UNIVERSITYOF HERTFORDSHIRE
School of Engineering and Computer Science

ASSIGNMENT BRIEF

Students, you should delete this section before submitting your work.

This Assignment assesses the following module Learning Outcomes (Take these from the module DMD):

a) Knowledge and understanding.

1. *The fundamental concepts underlying procedural programming.*
2. *The facilities offered by a modern object-oriented programming language.*
3. *The features of a typical object-oriented programming language, particularly the details of its inheritance.*

b) Skills and attributes.

1. *Write simple procedural programs as solutions to clearly specified problems.*
2. *Write classes and use existing library classes in object-oriented programming solutions to clearly specified problems.*
3. *Use object-oriented tools, techniques, notations and methods in the design, implementation, and testing of computer-based solutions to problems.*

Assignment Brief:

Implement a system according to the following description

The Extra Tuition Centre (ETC) needs software for managing lesson bookings made by the students. The centre offers different group tuition lessons on both Saturday and Sunday. The tuition lesson subjects could be English, Math, Verbal Reasoning, Non-verbal Reasoning, etc. Each lesson can accommodate 5 students at most.

For either day (Saturday or Sunday), there are 4 tuition lessons per day: 1 in the morning, 1 in the afternoon, 2 in the evening. The price of each lesson is different. The lesson price for the same subject will remain the same even if they run at a different time.

A student who wants to book a lesson on a day needs to select the specific lesson time (i.e., morning, afternoon, early evening, late evening). Students are allowed to change the date/time of the booked lessons, provided there are still spaces available for the newly selected date/time in the same subject. A student can book as many lessons as they want so long as there is no time conflict.

After each tuition lesson, students are able to write a review of the lesson they have attended and provide a numerical rating of the lesson ranging from 1 to 5 (1: Very dissatisfied, 2: Dissatisfied, 3: Ok, 4: Satisfied, 5: Very Satisfied). The rating information will be recorded in the system.

After four weeks (four weekends), the user of the system must print:

- a report containing the number of students per tuition lesson, along with the average rating;
- a report containing the tuition subject which has generated the highest income.

In your final deliverable, provide data covering at least 4 different types of tuition subject lessons, 15 students, and 20 reviews (with rating), which can then be displayed in the output reports. You need to design at least 8 weekends of teaching timetable by yourself.

Note: you do not need any kind of external database for this program. The final program should be self-contained. The reports can be printed to System.out, or output to a suitable GUI interface.

Your tasks:

1. Describe the main classes in the system and their associations. Include the attributes and key methods. Show the relationships between classes in a diagram.
2. Implement the system.
3. Write a short report (up to 6 pages should be sufficient) explaining your program.