### Assignment - 31 A Job Ready Bootcamp in C++, DSA and IOT MySirG

#### new and delete operator, Inheritance

- Define a class Person with instance members name and age. Also define member functions setName(), setAge(), getName(), getAge(). Now define class Employee by inheriting Person class. In the Employee class define empid and salary as instance members. Also define setEmpid, setSalary, getEmpid, getSalary.
- 2. Write a C++ program to add two numbers using single inheritance. Accept these two numbers from the user in base class and display the sum of these two numbers in derived class.
- 3. Write a C++ program to calculate the percentage of a student using multi-level inheritance. Accept the marks of three subjects in base class. A class will be derived from the above mentioned class which includes a function to find the total marks obtained and another class derived from this class which calculates and displays the percentage of students.
- 4. Write a C++ program to design a base class Person (name, address, phone\_no). Derive a class Employee (eno, ename) from Person. Derive a class Manager (designation, department name, basic-salary) from Employee. Write a menu driven program to:
  - a. Accept all details of 'n' managers.
  - b. Display manager having highest salary

#### Output -

```
How Many Managers You Want to Enter? : 2
Enter Details of Manager
Enter Employee No. : 101
Enter Name : Surendra
Enter Address : Pune
Enter Phone No.: 02045777
Enter Designation : Manager
Enter Department Name : Production
Enter Basic Salary: 75000
Enter Details of Manager
Enter Employee No. : 202
Enter Name : Prashant
Enter Address : Mumbai
Enter Phone No.: 02232777
Enter Designation : Manager
Enter Department Name : Animation
Enter Basic Salary: 85000
Manager with Highest Salary is : 85000
And, Manager Name is : Prashant
```

5. Write a C++ program to define a base class Item (item-no, name, price). Derive a class Discounted-Item (discount-percent). A customer purchases

'n' items. Display the item-wise bill and total amount using appropriate format.

### Output -

```
How many items you want to enter? : 2
Enter Item Name : Shirt
Enter Item No.: 1002
Enter Item Price : 500
Enter Discount Percent: 20
Enter Item Name : Jeans
Enter Item No.: 2002
Enter Item Price: 700
Enter Discount Percent : 20
Item Name : Shirt
Item No. : 1002
Item Price : 500
Discount Percent: 20
Discounted Price: 400
Item Name : Jeans
Item No. : 2002
Item Price : 700
Discount Percent: 20
Discounted Price: 560
Total Price : 1200
Total Discount: 240
```

- 6. Write a C++ program to demonstrate how a common friend function can be used to exchange the private values of two classes. (Use call by reference method).
- 7. Write class declarations and member function definitions for a C++ base class to represent an Employee (emp-code, name).

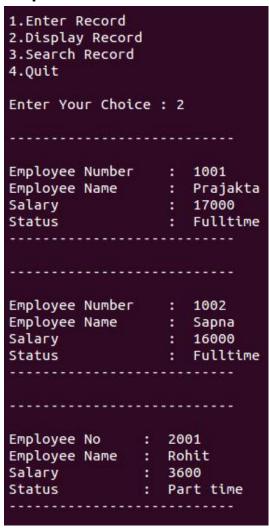
Derive two classes as Fulltime (daily rate, number of days, salary) and Parttime (number of working hours, hourly rate, salary).

Write a menu driven program to:

- 1. Accept the details of 'n' employees.
- 2. Display the details of 'n' employees.

3. Search a given Employee by emp-code.

# Output -



8 - In a bank, different customers have savings account. Some customers may have taken a loan from the bank. So bank always maintain information about bank depositors and borrowers.

Design a Base class Customer (name, phone-number). Derive a class Depositor(accno, balance) from Customer.

Again, derive a class Borrower (loan-no, loan-amt) from Depositor.

Write necessary member functions to read and display the details of 'n' customers.

# Output -

Enter No. of Customer De	tai	ls You Want	Details of Customer		
Enter Customer Name	:	Prajakta			
Enter Customer Phone No.	:	35146	Customer Name Customer Phone No.		
Enter Customer A/c No	:	123	Customer A/c No	:	
Enter Balance	:	50000			
Enter Loan No	:	321	Loan No Loan Amount		
Enter Loan Amount	:	10000			
			Details of Customer		
Enter Customer Name	:	Sapna			
Enter Customer Phone No.	:	26479	Customer Name		
Enter Customer A/c No	:	456	Customer Phone No. Customer A/c No	:	456
Enter Balance	:	60000	Balance	:	60000
Enter Loan No	:	654	Loan No		
Enter Loan Amount	:	12000	Loan Amount	:	12000

9. Write a C++ program to implement the following class hierarchy:

Student: id, name

StudentExam (derived from Student): Marks of 6 subjects StudentResult (derived from StudentExam): percentage

Define appropriate functions to accept and display details.

Create 'n' objects of the StudentResult class and display the marklist.

# Output -

10. Consider two base classes worker(int code, char name, float salary), officer(float DA, HRA)

class manger(float TA(is 10% of salary), gross salary) is derived from both base classes.

Write necessary member functions.

# Output -

```
Enter Manager Count : 1

Enter Worker Information for 1

Enter Code : 1001

Enter Name : Surendra

Enter Salary : 50000

Enter DA : 600

Enter HRA : 700

Manager Information

Code : 1001

Name : Surendra
Salary : 50000

DA : 600

HRA : 700

TA : 50000

Gross Salary : 56300
```