**ASSIGNMENT NO: 02a**

**Problem Statement:**

Develop an object oriented program in C++ to create an abstract base class Employee and derived classes SalariedEmployee, HourlyEmployee and CommisionEmployee.

The class Employee has data members: string Ename, int EmpID and has a default constructor and parameterized constructor. It has two virtual functions accept() to receive data member values from the user and display() to output data member values; and a pure virtual function earnings().

The class SalariedEmployee has a data member: double weeklysalary and has a default constructor and parameterized constructor. The function earnings() displays weekly salary.

The class HourlyEmployee has data members: double wage, double hours and double Hourlysalary; and has a default constructor and parameterized constructor. The function earnings() is defined as

if(hours<40) { Hourlysalary= hours\*wage; }

else { Hourlysalary=40\*wage + ((hours-40)\*wage)\*1.5; }

The class CommisionEmployee has data members: double grossSales, double commissionRate, double Commisionsalary; and has a default constructor and parameterized constructor. The function earnings() is defined as Commisionsalary = grossSales \* commissionRate;

Create objects of derived classes and display their earnings.

**Objectives:**

1. To learn concepts of inheritance in C++
2. To learn about virtual function and abstract class in C++

**Theory:**

**Explain**

* + **Inheritance**
  + **Virtual functions**
  + **Abstract classes**

# Algorithm / Implementation:

1. START.
2. Create an abstract base class Employee.
3. The class Employee has data members: string Ename, int EmpID and has a default constructor and parameterized constructor. It has two virtual functions accept() to receive data member values from the user and display() to output data member values; and a pure virtual function earnings().
4. Create derived classes SalariedEmployee, HourlyEmployee and CommisionEmployee.
5. The class SalariedEmployee has a data member: double weeklysalary and has a default constructor and parameterized constructor. The function earnings() displays weekly salary.
6. The class HourlyEmployee has data members: double wage, double hours and double Hourlysalary; and has a default constructor and parameterized constructor. The function earnings() is defined as

if(hours<40) { Hourlysalary= hours\*wage; }

else { Hourlysalary=40\*wage + ((hours-40)\*wage)\*1.5; }

1. The class CommisionEmployee has data members: double grossSales, double commissionRate, double Commisionsalary; and has a default constructor and parameterized constructor. The function earnings() is defined as Commisionsalary = grossSales \* commissionRate;
2. Create objects of derived classes and display their earnings.
3. STOP

# Platform: 64 –bit Open source Linux

**Input:** Accept data member values for derived functions

**Output:** Earning details of employee

**Conclusion:** Hence, understood about inheritance and abstract classes in C++ successfully.

**FAQs:**

1. Explain types of inheritance.
2. What is the significance of different access specifiers used for inheritance in C++?
3. What are the benefits of inheritance?