Spring 2017 CS321 Section 01 Group project

Introduction

In this project, you are asked to participant in a 4-5 person team to develop a substantially-sized Java program. Your group build the program from the scratch. You begin with analysis phase, then proceed to design phase, followed by implementation, testing and deployment phase. In this project, you will have plenty of opportunities to practice knowledge, principles, guidelines and design patterns learned in this course to enhance the quality of your program. Of course, a good software has to be able to support all the necessary use cases required by their end users and all its necessary domain applications. In addition, from a program developer's perspective, one would like the program to possess the following quality: good modularity, which means the program is divided well into cohesive and well-separated modules, so that divisibility of team works can be easily achieved and the program is easy to understand; extensibility, which means it can be easily extended to cover more use case as domain applications progress; modifiability, which means every module of the program can be easily modified without affecting using codes or other modules. In particular, in this course, we will evaluate the quality of your program using the following **Rubrics Table One:**

Performance Element	5 - Excellent	4 – Very good	3 - Good	2 - Limited	1 - Inadequate
Specifications	Program runs & meets all specifications	Runs, gets correct answers, output displayed correctly, meets most other specifications	Runs, gets correct answers, output is not displayed correctly or other specifications not met	Runs, get some correct results, does not meet most specifications	Program does not run, runs but gets no results or mostly wrong results
Readability	Code is well organized and easy to follow	Most of the code is well organized & easy to read	Parts of the code are easy to read but the organization is not good	Code is readable if the reader knows what it is supposed to be doing	Code is poorly organized and very difficult to read
Documentation	Documentation is clearly written & explains what the program as a whole should do; comment blocks introduce each function	Documentation is brief but helpful, includes header information for functions	Documentation consists of embedded comments and some header information for functions	Little or no documentation other than obvious embedded comments	Little or no documentation
Software Architecture	Displays excellent information	Displays good information hiding and	Displays some information hiding and	Displays some information hiding or	Little or no structure

	hiding and modularity	modularity	modularity	modularity but not both	

In addition, for this project, you will be evaluated on whether you are able to function effectively on teams to accomplish a common goal. The following **Rubrics Table Two** will be used in evaluating your teamwork:

Performance Element	5	4	3	2	1
Division of Labor	All of the group members had assigned tasks according to their interests and abilities	All of the group members had assigned tasks to complete	Most of the group members had assigned tasks to complete	Some of the group members did not have assigned tasks to complete	A few group members were expected to do most of the work
Contributions	All group members made useful contributions to the project	Most of the group made useful contributions to the project	At least half of the group made useful contributions to the project	Several group members made useful contributions to the project	Most group members made no contribution to the project
Project Milestone	Project milestones were clearly defined and all were met	Project milestones were clearly defined and more than half were met	Most project milestones were defined and less than half were met	Some project milestones were defined and some were met	No project milestones were defined or met
Meetings and Communication	Regular meetings and communications are held with at least 75% attendance	Regular meetings and communication with less than 75% attendance	Frequent meetings and some communication	Occasional meetings and sparse communication	No scheduled meetings are held

What to do:

For this semester, your team will be given freedom to choose an interesting project to work on, subject to the instructor's approval. In order for the instructor to approve your choice, your program has to include all the following three modules: (1): a module for handling input/output, which can be flat file, serialized input/output, JDBC etc; (2) a business logic handling module; and (3) GUI: graphical user interface, which primarily handles interactions between different kinds of users and your program.

Your group should submit your proposed choice on Feb. 6th. The following choices will be approved: a Hotel Management System; an Airline Management System, a Stock Trading System, a Standalone Email System, an Asynchronous Online Messeger, A Reviewing, Rating and Recommending System for a certain collection of a certain type of merchandise (e.g., books).

Phases:

You should divide your project into two phases: (1) analysis, design phase and (2) implementation, testing and deployment phase.

At the end of Phase 1: you are expected to deliver the following: major use cases; class diagram for your Module One and Module Two; two sequence diagrams, and one state diagram; some rudimentary implementation. You should also write simple using (driver) classes to run your program and demonstrate at least a few of the use cases function correctly.

At the end of Phase 2: enhance your program so that it handles all the use cases. Also, you need to add the GUI module into it so that the entire program functions as a whole.

What to Turn in:

(1) At the end of each Phase, your group will be asked to present in front of the entire class.
(2) Starting from Feb. 6th, you need to have regular group meetings in and outside of classes. You need to keep minutes of all the group meetings. Each meeting minute should include who attends the meeting; what has been discussed and what has been resolved.
(3) A hard copy briefly describing your design, classes, diagrams, and supported use cases. This report is due when presenting your Phase 1. You will submit the report to the instructor in class.
(4) A final project report with self-evaluation of project quality, using the Rubrics Table One. So in the report, you need to convince people how well you have done regarding each of the performance elements and why you feel that way.
(5) A final team work report with self-evaluation of your team work quality, using the Rubrics Table Two. Hence, you need to submit evidences on how well your team has done regarding each of the performance elements. All your group meeting minutes should be part of the evidences.
(6) Hard copy of the two project reports mentioned above. The reports is due when presenting your Phase 2. . You will submit the report to the instructor in class.
(7) Everything in a single zipped file, submitted to Canvas, on or before April 24th, 2017.

Important dates:

(1) Phase 1 presentation date; March 8th. Each group will be given 8 minutes. Bring your own laptop, if possible. Phase 2 presentation date; April 20th and April 24th. Each group will be given 15 minutes.
(2) Final zip file due date: April 24th, 2017.

Grading:

(1) Presentation percentage: 5% for Phase 1 and 10 % for Phase 2. The evaluation will be primarily on the quality of the presentation. So you need to faithfully present what you have done and you have not done.

(2) Team work percentage: 15%, based on team work final report, using Rubrics Table Two.

(3) Quality of the project: 70%, using Rubrics Table One.