TCP1201 Objected-Oriented Programming and Data Structures Assignment

Trimester 1, Session 2023/2024 (Term 2310)
Faculty of Computing and Informatics
Multimedia University

Part 1 Submission Deadline: 7 Jan 2024 (Sunday), 11:59pm
Part 2 Submission Deadline: 18 Feb 2023 (Sunday), 11:59pm

A. General Information

1. This assignment contributes **40%** of the total course mark.
2. Part 1 contributes 8% while Part 2 contributes 32%.
3. Part 2 is an extension of Part 1.
4. Part 1 presentation is a video presentation. All members must take turns to present.
5. Part 2 presentation is a live presentation. All members must take turns to present.
6. ZERO mark for late submission.
7. STRICTLY NO COPYING from other students in other groups or from any other sources (Internet, books, etc.). ZERO mark to students who plagiarize AND to the students who share their code. For this assignment, plagiarism means the following:
    1. Turning in a work that, from the examiner's point of view, you do not sufficiently understand.
    2. Turning in someone else's work (whether partly or fully) as your own.
    3. Any means of cheating.

B. Grouping

1. Form a group of maximum 4 students. All students in a group must be from the SAME lecture section.
2. Register your group with your lab tutor.
3. Each group member may be given different marks based on their contribution and performance.

C. Tasks - Course Management System

1. Your task is to develop an object-oriented JavaFX (or Spring) program for managing a 1-year certificate program.
2. The certificate program has 30 credits and 8 courses (subjects). The courses are as follows:

Course Credit	Course Code	Pre-requisite
3 Credits	CS113 CS123 CS133 CS143	Nil Nil Nil Nil
4 Credits	CS214 CS224 CS234	CS113 CS123 Nil
6 Credits	CS316	CS133, CS214, completed at least 15 credits

3. A student can take a maximum of 12 credits and a minimum of 3 credits per trimester, and must follow the pre-requisite.
4. The system has 3 types of users: student, lecturer, admin. Refer to the mark sheet below for the features of each type of user.

D. Submission Format

Submit the works to the GitHub under your MMU GitHub Education account. Make the repo **private** so that non-members cannot access your code. Add your lab tutor as a **collaborator**.

1. Make sure the submitted codes **can be compiled and run**. Zero mark will be given for late submission or uncompilable program.
2. Submit the following items to your group's GitHub repo. One group makes one submission. Your repo
    a. **Part1** folder – contains your source code and any data files (*.java, etc.) for Part 1
    b. **Part1.md** – Fill in the required info.
    c. Part2 folder – contains your source code and any data files (*.java, etc.) for Part 2
    d. **Part2.md** – Fill in the required info.
3. Submit your group's GitHub link into the Teams Assignment.

Part 1 Marking Rubric

Item	Mark
1 Part 1 Features (6 marks) 1) Admin can create students and lecturers. [1m] 2) Admin can create courses and assign courses courses to lecturers. [1m] 3) Users can login and the system can recognize their user type. [1m] 4) Students can self-register for courses in new trimesters. [1m] 5) Lecturers can view all the students in their courses. [1m] 6) Admin can view all the students and the lecturers for courses. [1m]	/6
2 Video Presentation (2 marks) Submitted a video presentation. All members take turns to present.	/2
Part 1 Total (8 marks) **Zero mark for no presentation, late submission, or plagiarism.**	/8

Part 2 Marking Rubric

Item	Mark
3 Part 2 Features (9 marks) 1) Persistent storage – Save student, lecturer, course data to files and load from files [2m] 2) Maximum and minimum credits per trimester. [2m] 3) Pre-requisite for CS214 & CS224. [1m] 4) Pre-requisite for CS316. [2m] 5) Students can view their past subjects, current subjects, and future subjects. [2m]	/9
4 GUI Quality & User Friendliness (4 marks] Intuitive input and output with proper error handling. Use of adequate controls rather than asking user to type. 4 – Above expectation 3 – Meet expectation 2 – Below expectation **1** – Poor	/4
5 Java Documentation (4 marks) Correct Java documentation for a class that has methods with parameters and return value. 1) Class description [1m] 2) Constructor and method description [1m] 3) Parameter description [1m] **4)** Return value description [1m]	/4
6 Class Design (6 marks) 1) Inheritance [3m] – You must create superclass(es) and subclass(es).	/6

3 – Good 2 – Average **1** – Poor 2) Composition (or association/ aggregation) [3m] – You must create a class and make it a field of another class. 3 – Good 2 – Average **1** – Poor	
7 Use Appropriate Data Structures (5 marks) 1) List, Queue, or Stack [1m] 2) Set [2m] **3)** Map [2m]	/5
8 Presentation and Q&A (4 marks) Demo for program, Java Documentation, and explanation on class design, and data structures used. All members take turns to present. 4 – Above expectation 3 – Meet expectation 2 – Below expectation **1** – Poor	/4
9 Bonus (2 marks) Database, Android, Spring GUI, or MVC	/2
Part 2 Total (32 marks) **Zero mark for no presentation, late submission, or plagiarism.**	/32
Total (Part 1 + Part 2)	/40