16/12/2024
Monday

① Develop a java program to create abstract class vehicle with abstract methods. calculate the speed and velocity. Create subclasses car & bike that extends vehicle class & implement respective methods to calculate the speed & velocity.

```
Program: abstract class Vehicle {
        abstract double calculateSpeed();
        abstract double calculateVelocity();
}
class car extends Vehicle {
    private double distance, displacement;
    private int time;
    car(double distance, double displacement, int time) {
        this.distance = distance;
        this.displacement = displacement;
        this.time = time;
    }
    double calculateSpeed() {
        return distance/time;
    }
    double calculateVelocity() {
        return displacement/time;
    }
}
class bike extends Vehicle() {
    private double distance, displacement;
```

```
Bike( double distance, double displacement, int time ){
    this.distance = distance;
    this.displacement = displacement;
    this.time = time;
}
double calculate_speed() {
    return (distance/ time);
}
double calculate velocity() {
    return (displacement/ time);
}
}
ublic class vehicle {
    public static void main(string[] args){
        vehicle car = new car( 54, 23, 2);
        Vehicle bike = new bike( 60, 35, 30);
        System.out.println("car speed: " + car.calculate
                                            speed());
        System.out.println("car velocity: " + car.
                                    calculateVelocity());
        System.out.println("Bike speed: " + bike.
                                    Calculate speed());
        System.out.println("Bike velocity: " + bike.
                                    calculateVelocity());
    }
}
```