CS320 Project Milestone 2: Software Design

Instructor: Xinghui Zhao Due: 11:59pm on 10/21/2018

1 Introduction

Software design is a process by which the software requirements are translated into a representation of software components, interfaces, and data necessary for the implementation phase. The Software Design Document (SDD) shows how the software system will be structured to satisfy the requirements. It is the primary reference for code development, therefore, it must contain all the information required by a programmer to write code. You will use UML modeling in this milestone.

2 Software Design in UML

In this phase, you will design the system structure and behavior using UML diagrams.

2.1 Activity Diagrams

Revisit the use case diagram(s) you included in the SRS. Design an activity diagram for each scenario. Note that you do not need to design an activity diagram for every use case/scenario, i.e., you can ignore the use cases which are easy to implement, and only include activity diagrams for the more complex ones. To achieve better traceability and easier validation at later stage of the project, you should reference your SRS when possible, e.g. Activity Diagram 2 models Use Case 5. This enables traceability. Also, you should use the "swimlane" type of activity diagrams.

2.2 Structural Modeling

Design a class diagram for the system. You may consider to break the diagram into several smaller ones if necessary. In your class diagram(s), you should include the main attributes and operations (methods) for each class. Note that even if you are not going to write actual "classes" in your code, you still can create the class diagram. In this case, each class will be a module in your implementation.

2.3 Behavior Modeling

Depending on the type of your system, you may design either sequence diagrams or state diagrams. Specifically, sequence diagrams are suitable for data-driven systems, and state di-

agrams are good for event-driven systems. Note that it is also possible to have both, because it might be possible that certain functionalities of your system is event-driven, but others are data-driven.

3 GitHub

You are required to use GitHub for the project. At this stage, you should have already created a public GitHub repo for the project. You should start to work on the readme file of this project, which will be displayed on GitHub as your project homepage. On the homepage, you should include the following information:

- A brief description about the project.
- Team members.
- Current status of the project (e.g., design phase, prototype phase, implementation phase, testing phase, completed phase, etc.)

The GitHub link should be submitted along with the design document. Later in the semester, I will periodically check your commits on the GitHub. Make sure your commits have meaningful tags.

4 Submission

This assignment is due at 11:59pm on 10/21/2018.

Each team should submit the following files (only one representative needs to do this):

1. Design document in PDF format;
2. A text file which contains the link to the GitHub page of your project.

5 Grading Scheme

This milestone itself won't be graded, but it is part of the project, which contributes to 20% of the final grade. I will read your design and give you some feedback to guide the project.