CSE 120: Software Engineering Course Fall 2022

Software Capstone Project – Lab 03: Design Phase Total Points Possible: 100

Purpose of Assignment

The Software Engineering course covers techniques for dealing with the complexity of software systems. We will focus on the technology of software engineering for the individual and small team, rather than business or management issues. This software capstone project aims to provide an opportunity for students to analyze, design, develop, and deploy a software product that is sponsored by an industry partner. By end of this lab, you will be able to define the parameters of **design phase** of your software capstone project.

Direction

This phase of project aims to define a software design model of a system (your software capstone project) and it will provide some tools to accomplish this phase.

The design phase of software engineering start with using the output of previous phase (analysis phase). It maps the requirements (use cases) to the architecture of your software project. The architecture will provide the definition of user interfaces and components (based on use cases), and behavior of the system (based on state diagrams).

In order to show behavior of the system, we need to define a prototype of a software project. You can use the output of analysis phase (Lab #2) to produce a prototype of your software product. Several free online tools are available for designing a prototype. A couple of them are listed below:

https://moqups.com

http://creately.com

You may also use an IDE to design a prototype.

A class diagram shows the structure of information and their relationships in your software project. You can use the *things* from analysis phase (Lab #2) to define a class diagram. Each class composed of one or several elements. Each class may have one or multiple relationship with other classes. Each class may have one or multiple child classes that allows the child(s) to use the features of one or multiple parents.

Reference: Chapter 9: Design Engineering from the recommended text book (Software Engineering. A Practitioner's Approach by Roger Pressman).

Lab #03 Assignment Rubric:

1- A **summary** of project progress report (20 points)
2- A **prototype** of your software product that shows all screens of your software product from *login scenario* to *log out scenario*. It will show the behavior of your software product based on all defined scenarios, but it does not need to be implemented **(we do not need code at this phase)**. (40 point)
3- A *class diagram* of your data/system structure generated by prototype design tools or IDE. You must not use document editors such as MS Word or Power Point (except MS Visio) or by hand to draw the diagram. Refer to lecture slides (or online sources) for details on class diagram. (40 points)
    - **Each team member MUST contribute at least ONE class diagram of the components he/she is responsible for. Put your name in the diagram document.**