Lab Exercise (Chapter 3 : Part 2)

Exercise 1:

Given the class diagram below, create the ***Student*** class with the attributes, the constructors, setters & getters and override the toString method to print:

Student with name ***xxx*** studies course ***xxx*** in semester ***xxx***

Students who are in semester 4 to 6 are eligible to get credit exemption. Create a method 'checkEligibility()' to identify if a student is eligible.

Student
-name : String -semester : int -course : String
Create all the appropriate constructors, setters and getters

In the main program,

1. Create two student objects as below:
   Student 1: Alex, semester 5, course BCS
   Student 2: Mindy, semester 2, course BIT
2. Update the name of student 1 to "Johnson"
3. Check if both of the students are eligible to get credit exemption, print as per sample output below:

   Student with name ***xxx*** studies course ***xxx*** in semester ***xxx*** is eligible/not eligible to get credit exemption.

Exercise 2:

Description of the Problem

A class called TV is required by a programmer who is writing software for a retail outlet. An object of the class TV will consist of a stock number (as String), the make of the TV (as String), the screen type (as character, either 'W' or 'R', meaning "widescreen" or "regular") and the price of the TV (as double).

The first three of these will need to be set only at the time an object is created. The price will also be set at the time of creation, but may need to be changed during the TV's lifetime.

It will be necessary to have a means of retrieve the values of all the above data items. A method should also be provided which accepts the rate of tax (a double) as input, and returns the amount of tax to be paid.

This is calculated as follows:

$$tax = price \times \frac{rate\ of\ tax}{100}$$

i) Draw the UML class diagram for the *TV* class

ii) Write the code of the *TV* class in Java

iii) Write a Java statement to create a new *TV* object, **tv1**, with the following details:

- stock number: *S101*
- make: *Elba*
- type of screen: *Regular*
- price: 1400

iv) Write Java statements to read the price from user and change the price of the object you've created in question (ii) above.