Experiment No. 3
Implement a program that demonstrates the concepts of class and objects
Date of Performance:
Date of Submission:

Aim: Implement a program that demonstrates the concepts of class and objects

Objective: To develop the ability of converting real time entity into objects and create their classes.

Theory:

A class is a user defined blueprint or prototype from which objects are created. It represents the set of properties i.e., members and methods that are common to all objects of one type. In general, class declarations can include these components, in order:

1. Modifiers: A class can be public or has default access.
2. class keyword: class keyword is used to create a class.
3. Class name: The name should begin with a initial letter (capitalized by convention).
4. Superclass (if any): The name of the class's parent (superclass), if any, preceded by the keyword extends. A class can only extend (subclass) one parent.
5. Interfaces (if any): A comma-separated list of interfaces implemented by the class, if any, preceded by the keyword implements. A class can implement more than one interface.
6. Body: The class body surrounded by braces, {}.

An OBJECT is a basic unit of Object-Oriented Programming and represents the real-life entities. A typical Java program creates many objects, which interact by invoking methods. An object consists of:

1. State: It is represented by attributes of an object. It also reflects the properties of an object.
2. Behavior: It is represented by methods of an object. It also reflects the response of an object with other objects.
3. Identity: It gives a unique name to an object and enables one object to interact with other objects.

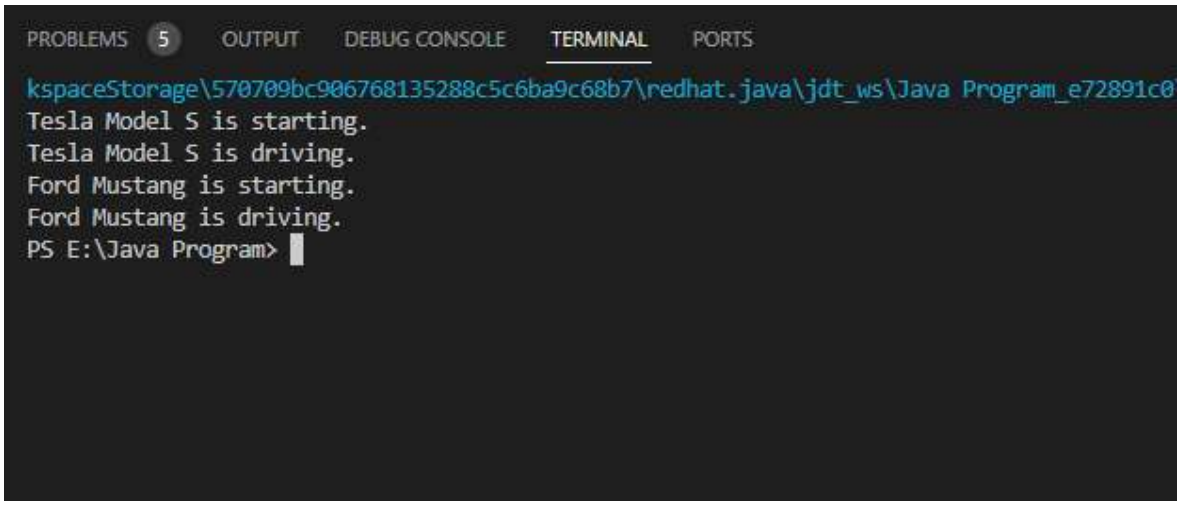
Code:

```
class Car {
    String model;
    String color;
    int year;

    void start() {
        System.out.println(model + " is starting.");
    }

    void drive() {
        System.out.println(model + " is driving.");
    }
}

public class Model {
    public static void main(String[] args) {
        Car car1 = new Car();
        car1.model = "Tesla Model S";
        car1.color = "Red";
        car1.year = 2023;

        car1.start();
        car1.drive();

        Car car2 = new Car();
        car2.model = "Ford Mustang";
        car2.color = "Blue";
        car2.year = 2022;

        car2.start();
        car2.drive();
    }
}
```

Output:

```
Tesla Model S is starting.
Tesla Model S is driving.
Ford Mustang is starting.
Ford Mustang is driving.
```

ScreenShot:



Conclusion:

Comment on how you create a class template and their objects.

Ans:

To create a class template, define a class using the `class` keyword followed by its name. Inside the class, declare the attributes (variables) and methods (functions) that define the object's state and behavior. Create objects (instances) of the class using the `new` keyword. Assign values to the object's attributes and invoke its methods to interact with the object. Each object operates independently, with its own unique set of attribute values.