CS320 - Project Milestone 2

Due November 20th, 2020

Group Project: Software Design

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.

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2.2 Structural Modeling

Design a class diagram for the system. You may consider breaking 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 Behavioral 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 diagrams 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 are 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.)

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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 11/20/2019. 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

This assignment will be graded out of 100. It contributes to 25% of the project grade. For your information, the grading scheme is shown in the following table.

Milestone 0: Team Agreement 5%
Milestone 1: SRS 30%
Milestone 2: UML 25%
Milestone 3: Final Submission 40%

Sections	Percentage
Activity Diagrams	25%
Structural Design	25%
Behavioral Design	25%
Effort in Using Design Patterns	10%
Use of Git	10%
Grammar and Writing Quality	5%