

Lab 08 – 23-11-2023

Task 1: Class named **Employee** is provided. Write child classes **RegularEmployee** & **SalesMan** and run main function and required output is also given:

RegularEmployee has no extra data member, only you have to write ostream function. Inside call ostream of parent by type casting and add further code required to generate given output

SalesMan has one data member that is commission rate (float 0.02 means 2% commission on sales). There are two functions required in this class:

- **calculateSalary(int sales)**
Call parent class calculateSalary function to get regular salary from parent class. Next calculate commission for this multiply sales with commission rate and add into current month salary
- Write ostream function, again call parent class ostream by type casting, next add required code

See main function and output carefully:

```
int main(){
    int temp;
    RegularEmployee emp1(30000);
    emp1.calculateSalary();
    cout<<emp1;
    cout<<"\n*****\n\n";
    SalesMan emp2(20000,0.02);
    emp2.calculateSalary(200000);
    cout<<emp2;
    cout<<"\n*****\n\n";
    Employee *emp=new RegularEmployee(35000);
    cout<<*emp;//Calling ostream of Employee
    delete emp;
    cout<<"\n*****\n\n";
    emp=new SalesMan(25000,0.03);
    ((SalesMan*)emp)->calculateSalary(180000);
    cout<<*emp;//Calling ostream of Employee
    delete emp;
    return 0;
}
```

Required Output:

```
Employee Number:1
Basic Salary: 30000
Salary: 46500
*****
Employee Number:2
Basic Salary: 20000
Salary: 31000
*****
Employee Number:3
Basic Salary: 35000
*****
Employee Number:4
Basic Salary: 25000
```

Task 2: We want to store the information of different vehicles. Create a class named **Vehicle** with three data member named mileage (number of kilometers vehicle has travelled/ driven), price and ownership fees (transfer/ registration charges). Create its two subclasses. **Car** with data members to store seating capacity and fuel type ('D' diesel or 'P' petrol). **Bike** with data members to store the cc (Cubic Capacity like 70cc), tank size (in inches). Make two subclasses of **Car**, **ImportedCar** and **LocalCar**. **ImportedCar** car having data members to store import year, manufacture year and mileage abroad. **Local car** having a data member to store manufactured year. Create class **HeavyBike** with data members to store number of cylinders, number of gears, cooling type ('A' air, 'L' liquid or 'O' oil), and wheel type ('A' alloys or 'S' spokes). Show main function and required output and accordingly add data members in each class.

```
int main(){
    Bike bike(70000, 12000, 1000, 70, 10);
    cout << bike;
    HeavyBike hbike(70000, 12000, 1000, 70, 10, 4,6,'A','A');
    cout << hbike;
    ImportedCar iCar(870000, 120000, 10000, 5, 'P', 2008, 2006,90000);
    cout << iCar;
    LocalCar lCar(870000, 120000, 10000, 5, 'P', 2008);
    cout << lCar;
    return 0;
}
```

Output:

Price: Rs.70000

Mileage:12000

Ownership Fee:1000

Engine Capacity:70

Tank Size:10 Inches

Price: Rs.70000

Mileage:12000

Ownership Fee:1000

Engine Capacity:70

Tank Size:10 Inches

Cylinders: 4

Number Of Gears: 6

Cooling Type: Air

Tyre Type: Alloy

Price: Rs. 870000

Mileage: 120000

Ownership Fee: -1760888064

seating Capacity: -1760888064

Fuel Type: Petrol

Import Year: 2008

Manufactured Year: 2006

Mileage Abroad: 90000

Price: Rs. 870000

Mileage: 120000

Ownership Fee: -1760889974

seating Capacity: -1760889974

Fuel Type: Petrol

Manufactured Year: 2008
