interface Vehicle {

void start();

void stop();

void accelerate(int speed);

void brake(int speed);

}

// Implement the Bicycle class that implements the Vehicle interface

class Bicycle implements Vehicle {

@Override

public void start() {

System.out.println("Bicycle started pedaling.");

}

@Override

public void stop() {

System.out.println("Bicycle stopped.");

}

@Override

public void accelerate(int speed) {

System.out.println("Bicycle accelerated to " + speed + " km/h.");

}

@Override

public void brake(int speed) {

System.out.println("Bicycle slowed down to " + speed + " km/h.");

}

}

// Implement the Car class that implements the Vehicle interface

class Car implements Vehicle {

@Override

public void start() {

System.out.println("Car started the engine.");

}

@Override

public void stop() {

System.out.println("Car stopped.");

}

@Override

public void accelerate(int speed) {

System.out.println("Car accelerated to " + speed + " km/h.");

}

@Override

public void brake(int speed) {

System.out.println("Car applied brakes, slowing down to " + speed + " km/h.");

}

}

// Implement the Bike class that implements the Vehicle interface

class Bike implements Vehicle {

@Override

public void start() {

System.out.println("Bike started pedaling.");

}

@Override

public void stop() {

System.out.println("Bike stopped.");

}

@Override

public void accelerate(int speed) {

System.out.println("Bike accelerated to " + speed + " km/h.");

}

@Override

public void brake(int speed) {

System.out.println("Bike slowed down to " + speed + " km/h.");

}

}

public class Main {

public static void main(String[] args) {

// Create instances of different vehicles and demonstrate their functionalities

Bicycle bicycle = new Bicycle();

Car car = new Car();

Bike bike = new Bike();

bicycle.start();

bicycle.accelerate(20);

bicycle.brake(10);

bicycle.stop();

car.start();

car.accelerate(80);

car.brake(60);

car.stop();

bike.start();

bike.accelerate(30);

bike.brake(15);

bike.stop();

}

}