that changes with time (animation, videos, sounds).

5D:Behaviour

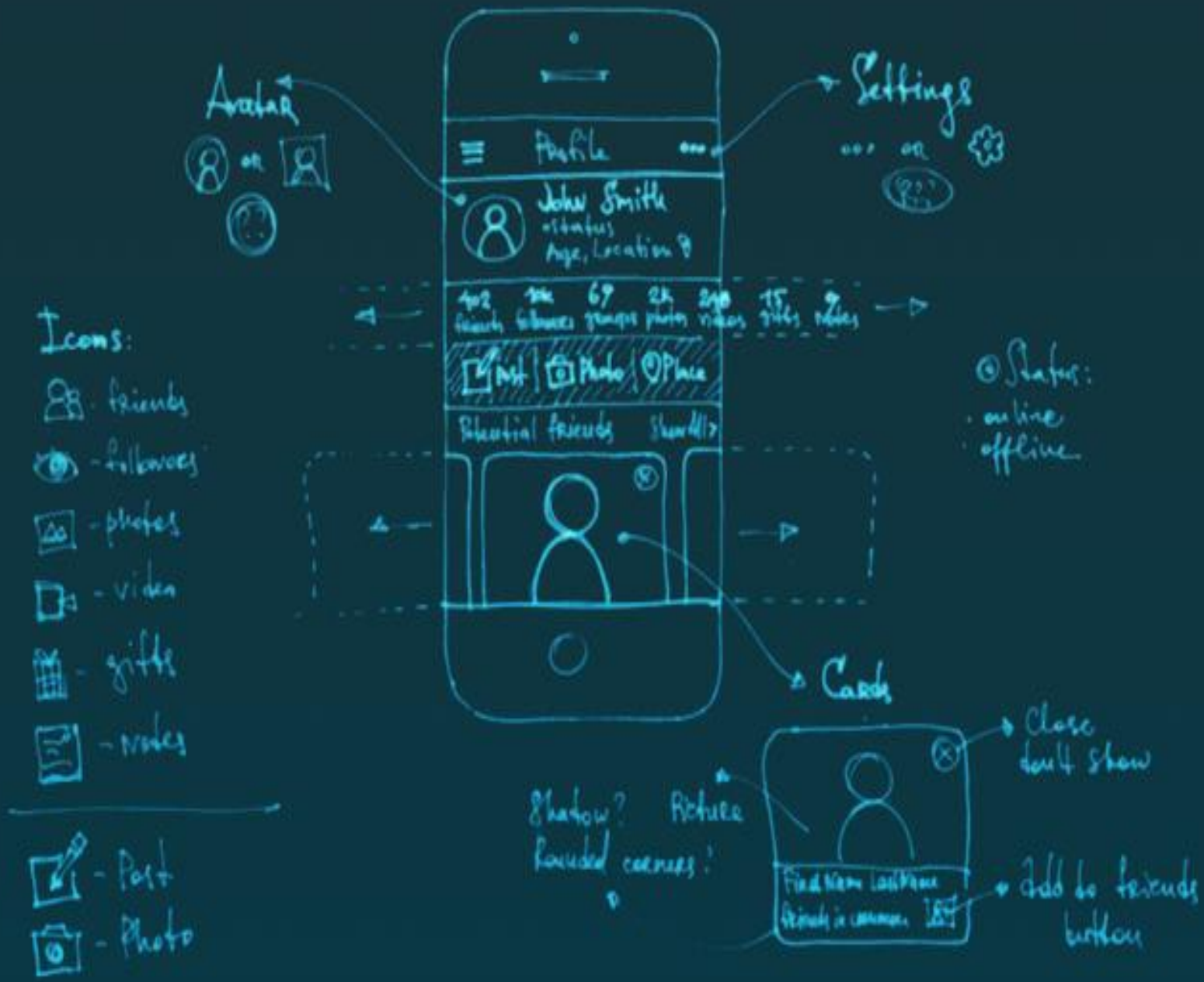
- This includes the mechanism of a product: how do users perform actions on the website? How do users operate the product?
- In other words, it's how the previous dimensions define the interactions of a product. It also includes the reactions—for instance emotional responses or feedback—of users and the product.

5 DIMENSIONS OF INTERACTION DESIGN

3. Wireframes, Mockups, Prototypes: Introduction

What is Wireframe?

- A wireframe is neither more nor less than a draft of the product. When painting a picture, an artist firstly draws a sketch. It works the same way with mobile and web design.
- Wireframe introduces a general scheme of the app or site and shows the layout of its components. It is usually the first step in the design process.
- Wireframes may differ depending on the level of detalization. However, all of them reflect a basic view of app or site with a proper placement of buttons, tabs, icons, and other elements.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Relational friends
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Cards
Shadow? Picture
Rounded corners?
Close
don't show
Add to friends
button

How to make a wireframe?

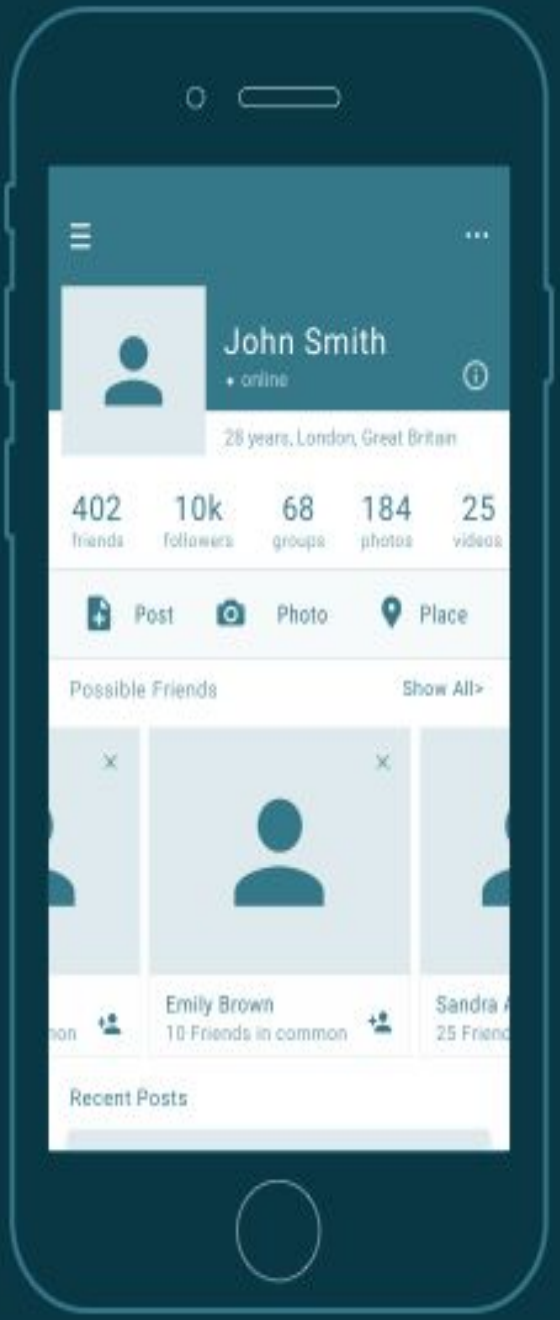
- The wireframe should be created with reference to specific features of the product. Also, you should consider the end-user.
- Before you begin wireframing, try to answer the following questions:
  - Which UI elements are the most important for the user?
  - Which elements are of a secondary consideration?
  - How are they going to be arranged?
  - What content will appear on the page?

Why is wireframe needed?

- Wireframes help to organize data and clearly shows a content to be displayed on a certain app screen or website page.
- You might omit wireframing if you work on a very simple and non-lasting project.
- If this is not the case, approach to the task with a great care. As a result, you will gain the following benefits:
  - **Clarity**: since you will know for sure which elements are going to be located on the defined screens or pages.
  - **Adjusting**: since you can easily control the placement of elements, move or delete them if needed.
  - **Connection**: since your client will be deeply involved in the planning process.

What is Mockup?

- Mockups reflect the design choices for color schemes, layouts, typography, iconography, the visuals of navigation, and the overall atmosphere of the product.
- Mockups serve both for the team and the client. The first uses it as a detailed instruction for the development, the second - as a clear example of the finished product.


John Smith
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Possible Friends
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Emily Brown
10 Friends in common
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How to make a Mockup?

- When you were working with a wireframe, it was your right to decide which level of detailization is needed depending on the target users.
- With Mockups, the situation is rather different. It is unlikely that you will create it for your own use.
- Before you start working, determine the answers to the questions below:
  - Which colour-grade is to be applied?
  - How will the navigation be organized?
  - Which input fields, search signs, menu buttons, and other parts are currently missing?
  - What is the common style or your app / site?

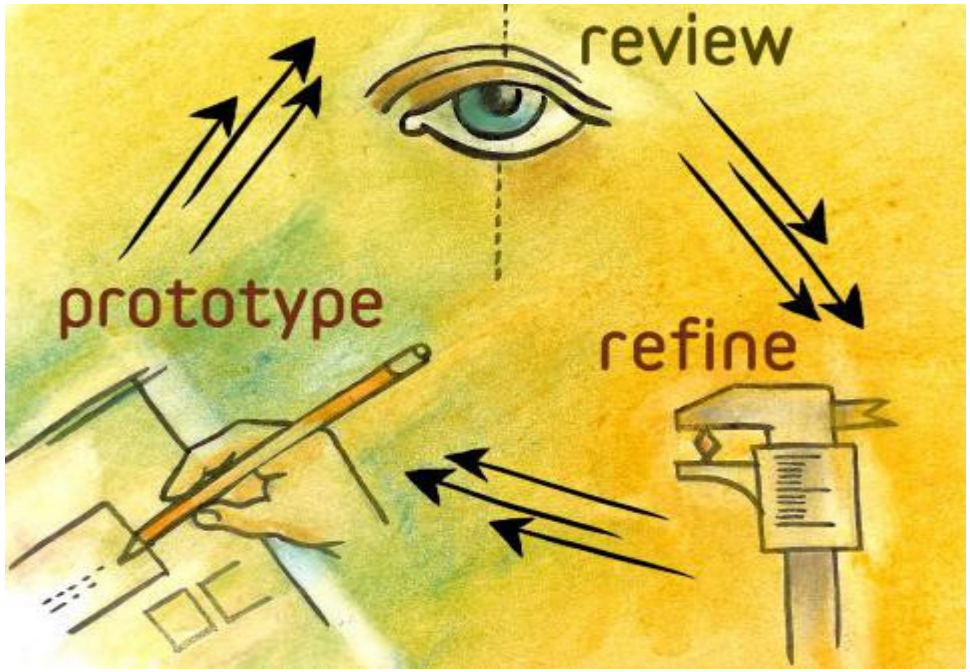
Why is Mockup needed?

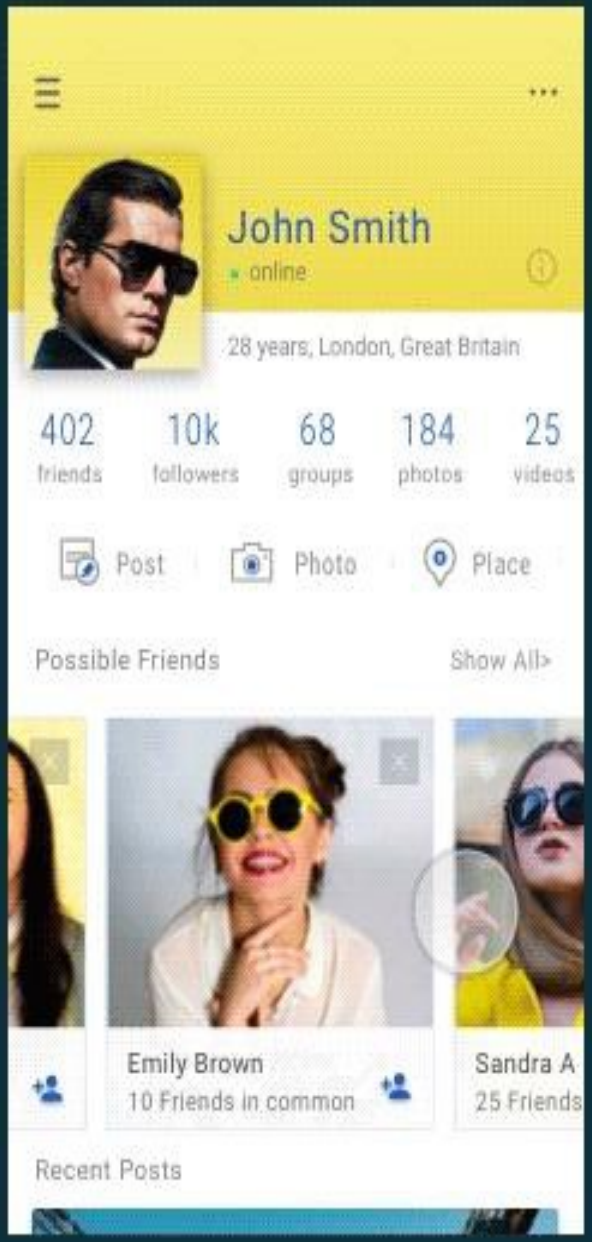
- You will get the following advantages:
  - **Specification** : since your team receives a detailed description of the product.
  - **Understanding**: since you see the product just the way the users are going to see it.
  - **Perfection**: since you can work through each minute detail.
  - **Confidence**: since you know that you are headed in the right direction.

3. Prototyping Introduction

What is a Prototype, Exactly?

- "A simulation or sample version of a final product, which is used for testing prior to launch."
- The goal of a prototype is to test products (and product ideas) before sinking lots of time and money into the final product.




John Smith
online
28 years, London, Great Britain
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Show All>
Emily Brown
10 Friends in common
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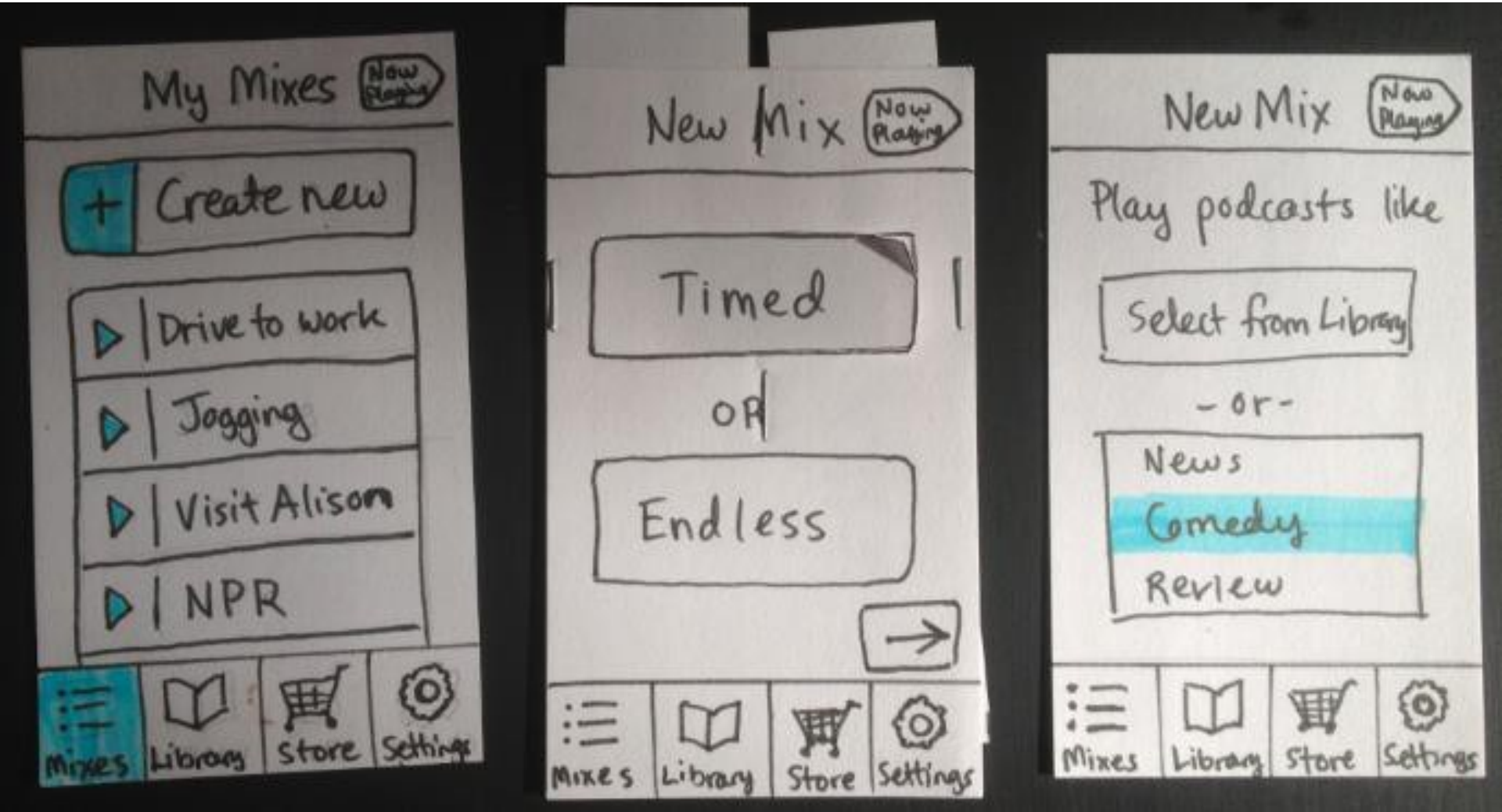
Prototypes have 4 main qualities:

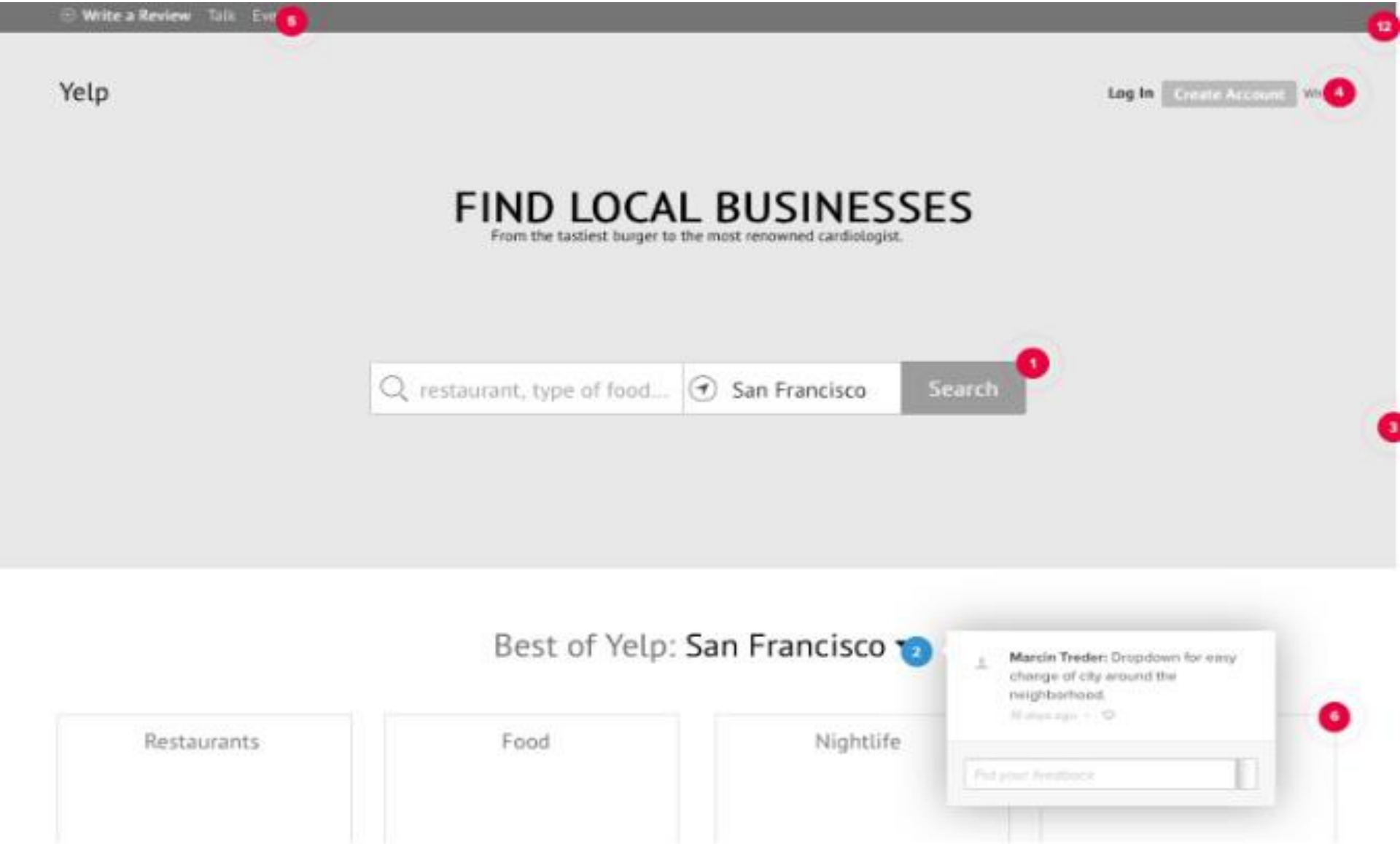
- Representation — The actual form of the prototype, i.e., paper and mobile, or HTML and desktop.
- Precision — The fidelity of the prototype, meaning its level of detail, polish, and realism.
- Interactivity — The functionality open to the user, e.g., fully functional, partially functional, or view-only
- Evolution — The lifecycle of the prototype. Some are built quickly, tested, thrown away, and then replaced with an improved version (this is known as "rapid prototyping"). Others may be built and improved upon, ultimately evolving into the final product.

The Most Useful Prototyping Methodology

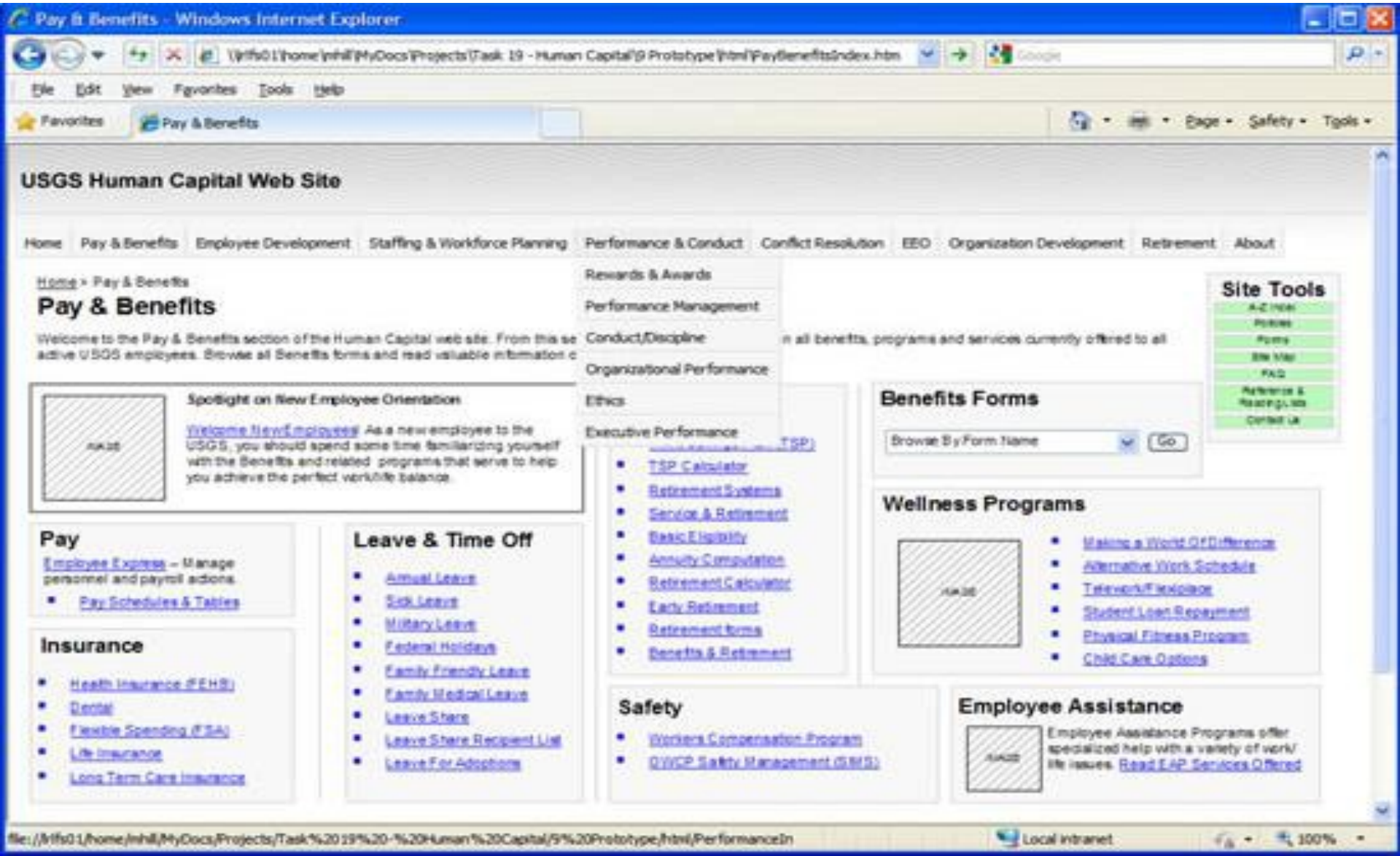
1) Paper Prototyping



2) Digital Prototyping



3) HTML Prototyping



The Prototyping Process

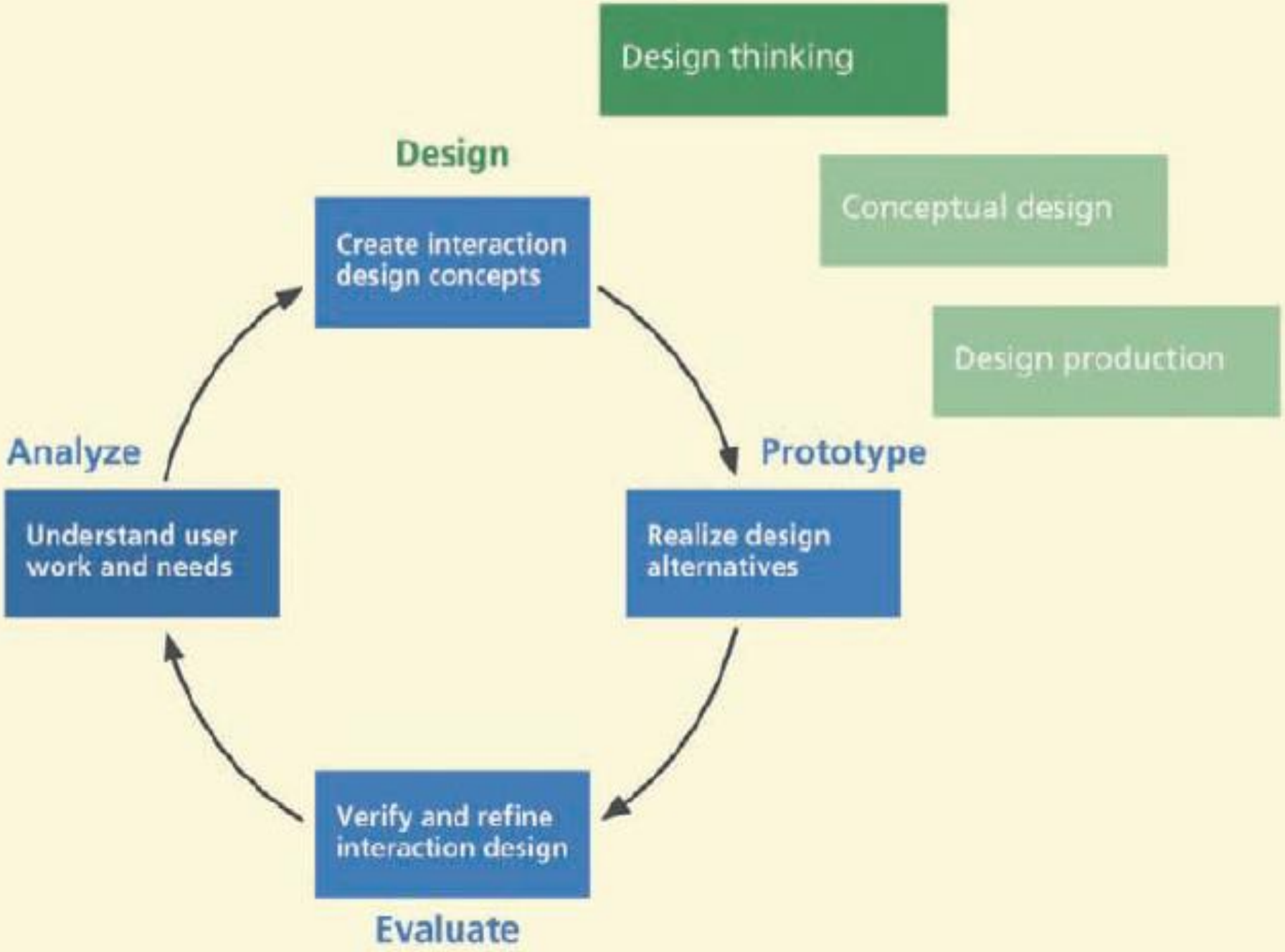
- Below are the three most effective processes, each suited to different needs.

1) Lo-fi Digital => Hi-fi Digital => Code
2) Paper => Lo-fi Digital => Code
3) HTML Prototyping => Code

4. Design Paradigm

4.1 Engineering Paradigm
4.2 Human Information Processing (HIP) Paradigm
4.3 Design-Thinking Paradigm

4. Design Thinking


Design thinking
Design
Conceptual design
Create interaction design concepts
Design production
Analyze
Prototype
Understand user work and needs
Realize design alternatives
Verify and refine interaction design
Evaluate

5. Design Perspectives

5.1 Ecological Perspective
5.2 Interaction Perspective
5.3 Emotional Perspective

6. User Persona

Candidate personas

Cover all sub-roles and user classes for each work role

Goal-based consolidation

Selected personas

To be included or accounted for in design

Identify best choice as design target

Primary persona

Primary focus of specific design

7. Ideation

- Ideation is an active, fast-moving collaborative group process for forming ideas for design.
- It is an activity that goes with design thinking; you might say that ideation is a tool of design thinking; "**ideation is applied design thinking**". Ideation is like putting design thinking into action
- Ideation is where you start your conceptual design.
- Ideation is where you brainstorm to come up with ideas to solve design problems.
- Ideation is inseparable from sketching and evaluation aimed at exploration of design ideas.

- Essential Concepts
  - Iterate to explore
  - Idea creation vs. Critiquing
- Doing Ideation
  - Set up work spaces

  - Assemble a team

  - Use ideation bin ideas to get started

7. Sketching

- Sketching is the rapid creation of freehand drawings expressing preliminary design ideas, focusing on concepts rather than details.

7.1 Essential Concepts

- Sketching is essential to ideation and design
- What sketching is and is not
- Sketches are not the same as prototypes
- Sketching is embodied cognition to aid invention

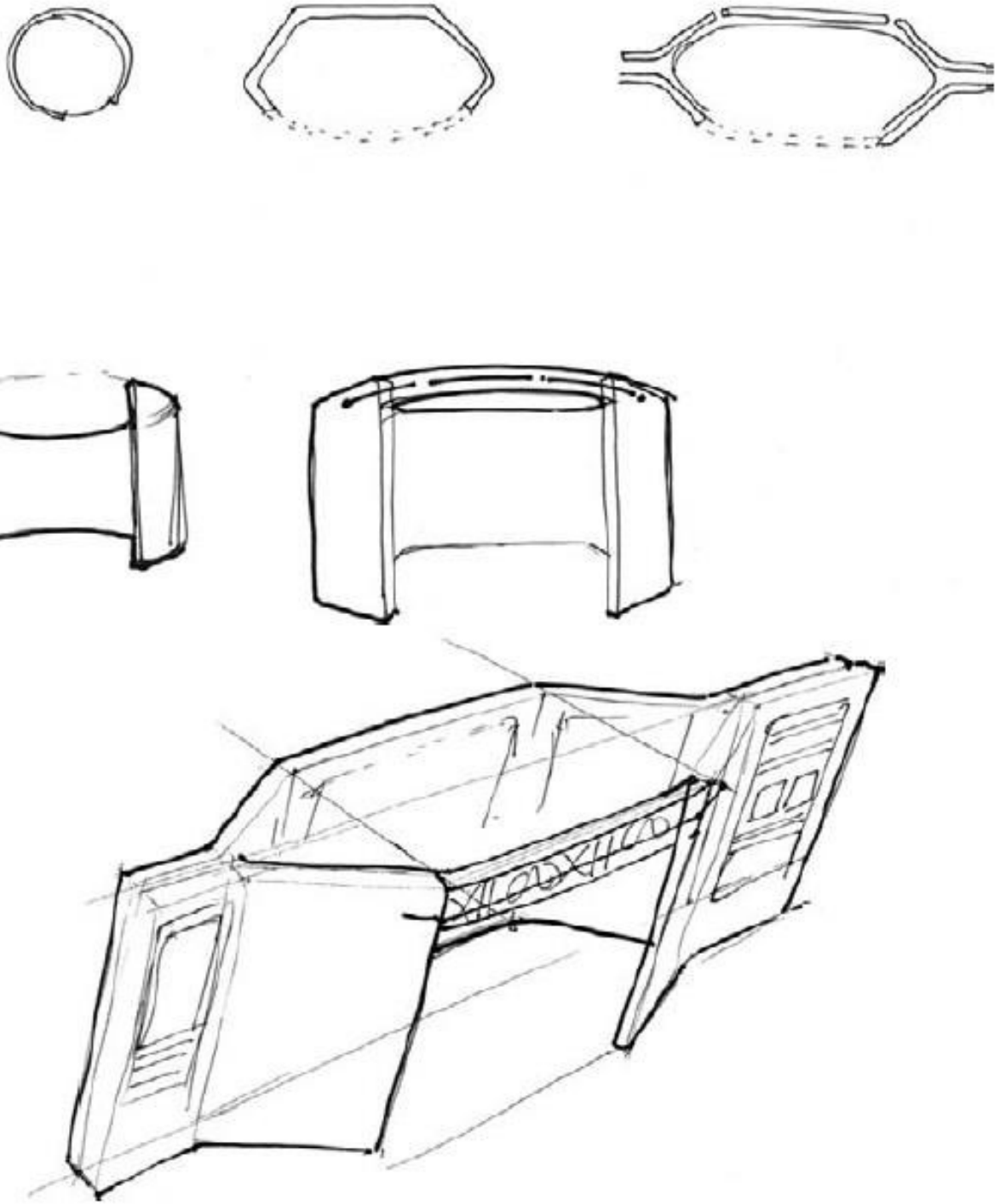
"Sketching helps you think with your body to come up with new ideas." This means that when you sketch, you use both your mind and body to visualize and generate inventive concepts.

7.2 Doing Sketching

- Stock up on sketching and mockup supplies
- Use the language of sketching

Figure 7-9

Freehand gestural sketches for the Ticket Kiosk System (sketches courtesy of Akshay Sharma, Virginia Tech Department of Industrial Design).



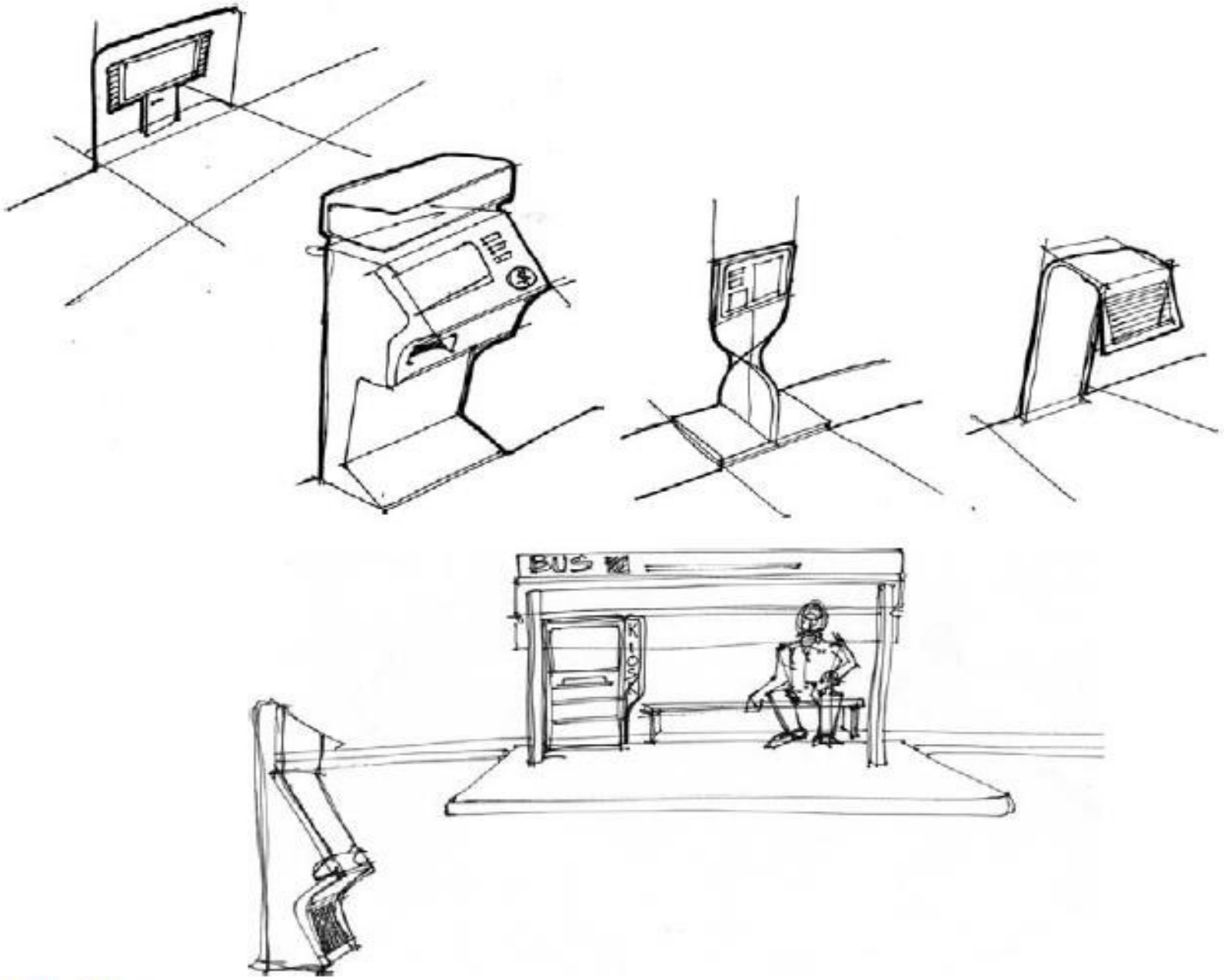


Figure 7-10

Ideation and design exploration sketches for the Ticket Kiosk System (sketches courtesy of Akshay Sharma, Virginia Tech Department of Industrial Design).

7.3 Physical Mockups as Embodied Sketches

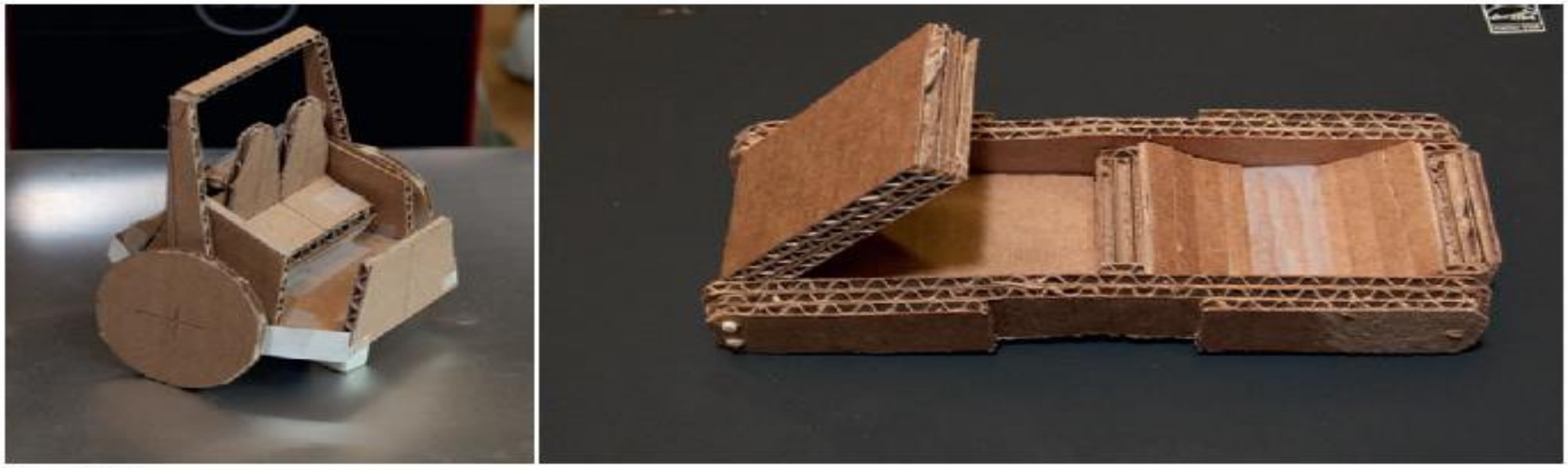
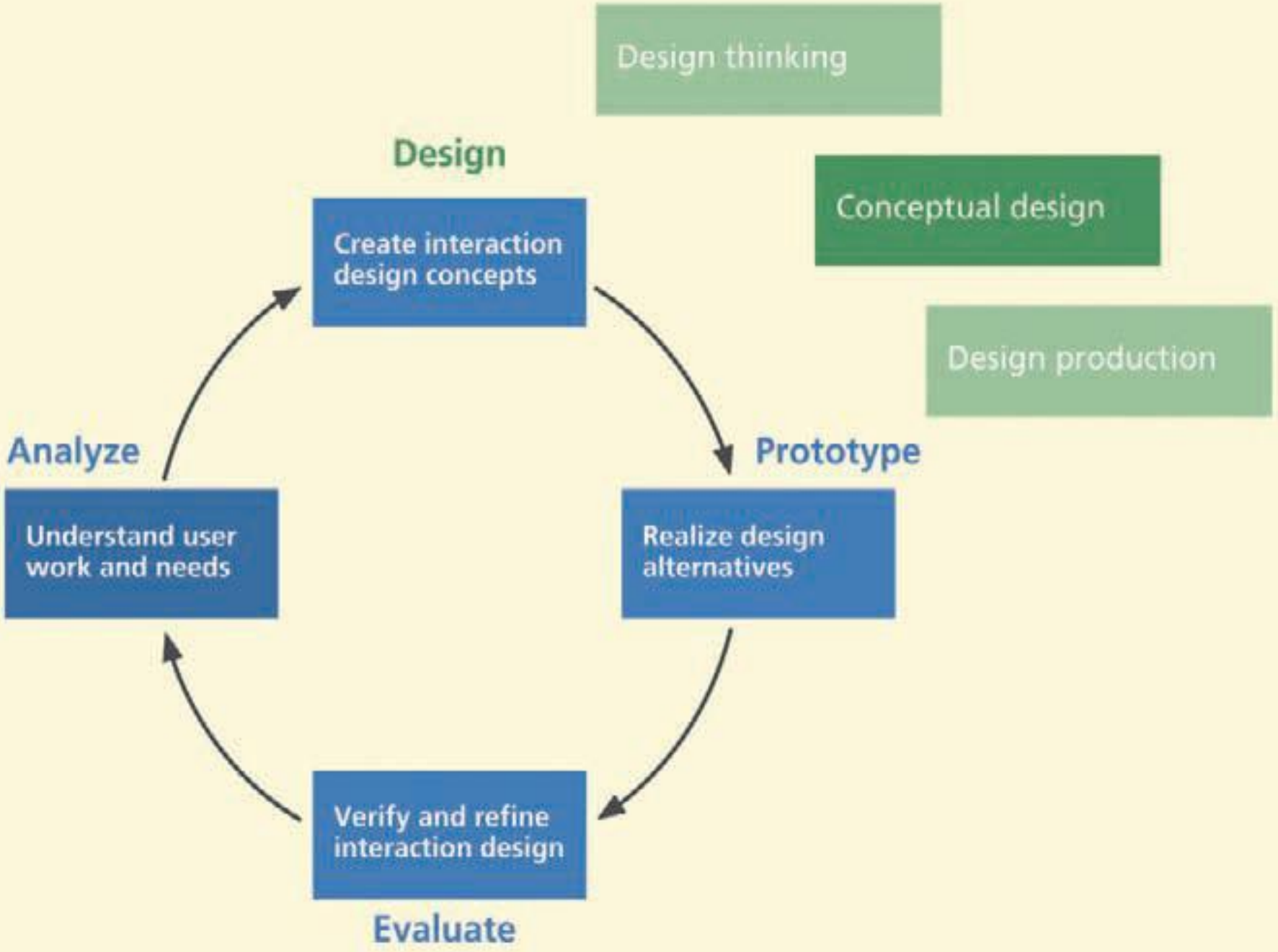


Figure 7-16

Examples of rough physical mockups (models courtesy of Akshay Sharma, Virginia Tech Department of Industrial Design).

8. Mental Models and Conceptual Design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Evaluate

"A mental model is an explanation of someone's thought process about how something works in the real world."

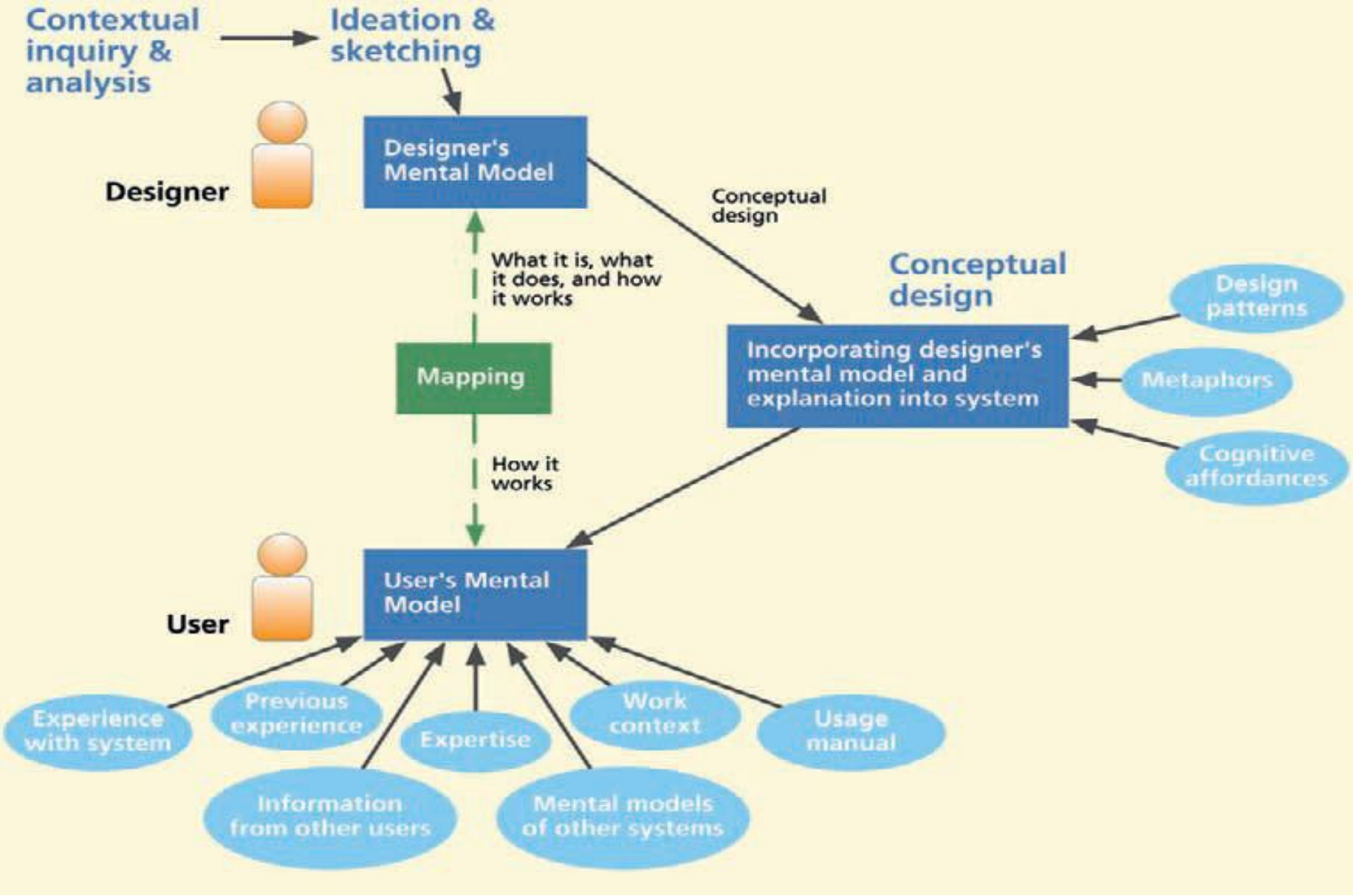
8.1 Designer's Mental Model

Sometimes called a conceptual model (Johnson Henderson, 2002, p. 26),the designer's mental model is the designer's conceptualization of the envisioned system

- what the system is?
- how it is organized?
- what it does?
- how it works?

8.2 User's Mental Model

- A user's mental model is a conceptualization or internal explanation each user has built about how a particular system works.
- As Norman says (1990), it is a natural human response to an unfamiliar situation to begin building an explanatory model a piece at a time.



Mapping the designer's mental model to the user's mental model.

8.3 What Is a Conceptual Design?

" A conceptual design is the part of an interaction design containing a theme, notion, or idea with the purpose of communicating a design vision about a system or product."

8.4 Start with a Conceptual Design

8.5 Leverage Metaphors in Conceptual Design

8.6 Conceptual Design from the Design Perspectives

- Conceptual design in the ecological perspective
- Conceptual design in the interaction perspective
- Conceptual design in the emotional perspective