

# ASSIGNMENT #02

## Classes and Objects

### Object Oriented Programming – Lab

**Due Date: 15<sup>th</sup> Jun, 2021**

Total Marks: 50

Submit the assignment on [Google Classroom and printed form](#). Do not email me assignments after due date. It will not be accepted in any case. **Students are required to submit actual content written in Pdf. Hand written/ Scanned assignments will not be accepted.**

**Note:** Name of the file should start with your Serial Number followed by Roll number, Name and at the end assignment number (**10\_p190001\_Name\_Assign#01**)

**i.e. 10\_p190001\_Ali\_Assign#01**

**Note:** For user understanding purposes you should write comment with each line of code.

**Note:** Program copied from someone or plagiarized will not be considered for grading. Zero percent tolerance with plagiarism.

**Q No.1:** Define a class TEST in C++ with following description:

#### **Private Members**

TestCode of type integer

Description of type string

NoCandidate of type integer

CenterReqd (number of centers required) of type integer

A member function CALCNTR() to calculate and return the number of centers as (NoCandidates/100+1)

#### **Public Members**

A function SCHEDULE() to allow user to enter values for TestCode, Description, NoCandidate & call function CALCNTR() to calculate the number of Centres.

A function DISPTST() to allow user to view the content of all the data members.

**Q No.2:** Define a class in C++ with following description:

**Private Members**

A data member Flight number of type integer

A data member Destination of type string

A data member Distance of type float

A data member Fuel of type float

A member function CALFUEL() to calculate the value of Fuel as per the following criteria

Distance	Fuel
<=1000	500
more than 1000 and <=2000	1100
more than 2000	2200

**Public Members**

A function FEEDINFO() to allow user to enter values for Flight Number, Destination, Distance & call function CALFUEL() to calculate the quantity of Fuel

A function SHOWINFO() to allow user to view the content of all the data members

**Q No.3:** Define a class BOOK with the following specifications :

**Private members** of the class BOOK are

BOOK NO            integer type

BOOKTITLE        20 characters

PRICE              float (price per copy)

TOTAL\_COST()     A function to calculate the total cost for N number of copies where N is passed to the function as argument.

**Public members** of the class BOOK are

INPUT()            function to read BOOK\_NO. BOOKTITLE, PRICE

PURCHASE()        function to ask the user to input the number of copies to be purchased. It invokes TOTAL\_COST() and prints the total cost to be paid by the user.

**Note :** You are also required to give detailed function definitions.

**Q No.4 :** Define a class REPORT with the following specification:

**Private members :**

adno                      4 digit admission number  
name                      20 characters  
marks                      an array of 5 floating point values  
average                      average marks obtained

**GETAVG()**                      a function to compute the average obtained in five subject

**Public members:**

**READINFO()**                      function to accept values for adno, name, marks. Invoke the function **GETAVG()**

**DISPLAYINFO()**                      function to display all data members of report on the screen.  
You should give function definitions.

**Q No.5 :** Write the definition for a class called **time** that has hours and minutes as integer. The class has the following member functions:

**void settime(int, int)** to set the specified value in object

**void showtime()** to display time object

**time sum(time)** to sum two time object & return time

1. Write the definitions for each of the above member functions.
2. Write main function to create three-time objects. Set the value in two objects and call sum() to calculate sum and assign it in third object. Display all time objects.