ASSIGNMENT

INTRODUCTION

This is a group assignment. Students are to work in teams of maximum 2-3 members to create an object-oriented program for the given scenario.

ASSIGNMENT SPECIFICATION

Learning Outcomes Being Assessed

- Demonstrate an object-oriented program using appropriate programming fundamentals with regards to arrays, methods and exception handling. (P, P4)

- Illustrate the concepts of encapsulation, inheritance and polymorphism to solve a given programming problem. (CTPS, C4)

Submission Deadline

Documentation & System: Friday, 17 August 2018 (Week 12) by 4.00p.m.
Presentation : Week 13

With the exception of Extenuating Mitigating Circumstances (EMC) reasons, penalty for late submission of coursework shall be imposed after submission deadline / extended submission deadline:

- Late submission within 1 - 3 days: total marks to be deducted is 10 marks.
- Late submission within 4 - 7 days: total marks to be deducted is 20 marks.
- Late submission after 7 days: reject coursework and zero mark shall be awarded.

Question

An automotive service centre needs an application program to keep track of motor vehicles service transactions. In addition, this program should also generate selected listings and reports.

Description

First Choice Car Services centre offering wide array of services such as repair, repaint, wax & polish, and maintenance service. In order to promote its business, it also provides free car inspection on national day.

Appointment was normally required before the services. All customers are required to make appointment though the customer care regarding the time, day and preferred services.

Each services has a transaction code, customer id, customer name (first name and last name), date, car registration number, services description, technician id and technician name (first name and last name). As for free inspection, the information to be recorded consists inspection code, customer name (first name and last name), inspection date (must match with notional day), inspection description, technician name (first name and last name).

A customer will entitled to enjoys additional discount if he/she taken the *wax & polish* service existed specific number of time as shown in the table below:

No. of service	Discount Rate
5 - 7	10%
8 - 9	30%
Every 10	Free 1 service

The manager of the *First Choice Car Services centre* should be able to check on each technician details on the type of services which that they have handled. Manager able to check on all the transactions and activity carried out in the parlour by viewing all the transactions records, appointments records, and trail services records.

You are required to design and create an object oriented program for *First Choice Car Services centre* to maintain all the necessary information and the following requirements **(minimum requirements need to be fulfilled):**

- Registration of customers, services and technician.
- System should record and store each transactions.
- Calculate and display the total amount payable by customer.
- Able to check on the discount privileges.
- Must display the available services and available time slot for customer help desk.
- Display summary reports e.g.: customer transactions, services report, appointment records and etc.
- Able to check the transaction history based on the car registration number.
- Able to check on the each technician details on records on the tasks which that they have handled.

Deliverables

Your programming assignment reports are to be typed, double spaced, with normal one-inch margins. Your completed report, along with any appendices, should be bind together. The sections of the report designated as required MUST be included in report.

(a) A cover page (use the template provided). Indicate the percentage contribution of each member.
(b) UML class diagram that depicts the entity classes and their relationships.
(c) Sample reports/summary
(d) User manual – required to do a short video demo/screenshot report

Softcopy of source code

- Include ALL your source code files and all pre-compiled classes.
- Note: Source code listing must include line number and indicate the author of each class.

Form of submission

- Each group creates a folder named using the format: TutorialGroup-StudentFullNamesWithAlphabeticalOrder (e.g., DCM2 (BB1) - LimGary - NgKokSeong - NgYinXin), and to be attached together with the report (check report requirement), video demo (optional) and java application program.

- Class representative collects all group folders and burns into a CD/DVD.

  NOTE: Created folder must be zipped and shall be submitted via Google Drive.

IMPORTANT: Work on the entity classes should be equally distributed between the team members. Likewise for the client program and report/listing.

NOTE: Submitting the assignment means you have agreed that your work is original and comply with the rules and regulations (refer to Academic Impropriety)

Paper Size / Format
A4 (Use only one side of the paper)

Estimated Time Required
At least 10 hours per team member.

Academic Impropriety
You may only work with the students in your team to produce your deliverables for this assignment. This covers cheating, attempts to cheat, plagiarism, collusion and any other attempts to gain an unfair advantage in assessment. **The work that you submit must conform to those regulations.**

Assessment
This assignment contributes 50 marks to your coursework. The allocation of marks is shown below. Refer to the ***Assignment Feedback Form*** for the detail assessment criteria.

Part A	**Marks Allotted**
Programming Style	5
Client Program	12
Exception Handling	8
Part B	
Class Encapsulation and Cohesion	12
Class Design	13
Total marks	**50**

Marks for a team member = Total marks x % contribution

NOTE: Failure to adhere to the required requirements for submission and report presentation may result in being downgraded a grade.

You are required to submit BOTH documentation, well-functional and complete application in order to pass the course.