TCP1201 Objected-Oriented Programming and Data Structures
Assignment 1

Trimester 1, Session 2016/2017
Faculty of Computing and Informatics
Multimedia University

DUE DATE: 8 Aug 2016, 12:00pm (noon)

Outline

This assignment contributes 10% of total subject mark. The assignment consists of only one question. Every student submits one assignment individually. Interview will be conducted.

You are strongly advised to submit the assignment in time even though it is incomplete. For late submission, 2 marks will be deducted for each day of delay.

No extension of dateline will be entertained so that the lecturer would have sufficient time to assess and release the mark before the final exam. Exact interview date and time will be scheduled after the due date.

Make sure your program code can be compiled under GCC 5.3 or CodeBlocks 16.01.

Problem Statement

You have been assigned to set up a **patient management system** for a clinic. There are two types of patient; namely **panel patient** (paid by company) and **non-panel patient** (self-paid). The system should provide a **system interface** for the clinic dispensary staff to update and retrieve the patients record and for the doctor to analyze the business of the clinic. The specification for the patients' record, daily consultation record and system interface are as follows:

1) **Patients record**
   a) The patients record stores all the records of each patient. Each patient's record should contain:
      i. **Basic information** such as name, NRIC, age, address, tel no. etc.
      ii. **Visit record of the patient** for each visit to the clinic, including the date, diagnosis, prescription, and bill amount of the consultation.
      iii. For a **panel-patient**, additional information such as the name of the employer and the maximum amount sponsored should be recorded.

2) **Daily Consultation record**
   a) The daily consultation record stores some basic information for each consultation so that it will be easy for the dispensary staff / doctor to keep track of the total consultation collection for each day. Each consultation record should contain at least:
      i. the **date of consultation**,
      ii. the **patient's name**, and
      iii. the **consultation fee**.

Note: Both the patient and daily consultation records should be stored in two separate **text files**. The data fields stated above is the minimum info that the system should keep track of. You may include any additional fields that you deem appropriate.

3) System Interface:

a) To allow the dispensary staff to record details for each consultation based on the following guideline and flow:

i. When a patient comes into the clinic,
- if the patient is a not new patient, **retrieve the patient's record**, else
- if the patient is a new patient, **create a new patient record** with all the patient's detail.

ii. When the patient completed the consultation with the doctor,
- **add a new visit record** (date, diagnosis, prescription, and bill amount) **to the patient's data record**,
- **print the receipt for the patient** (for a panel patient, the amount due should take into consideration the max sponsored amount by the employer), and
- **add a new record to the daily consulatation record**.

b) To allow the dispensary staff / doctor to **list out the consultation record** and **sum up the total consultation fees** collected for a specific day. The list of consultation details should be **sorted by the patient's name**.

Submission Format

1. A zip file name "*TC20X_StudentID_StudentName*.zip". TC20*X* is your lab section. *StudentID* is your student ID.*StudentName* is your name. The zip should contain all your **UML class diagrams** (in pdf format), your **source code files** (*.hpp and *.cpp). Do not attach any .exe file as some mail servers such as gmail would reject it.
2. Submit the *TC20X_StudentID_StudentName*.zip file to the assignment submission system in MMLS.

Feature Sheet & Evaluation Criteria

Criteria	Item
1. Program Design (4 marks)	1.1. UML class diagrams [0.5m]
	1.2. Style (indentation, self-documentation, identifier) & Modularity (small size functions/methods) [0.5m]
	1.3. Separation of interface and implementation (.hpp and .cpp) [1m]
	1.4. Inheritance [1m]
	1.5. Composition [0.5m]
	1.6. Polymorphism [0.5m]
2. Program execution (6 marks. 0 if unable to compile or run)	2.1. User friendliness (input & output sufficiently self-explain) [1m]
	2.2. Correct program features and output (all attributes must be shown during listing) • Add a new patient record [0.5m] • Retrieve and display the record of an existing patient [0.5m] • Add a new consultation record to the record of an existing patient [0.5m] • Print the receipt for the patient [0.5m] • Add a new daily consultation record [0.5m] • List out the consultation record for a specific day, with correct total consultation fees and sorted by patient's name. [1.5m] • Patient and daily consultation records are stored in text files [1m]
3. Bonus [2m]	**THINK!** What are the additional features that can make the clinic management system more complete? Can the doctor analyze the daily or monthly business of the clinic?
4. Interview (0 mark for the assignment if fail to be present for interview)	3.1. Fluency in using the program
	3.2. Ability to explain code
5. Plagiarism, late submission, or multiple submission	0 mark for the whole assignment

Note: Total coursework marks will be capped at 60 marks.