CEG 4110/6110 Final Project Analysis Specification

Fall 2019

Assigned: November 7, 2019
Due: November 17, 2019

Introduction:

Your software development firm's acquisition of the incident reporting and project "Quick-Reports" was successful. Your team has been tasked with analyzing, designing, and implementing this project. Specifically, your team will implement the idea of recording all information that happened during a traffic incident in a quick and timely manner. This includes, taking multiple pictures, typing information, and automatically getting the current weather conditions. The first step in developing this software system is establishing an analysis specification as the requirements are given. The specification describes the goals of your project, analyzes its most important software qualities, and describes its functional requirements, major use-cases, and basic module layout.

Quick-Reports Requirements

An initial meeting with the Client representing "Quick-Reports" established the following minimum set of functional requirements:

- The software should be implemented as a mobile application on the iOS or Android platforms.
- The software should make it easy to take one or more pictures, get current weather information, and write information about the incident.
- Due to financial constraints, the weather information will be retrieved via a free Weather Application Programming Interface (API).
- All information regarding an incident report should be able to be saved and retrieved from the mobile device.
- The software should allow the user to browse all saved reports titled by the user when initially saved.
- The software will have an intuitive User Interface (UI) that makes it easy and friendly for a user.

Furthermore, the following environmental and external requirements were also implicitly derived:

- The software should be robust. That is, presenting buggy work to the client is not a good idea for continuous job security.
- An internal database should be utilized (such as SQLite for Android) for saving and retrieving all related incident report information.
- The process of saving and retrieving images in particular should not affect image resolution.

Analysis Specifications

Your team will produce an Analysis Specifications document for "Quick-Reports". This document contains the purpose, goals, a more formal-toned version of the requirements, and conceptual design of the system. The document will include the following items:

1. A brief statement, in a few sentences, about what the goals are for the product and the teams vision.
2. A set of functional requirements for the system. Describe what the functional requirements are and why they are included. Also, assign a corresponding priority level from 1 to 5 where priority 1 is the most important. You should include between 8 and 15 functional requirements with a mix of priority 1-2, 3-4, and 5 requirements. An example functional requirement (which you can use and modify) is: *"The software must utilize SQLite version 3.19: Priority 5"*.
3. Provide a set of 3 different use-cases with corresponding use-case diagrams for the software. For each use-case, mention the actors involved (the user, the weather API, the "Quick-Reports" mobile application, or any other actor that you may think of) and what part of the system they are interacting with.
4. Sketch a UI prototype either by hand or by using a program such as *draw.io*. That is, provide rough diagrams that depict the major UI elements. Note, if a window leads to a dialog box, drop-down box, etc., perhaps a sub-diagram should be included. Also, your diagrams do not need to be works of art for full credit. They must only be legible and show the thought process of your initial UI design and how the user will interact with the software.
5. A high-level design of the product decomposed into modules. Recall what a module can be and create modules which detail the functionality and/or data being stored, managed, or manipulated. A good way of deciding on modules is by creating entity, boundary, and control classes from the methods discussed during class. An example high-level module: *saveData(x, y, z)*. These can also be represented with Class Responsibility Collaboration (CRC) cards if you wish.

Deliverable Requirements:

A single word or PDF document of the Analysis Specification is to be submitted to the corresponding pilot dropbox. The document must be intuitively labeled with the five items discussed. Furthermore, you must include a cover page listing the name of your software and group members.

Grading:

This portion of the final project be graded as follows: 20% for each of the five items shown in the Analysis Specifications section of this document.