National University of Computer and Emerging Sciences



**Laboratory Manual**

***(Computer Programming)***

|  |  |
| --- | --- |
| Course Instructor | Sarim Baig |
| Lab Instructor(s) | Ahmad Raza  Waqas Manzoor |
| Section | A/B |
| Semester | Spring 2017 |
| Date | 11-April-2017 |

Department of Computer Science

FAST-NU, Lahore

**Lab Manual (11)**

Suppose we are developing a program that compute the tax of vehicles.

**Types of vehicles**

There are two type of vehicle

**HTV: heavy travelling vehicles**

**LTV: Light travelling vehicles**

* HTV class has data member name as Fix Tax, which will be used while computing the tax of heavy travelling vehicles.

Value of fix tax will be passed whenever a HTV type object is created.

* LTV class has thee slabs for different **Cubic Centimeters (CC)** of Light travelling vehicles.

If LTV’s CC <= 1000 Tax = x

If 1000 < LTV’s CC <= 2000 Tax = y

If LTV’s CC > 2000 Tax = z

Value of x, y and z will be passed whenever a LTV type object is created

**Vehicles**

You have following vehicles:

* **Car:** A car has its makers, year model, name and CC, a **Print Vehicle** function , **compute Tax** function
* **Bike:** A bike has its makers, year model and CC, a **Print Vehicle** function , **compute Tax** function
* **Bus:** A bus has its number Of seats, a **Print Vehicle** function , **compute Tax** function, tax of bus will be associated with number of seats of bus, you have a per seat tax which is = Rs 20, it will be applied when number of seats will be greater than 20.
* **Truck:** A truck has its load capacity, a **Print Vehicle** function , **compute Tax** function, tax of truck will be associated with load capacity of truck, you have per KG tax which is = Rs 100, it will be applied when load capacity will be greater than 1000 KG

There is top class name vehicle: which has a **compute Tax** function, and a **Print Vehicle** function

Use following main program:

int main()

{

Car \* c1 = new Car(“Honda” , 2012, “City” , 1500)

Car \* c2 = new Car(“Mercedes” , 2016 , “Kompressor” , 2000)

Car \* c3 = new Car(“Suzuki” , 2016 , “Wagon\_r”, 800)

Bike \* b1 = new Bike(“Honda” , 2012, 100)

Bike \* b2 = new Bike(“Uniqe” , 2016 , 70)

Bike \* b3 = new Bike(“Suzuki” , 2016 , 125)

//second parameter is Fix tax for HTV class

Truck \* t1 = new Truck (1500 , 5000)

Truck \* t2 = new Truck (1500 , 5000 )

Truck \* t3 = new Truck (800 , 5000)

Bus \* bb1 = new Bus (100, 5000)

Bus \* bb2 = new Bus (70, 5000)

Bus \* bb3 = new Bus (125, 5000)

Vehicle \* v[12];

V[0] = c1;

V[1] = c2;

V[2] = c3;

V[3] = b1;

V[4] = b2;

V[5] = b3;

V[6] = t1;

V[7] = t2;

V[8] = t3;

V[9] = bb1;

V[10] = bb2;

V[11] = bb3;

For(int i = 0 < i <12 ; i++)

{

V[i]->printVehical(); V[i]->computeTax();}}

**Good Luck ☺**