



SE3821: Software Requirements and Specification

Lab 5: Prototyping the System

Due: November 7, 2012 during lab

1. Objectives

- Construct a low fidelity prototype of the system
- Construct a storyboard of the system
- Demonstrate the prototype of the system to a potential user
- Record the responses of the user

2. Introduction

Prototypes are a technique used in requirements to determine whether or not the system meets a user's requirements. During elicitation, it is a common practice for requirements analysis to generate prototypes of the system. These prototypes can be shown to a stakeholder for evaluation.

In this lab, you will create a low fidelity prototype for the medication system. The low fidelity prototype will then be shown to two peers from MSOE for feedback. One peer may be another software engineer, either in a different class or in a different grade. One student can be of any major, though it might be useful to demonstrate the prototype to a nursing student.

3. Low Fidelity Prototypes

As is stated in the textbook,

Low-fidelity prototypes help stakeholders concentrate on the subject matter by using familiar media. Such things as pencil and paper, whiteboards, flip charts, Post-it notes, index cards, and cardboard boxes can be employed to build effective low-fidelity prototypes (Figure 12.3). In fact, these prototypes may take advantage of anything that is part of the stakeholders' everyday life and do not require an additional investment.

The low fidelity prototype does not look like the finished product and encourages iteration. It is an easy to change mockup of the system.

Furthermore, as is stated in the textbook,

We find that prototyping is more convenient, and ultimately more accurate, if the prototype involves a single business use case or a single product use case. As the prototype involves some simulated product, we will assume you are prototyping a product use case. We introduced business and product use cases back in Chapter 4. Recall that a business use case is an amount of work, triggered by an external business event occurring or by a predetermined time being reached, that takes place in a single, continuous time frame. It also has a known, measurable, testable outcome. A product use case is the part of the business use case to be done by the product. Because of the single, continuous time frame, it provides you with an appropriate amount of work as the subject of your prototype.

Effective prototyping tools are inexpensive and do not have to be complex. Low fidelity prototypes offer the maximum ability to change course and revise the prototype based upon user feedback.

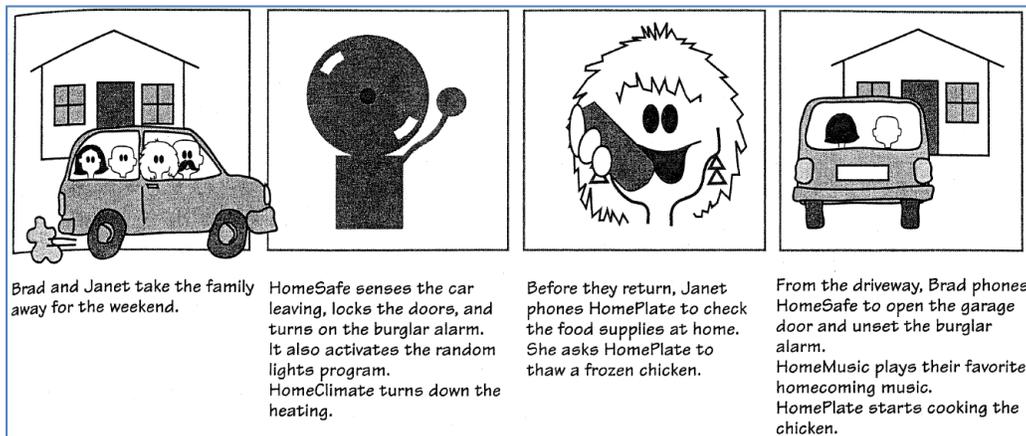
4. Storyboards

Per the textbook,

Storyboards are a prototyping technique borrowed from the film and cartoon industries. When a cartoonist is planning a cartoon, he sketches a number of linked pictures. These pictures identify the story line and guide the cartoonist in how many detailed pictures he needs to draw. A similar path is followed with movies: The script is sketched out on a storyboard, with a panel for each scene showing the actors, close-up or long shot, mood of the scene, and dialog for that scene. The director and the storyboard artist work on each panel, prototyping the movie, until the director is satisfied the story is being effectively told. Then they shoot the movie as it is laid out in the storyboard.

Building a story board means that one thinks of the proposed functionality as a story and breaks it down into discrete steps. The storyboard shows the action occurring in each step (or possibly the user interface for each step) as well as aids in discovering the flow through the system.

When drawing story boards and low fidelity prototypes, do not be embarrassed by the quality of your artwork. The goal is not to create a great work of art, but rather to present a communicable representation of your system.



Sample story board (From the text)

5. Lab Specifics

In lab this week, you are to create a low fidelity prototype of your system and a storyboard representing the typical use of your system. The easiest way to do this is to draw the images on individual 8.5 x 11 sheets of paper. You may be as colorful as desired.

Once you are done with your storyboard / low fidelity prototype, you are to set up two sessions with peers. One session should be with another software engineering student . (Note: The student may be any student provided they are not in this class.) With this student, you are to demonstrate the operation of the system and record any feedback



they may have. Once you have done this, you may want to markup or make changes to your prototype by adding additional pictures or additional steps. That is OK.

You then are to demonstrate this system to another student, either software engineering related or not. (Ideally, you might find a nursing student, but that is not required.) You are to go through the same demonstration of the system with them and record their comments.

Next week in lab, your team will give a brief 10 minute oral presentation on the findings. The presentation should include a demonstration of your storyboard, as well as a brief summary of your findings. To transfer the storyboard to a larger size, you can bring it by the EECS office during normal office hours and the student worker and / or administrative assistant will be able to scan it for you in color in PDF format. You can then use pdf merge or another tool to merge in a title page and your findings for the presentation.

6. Submission

Your team will submit a single pdf including a title page, scans of your story board / low fidelity prototypes, and findings from showing your prototypes to potential users.

If you need help with the assignment submission process, please ask.