**SIES- Graduate School of Technology**

**DEPARTMENT OF COMPUTER ENGINEERING**

**Assignment No. 02**

**Subject: OOPM Division: C&D**

**Marks: 10 Time: 1Hr**

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Q 1: Write a program to define Vehicle class which is the super class whereas Bus and Truck are sub classes of Vehicle class. Transport is a main class which contains main () method.

**Detailed description:**

**The class Vehicle must have following attributes:**

1. **Vehicle model**
2. **Registration number**
3. **Vehicle speed (km/hour)**
4. **Fuel capacity (litres)**
5. **Fuel consumption (kilo meters/litre)**

The Vehicle class must have following methods:

1. Parameterized constructor that will initialize all the data members with the given values.
2. Input method which will get and set the values of data members of class.
3. A method ***fuelNeeded()*** that will take ***distance (in kilo meter)*** as an argument. It will calculate the amount of fuel needed for the given distance and will return the value of fuel needed for given distance. You can use the attributes ‘*Fuel consumption’* defined within above Vehicle class to determine the fuel needed for the given distance.
4. A method ***distanceCovered()*** that will take ***time*** (in hours) as an argument. It will calculate the distance for the given time and speed and returns the value of distance. The formula to calculate speed is given as **speed = distance/time**. You can use this formula to calculate the distance.
5. A ***display()*** method that will display all the information of a vehicle.

**Detailed description of Truck (Sub class):**

The class Truck must have following attribute:

**Cargo weight limit (Kilo grams)**

The above class must have following methods:

1. Parameterized constructor that will initialize all data members with the given values.
2. Input method for getting and setting values of data members of class.
3. It must also override the ***display()***method of Vehicle class and must call display() method of superclass within overridden method.

**Detailed description of Bus (Sub class):**

The class Bus must have following attribute:

**No of passengers**

The above class must have following methods:

1. Parameterized constructor that will initialize all the data members with given values.
2. Input method to set values of members.
3. It must also override the ***display()***method of Vehicle class and must call display method of super class within overridden method.

Create a class ***Transport*** which contains the main method. Perform the following within main method:

* Create an instance of class Truck and initialize all the data members with proper values.
* Create an instance of class Bus and initialize all the data members with proper values.
* Now, call **fuelNeeded*()***,***distanceCovered****()* and***display()*** methods using objects of these classes.
* Add exception whenever necessary

Q 2: Write a program to generate series of ODD and EVEN numbers up to n using Multithreading.

**Output** ODD: 1

EVEN: 2

EVEN: 4

ODD: 3

. .

ODD: 9

ODD: 11

ODD: 13

EVEN: 6

Q 3: Write a program to display clock using Applet.

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