RMIT University

COSC Programming 1 - Semester 2022B

GROUP ASSIGNMENT (30%)

# Instructions

Students are asked to work in groups for this assignment and are encouraged to seek help from classmates and teaching staff. Each group needs to create a new GitHub repo and collaborate on that central system. All source code and resources must be present on GitHub too. Moreover, all commit messages must be meaningful and consistent.

# Assessment details

This assignment provides a chance for students to practice and apply all concepts learned so far. It is also an opportunity to get familiar with the analysis, design, and development of a software application with a practical project idea to get ready for life and work. In this assignment, you are asked to implement a text-based program using Java language and OOP techniques. There are 6 main parts:

* OOP design and implementation: you need to design and implement a class hierarchy to make your program flexible and easy to maintain.
* Problem-solving tasks: you need to apply control statements, algorithms, data structures, etc. to solve particular tasks.
* For simplicity, all interaction with the application will be done via a simple text interface (no GUI is required). However, it will provide all basic functionalities of a practical application (which may be further developed after completion).
* Report: you must write a report from 5-8 pages to describe the project (The report template is provided at the end of this document)
* Class diagram: you must include the class diagram for your system in your submission (in the report or an independent file)
* Video demonstration: you need to make a short video explaining how you analyze, design, and implement the system and a working demo of your system.

# Problem details

APP FOR STORE ORDER MANAGEMENT SYSTEM

Assume that you are involved in a technology store that wishes to develop an Order Management System, which is the key point of their business growth plan. This may reduce the paper and printing and distribution work which saves a lot of time.

The main objective of the Store Order Management System is to allow customers order products. The system can also manage the store products and registered members, and keep track of all the order information, including customers and their list of bought items. All these tasks can be executed only by the system admin.

The product can be added to or removed from the system only by the admin. Each product must have a unique id. The name of the product should also be unique and cannot be modified after initialization. The price of the product is of currency VND and can be modified by the system admin. A product should belong to only one category. A category is used to classify the products, for example a laptop Dell is of category “Laptop”.

Customers can list all the available products of the store and can also get all the details about the product so that they can make the right choice before making any purchase. Customer can place the order after the registration with his unique username and password.

Member registrations must capture all the necessary information from the customer, including the personal info (username, password, full name, phone number). The store offers 3 types of memberships: Silver, Gold and Platinum. The total spending of a customer needs to be greater than 5 millions VND for an upgrade to Silver membership, 10 millions VND for Gold and 25 millions VND for Platinum. Silver, gold and platinum members receive a discount of 5%, 10% and 15%, respectively, for all the products purchased.

Order once placed can pass through many phases till it finally reaches the customer. But to keep it simple, in the scope of this application, an order is considered “delivered” once the customer paid for the order bill. You do not need to implement the process of customer payment; the order status will be changed to “PAID” manually by system admin. At any moment, the customer can check the status of the order. At the end of a day, the system admin can calculate the store total revenue and check the information of all the orders executed on that day.

# PROCESS AND GUIDE

## A. Class Diagram:

Identify classes, attributes, methods, and relationships between classes. Sketch a class diagram for the application.

## B. Basic Features:

The application should have the following basic features:

1. A customer can register to become a member (information is recorded).

2. A customer can login with the registered username and password, and can view all of their information.

3. A customer can list all products and view the product details.

4. A customer can search for all available products for a particular category

5. A customer can sort all products by product price

6. A member can create a new order

7. A member can get information of an Order by using Order ID

8. An admin can login with a predefined username and password, and can view information of all products, orders and members.

9. An admin can add a new product to the Store

10. An admin can update price for a particular product

11. An admin can get information of all Orders by Customer ID

12. An admin can change the status of the Order.

13. All data must be saved into **files** before the program is ended, and loaded into the program when it is started.

Important Note:

* The program should validate user input.
* All attributes should be private for data encapsulation.
* Product ID, Order ID and Customer ID should be generated by system, unique and with the type of string.

## C. Welcome Screen

When completing your application, it should have a welcome screen with example content structure as below (you are free to adjust its format).

COSC2081 GROUP ASSIGNMENT

STORE ORDER MANAGEMENT SYSTEM

Instructor: Mr. Minh Vu

Group: Group Name

sXXXXXXX, Student Name

sXXXXXXX, Student Name

sXXXXXXX, Student Name

# SUBMISSION

* No external libraries can be used.
* Your work will be tested with Java 16 JVM.
* The entry point of your program (i.e. the main() method) must be in a file named Main.java. If I cannot start from Main, I will consider your program is not able to run.
* There is a **README** file on the root directory of your submission. It needs to contain the GitHub repo URL of your project, and the link to your video demonstration (your video should be uploaded to YouTube - the uploaded time is used to check for late submission).
* Don't put the git folder into your submission.

Submission files:

* + Source code (zipped folder) with a README file including your GitHub repo link and demonstration video shared link.
  + Report with class diagram and explanation.
  + All of submission file names should be have a prefix with your group name, for example <group\_name>\_src.zip, <group\_name>\_report.pdf, etc.
* Contribution information:
  + If all members work well together with equivalently contributed works, then the contribution should be equally divided (e.g. 25% for each member if this is group of 4, or 33.3% for group of 3, etc..). Otherwise, please discuss within your group to record the actual contributions of all members (e.g. a slightly higher percentage for people with more contribution and vice versa).
  + Note: the contribution should be considered in overall in terms of **initiative** (help managing the project, contribute excellent ideas), **amount of work, quality of work, and support for other members**, etc.

# Template for report

## 1. Introduction

Summary of this project. What is it, who does what, general scope and objective of this project and this document.

## 2. Project Description

Describe the technical aspects of the project. It's important for you guys to demonstrate what you have learned from the specifications. Mention anything from the specifications that is important, useful, and necessary for the implementation of the software.

## 3. Implementation Details

All of details for implementation, illustrations, explanations, etc.

## 4. Project Planning Report

|  |  |  |
| --- | --- | --- |
| All Team Members | Role and Task Given | Individual Contribution (%) |
| 1. |  |  |
| 2. |  |  |
| 3. |  |  |
| 4. |  |  |

Describe how the group work have been organized, any issues, timeline of project etc.

## 5. Conclusion

Any drawback and Future work