

Rapid Prototyping

ITIS 4350/5350

Stage of Design

- Early
 - When the product is in ideation, nothing is committed, anything is possible
- Mid
 - The basic concept is determined, but still much to be decided
- Late
 - Most design decisions have been made, but some fine details still need to be worked out

Longevity

- Short term (**throw-away**)
- Medium term (stick around as documentation)
- Long term (used throughout the process, and/or becomes part of the final product, **evolutionary**)

Fidelity

- Fidelity is often discussed as a binary parameter: high fidelity (Hi-Fi) versus low fidelity (Low-Fi)
- In reality, fidelity is more of a continuous spectrum, and can be applied to a prototype as a whole or to various aspects of a prototype

Fidelity

- You can emphasize different types of content in your prototype by increasing the fidelity of those contents
- To test a requirement, make that idea/concept/aspect high fidelity, and everything else low fidelity
- To test out a bunch of initial ideas, do lots of low-fi prototypes

Fidelity

- As fidelity increases, the time and expense associated with creating the prototype increases
- Prototyping should be a progressive activity with lots of low-fi prototypes and fewer prototypes created as the fidelity increases.
- Eventually, you should just be creating more refined prototypes of one idea...

CF Matrix Activity

Simplified Content-Fidelity Matrix

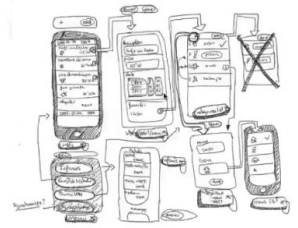
TABLE 5.1 Content Fidelity Matrix

Content	Very Low Fidelity	Low Fidelity	Medium Fidelity	High Fidelity	Highest Fidelity
Information design					
Interaction design					
Visual design & Branding					
Editorial content					

Prototype Content Aspects

- Information Design
- Interaction Design
- Visual Design & Branding
- Editorial Content

Information Design



- Organization, flow and labeling of information within the system space
- Separate from the editorial content
- Focuses on **high-level text**
- Focuses on **high-level layout, structure and location, navigation**

Testing Ideas about navigation and flow:

- Can this task be done across 2 screens, or do we need 3 separate screens?
- Should this web content all be on 1 page, or spread across 5 separate pages?
- What kind of navigation should we use?

Interaction Design

- How the user interacts with the system - both on each screen/page & for moving between screens/pages
- Focus on how system **responds to user actions**
- What type of temporary / permanent feedback given?
- Looking for consistency across system
- Can users complete the task?

Highlight interaction design by creating high-fidelity interactive digital prototype

- Simulate functions / results & feedback
- Make buttons / nav links active
- Simulate gestures

Visual Design & Branding

- Composition of visual elements & presentation style of each element
 - Layout
 - Typography
 - Graphical elements
 - Color schemes
 - Visual imagery
- All important - affect first impressions / emotional responses
- Emphasize VisDe using high-quality colors / graphics
- VisDe is usually done later than info. / interact. design
- Branding
 - Emphasize using corporate logos, colors, styles
 - De-emphasize using placeholders (logos) B&W vs. colors

Editorial Content

- Message / information content
- Style / tone of writing
- Actual content (e.g., images / movies)
- Accuracy - is this correct information for user at this point in task / interaction
- EC emphasized in later stages
- EC writing depends on information design
 - Different if info. on web site in 3 pages vs. 5
- De-emphasize EC
 - “Greek” text
 - Use placeholders
- Emphasize EC
 - Proper, hi-fi fonts
 - Actual text
 - Actual movies/images

Information Design

- Organization, flow and labeling of information within the system space
- Focuses on **high-level text**
- Focuses on **high-level layout structure and location, navigation**
- Task require 1, 2, 3 ... screens? All content on one page or spread out on many?
- What kind of navigation to use?

Interaction Design

- How the user interacts with the software/system/site
- on each screen/page (software functions, forms, etc.),
- and for moving between screens/pages
- focus on how system responds to user actions
- What types of temp / permanent feedback given?
- Consistency across system? Can users complete task?

CF Matrix

Fidelity is:

Very Low ... Low ... Medium ... High ... Very High

Visual Design/Branding

- Composition of visual elements and presentation style of each element
 - Layout
 - Typography
 - Graphical elements
 - Color schemes
 - Visual imagery

Editorial Content

- The message and information content
- The style and tone of the writing (first person, second person, third person, formal, informal, etc.)
- The actual content of images, movies
- The accuracy (is this the right information for the user at this point in the system/task/interaction)

Why De-Emphasize Anything?

- Saves time and effort in early prototyping
- Allows audience to focus on what's important now - not get sidetracked by changeables
- Show audience that other stuff has not been decided, so they don't worry at this point
- Shows work-in-progress, encourages honest feedback

Sample Content-Fidelity Matrix

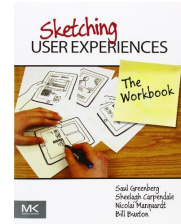
Content	Very Low Fidelity	Low Fidelity	Medium Fidelity	High Fidelity	Very High Fidelity
Information Design			✓		
Interaction Design				✓	
Visual Design & Branding		✓			
Editorial Content	✓				

This example specifies that we should design a prototype that focuses mostly on interaction design, and somewhat on information design, and de-emphasize other content aspects.

Sketching Vocabulary

Sketching Vocabulary

SUE 3.3



Objects

Tools

(pencil, pen, magnifying glass, wrench, scissors)



Digital Devices

(camera, phone, cell phone, computer, mouse)



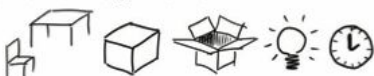
Documents

(paper, books, photos, piles)



Physical Objects

(tables, chair, boxes, light bulb, clock)

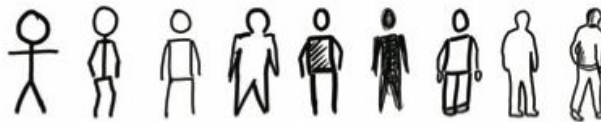


Abstract Shapes

(arrows, signs)



People



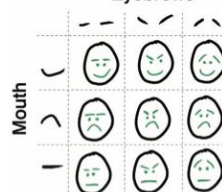
Activities



Emotions



Eyebrows



Combined

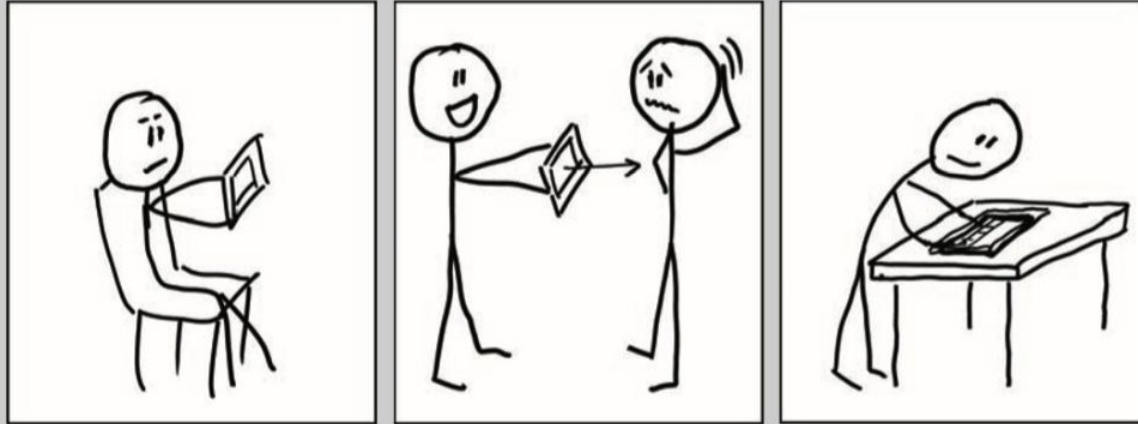


Exercise

smartphone in 2 very different, less than usual situations (e.g., flashlight)
NOT: basic phone call, texting, browsing that just shows person + device.

Draw a person interacting with a ~~tablet computer~~ in two different situations. For example, you can draw the person while sitting on a chair and reading a book, while showing a document on a tablet to a second person, and while placing the tablet on a table to write a text. Try to vary people's poses and facial expressions.

Our Solution:



Make sure to incorporate **Objects, Activities & Emotions**