Object Oriented Programing (CL-217)

Lab 03

Deadline: Saturday, February 19, 2022 (02:00 PM After noon) (Submit on Google Classroom)

Points: 50

Instructions:

1. Solve each problem in separate file, Name the code file with problem no (Task_01, Task_02,.)
2. Copy these files (Task_01, Task_02,.) in a folder and name the folder like that K21XXXX. where XXXX is your 4-digit Student Id.
3. Now compress that folder and submit on google-classroom.
4. Do not attach .exe file, otherwise it will show a threat or virus and not allow me to download.
5. Make sure you must Press the Turn-In button after uploading the solution folder. Otherwise, it will not be submitted.

Task_01:

As you have already studied the basic concepts of object-oriented programming in class lecture. In this task, you need to identify and list the 5 different objects you have found around you. YOU NEED TO CREATE A SOLUTION FILE(Task_01.cpp) and in comment list the object, their attributes and their behaviors like that

SNO	CLASS	OBJECT	ATTRIBUTES	BEHAVIOURS
01	HUMAN	Student, Teacher	Name, Height, Age, Email	CanTeach(), CanStudy(), CanAccessExam(), PrintDetails()

Task_02:

In Task02, you need to implement these all five (5) examples codes using classes.
Note: Each object must have atlest four(4) attributes and behaviours.

Task_03:

In task 3, you need to implement a class named as PintDateTime that contains date, month, year, hours, minute and seconds. Take these attributes as an input from the user and print the date in different formats; 12HourFormat(), 24HourFormat() and print the HolidayInMonth(int MonthNumber)

Sample OutPut:

```
12HourFormat()     // DD-MM-YYYY AM/ PM
24HourFormat()     // DD_MM_YYYY HH:MM:SS
HolidayInMonth(int MonthNumber)    // Consider Saturday and Sunday as Holiday
```

Task_04:

We are prototyping a robot that refills glasses during dinner. Every glass holds 200 milliliters. During dinner, people either drink water or juice, and as soon as there is less than 100 ml left in the glass, the robot refills it back to 200 ml. Create a class Glass with one public int field LiquidLevel and methods public Drink(int milliliters) that takes the amount of liquid that a person drank and public Refill() that refills the glass to be 200 ml full. Both methods should not return any value. Initially set LiquidLevel to 200. In the Main method create an object of class Glass and read commands from the screen until the user terminates the program (see next). Don't forget to refill the glass when needed!

Task_05:

In Task_05, Suppose you have a claass named as Student that have multiple student objects or atleast 10 objects. Each teacher has its ID, Name, EmailAddress, CourseCode(A student may enroll in multiples course) and its CGPA. You need to write the setter and getter functions for each attribute. While taking input implement the following validations

1. Id must be a 4-digit number.
2. Name must be greater than 3 alphabets. Also not contains any number in it.
3. Email address length must be atleast 6 character and contains **____@___.__**
4. CourseCode must be combination of Alpha Numeric number of 6 characters

While taking the input for multiple CourseCode for each student. Confirm that if student CGPA isgreater than 3, he/she can take 6 courses.

If his GPA is greater than 2, he/she can take 5 courses. If his GPA is less than 2, he/she can take only 2 courses.

Enjoy Coding