

Requirement Analysis and Specification – Storyboard, Sketches, and Lo-Fi Prototypes

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Outline

- 1 Review for Last Class
- 2 Requirements: User-interface Design
- 3 Storyboards and Lo-Fi Prototypes
- 4 Tools
- 5 Online Tutorial
- 6 References

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Topics in Last Class

1. Overview of requirement engineering
2. Agile vs. traditional (plan & document)
3. An agile approach of requirement analysis
 - ▶ Behavior-Driven Development (BDD)
 - ▶ User stories (for requirement analysis, in ConnExtra format)
 - ▶ User stories map into testable scenarios – can use as acceptance test (in Gherkin format)

Today's Topics

Continue the discussion on requirement engineering for

- ▶ user-interface (UI) part of the requirements

What's our approach? – “Lo-Fi” sketches and storyboards

Outline

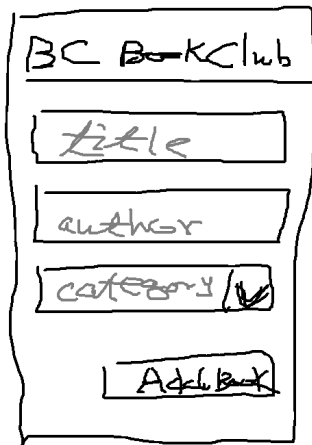
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Building UI

- ▶ Android apps often require user-interactions
 - ▶ User stories need User Interface (UI)
 - ▶ How to get customer to participate in UI design so is happy when complete?
- ▶ Avoid the what-I-said-is-not-what-I-want UIs?
- ▶ Small index cards for UIs? (like user stories)
- ▶ How can we show interactivity without building a prototype?

UI Sketches

That is, sketch UIs in small index cards – “Lo-Fi” UI



UI Sketches and Wireframes

That is, sketch UIs in small index cards – “Lo-Fi” UI

Wireframe: A visual representation screens of an interactive application that shows layout, types of information that are displayed, and elements of pointer-based navigation.

A wireframe is a sketch, although in general

Fidelity(sketch) < Fidelity(wireframe)

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Storyboard

A storyboard is a communication tool used by application designers to map out and organize their project ideas before actually developing their application/program.

Storyboarding is the process of creating a sequence of screens, i.e., storyboards to provide an overview of the project, such as

- ▶ demonstrate the arrangement and functionality of the program elements, and
- ▶ delineate the program's navigation scheme.

Caveat: Storyboard is an overloaded term.

From UI Sketches to Storyboards and Lo-Fi Prototype

- ▶ Need to show how UI changes based on user actions
- ▶ Use “storyboards” to connect UI sketches and user interactions and app behavior
- ▶ Like scenes in a movie, but not linear (why?)
- ▶ Can lead to the creation of a Lo-Fi prototype (is there a difference?)

Example Storyboards and UI Sketches

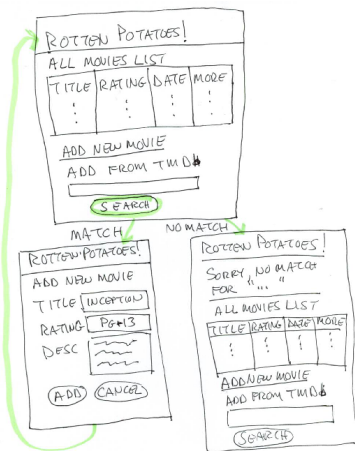


Figure: from "Engineering Software as a Service" by Armando Fox and David Patterson (2nd Eds)

Why “Lo-Fi“ Storyboards and UI Sketches and Prototypes?

Although tedious to create UI sketches and storyboards, they are easier than producing Android App UIs.

- ▶ Less intimidating to nontechnical stakeholders, as a result, developers and stakeholders
 - ▶ are more likely to suggest changes to UI if there is no code behind it, and
 - ▶ are more likely to focus on interaction rather than colors, fonts, ...

Delay some UI details like making it look nice later – do that when putting together the actual app and polish it

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Tools

Tool examples: Figma (<https://www.figma.com>)

A range of tools ...

- ▶ Microsoft Paint
- ▶ Microsoft Word
- ▶ Microsoft PowerPoint
- ▶ Draw.io (<https://draw.io>)
- ▶ ...

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Tutorial Videos

Watch 1st 20 minutes together

<https://youtu.be/3F4mWr1cY-8>

You are welcome to watch the entire series in your own time.

<https://youtu.be/WyXTT30YFjl>

Questions

- ▶ Introduce a low fidelity method to elicit requirements about UI.
- ▶ UI sketches
- ▶ Storyboards and Lo-Fi Prototypes

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“Engineering Software as a Service” by Armando Fox and David Patterson (2nd Edition)

“Essentials of Software Engineering” by Frank Tsui, Orlando Karam, and Barbara Bernal(4th Edition) (Section 7.3.5)