Higher Diploma in Information Technology



Introduction to Programming (C++)

Year 1 Semester 1 - 2024

Tutorial 11 – Object Oriented Programming Concepts in C++

Question 01

Write a program to provide a simple inventory system for a burger outlet.

a) Include the following private data members (attributes) in your **Meal class.**

Attribute	Data type
MealNo	integer
Description	char []
NoofMealsAvailable	integer
Price	double

- b) Implement a constructor which will accept the MealNo, Description, NoofMealsAvailable and price as parameters.
- c) Implement a member function (method) called makeorder(), which will accept the MealNo and Quantity as parameters. It should check the availability of the meals and print a proper message as follows:

```
If the NoofMealsAvailable is less than the Quantity then print

"Sorry not enough available. Please wait! "

Else

Reduce the no of meals ordered from the NoofMealsAvailable

Print "Order Placed! "

Print total price (price * Quantity)

Also check,

If NoofMealsAvailable is zero then

Print "Out of Stock. Cannot Order! "
```

d) Implement a method called **print()** to print the details of a meal.

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- e) Write a main program to do the followings.
 - Create 3 Objects to store the following details:

Attribute	meal_1	meal_2	meal_3
MealNo	10	12	13
Description	Chicken Burger	Fish Burger	Vegi Burger
NoofMealsAvailable	5	10	0
Price	250.00	200.00	180.00

• Place the following orders by using **makeorder ()** method.

Attribute	meal_1	meal_2	meal_3
Quantity	3	5	2

Print the details of all the meals using print () method after making the orders.

```
-----Meal No 01-----
Order Placed!
The Total Price is : 750
The Meal No :10
Description :Chicken Burger
The Noof Meals Available :2
The Price of the Meal : 250
           -----Meal No 02-----
Order Placed!
The Total Price is : 1000
The Meal No :12
Description :Fish Burger
The Noof Meals Available :5
The Price of the Meal : 200
-----Meal No 03-----
Sorry not enough available. Please wait!
The Meal No :13
Description :Vegi Burger
The Noof Meals Available :0
The Price of the Meal : 180
```

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Question 02

Write a program to provide details of employees.

a) Include the following private data members (attributes) in your **Employee** class.

Attribute	Data type
EmpID	integer
Empname	char array
YearJoined	integer
Status	integer (0 - Temporary, 1 - Permeant)
BasicSalary	float

- b) Implement the constructor which will accept EmpID, Name, YearJoined, Status and BasicSalary as arguments.
- c) Implement a method called **changeStatus()** to change the temporary employees to permanent. Method should not allow to change a permanent employee to temporary. Status should be passed as a parameter and the method should return true or false.
- d) Company gives one-month basic salary as a bonus for the employees who have more than three years working experience in the company. Write a method called **calculateBonus()** to calculate and return the bonus amount.

Working experience is calculated as follows:

e) Write a method called **printDetails()** to print all the details of the employee as shown below. Status should be printed as "Permanent" or "Temporary"

Name:
EmpID:
Year Joined :
Status:
Basic Salary:
Bonus Amount:
Total:

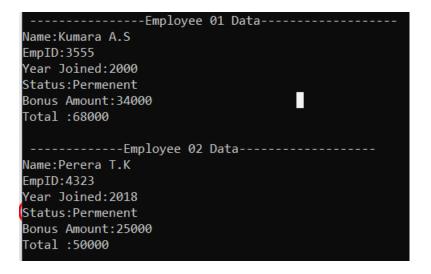
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f) Write a main program to do the followings.

• Create 2 employee objects called Emp_1 and Emp_2 to store the following details:

Attribute	Emp_1	Emp_2
EmpID	3555	4323
Empname	Kumara A.S	Perera T.K
YearJoined	2000	2012
Status	Permanent	Temporary
BasicSalary	34000.00	25000.00

- Change the status of Perera T.K. to permanent.
- Calculate the bonus of the two employees and print the details.



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