Assignment 05 - OOPL (Code)

```
interface Vehicles {

	void gearChange();

	void speedUp();

	void applyBreaks();
}

import java.util.*;

class Bicycle implements Vehicles {
	Scanner sc = new Scanner(System.in);

	@Override
	public void gearChange() {

	int gear;
	System.out.println("Enter a gear number to know it's ideal speed range (MAX 3): \n");
	gear = sc.nextInt();

	if (gear == 1) {
		System.out.println("The speed limit is 0 - 10km/hr. \n");
	}
	if (gear == 2) {
		System.out.println("The speed limit is 10 - 20km/hr. \n");
	}
	if (gear == 3) {
	System.out.println("The speed limit is 20 - 40km/hr. \n");
	}
	if (gear > 3) {
		System.out.println("This gear is not available in your bicycle! Buy a better
bicycle. \n");
```

```
        }
        }


        @Override
        public void speedUp() {
        int speed;
        System.out.println("\nSelect speed range to know which gear is best suited for it (MAX
30km/hr): \n");
        System.out.println("1)0 - 10km/hr. \n2)10 - 20km/hr. \n3)20 - 30km/hr. \n");
        speed = sc.nextInt();

        switch (speed) {
        case 1 -> System.out.println("1st Gear! \n");
        case 2 -> System.out.println("2nd Gear! \n");
        case 3 -> System.out.println("3rd Gear! \n");
        default -> System.out.println("Get a better bicycle! \n");
        }
        }

        @Override
        public void applyBreaks() {
        System.out.println("Apply breaks slowly & accordingly shift down the gears w.r.t. speed
mentioned above. \n");
        }
}


import java.util.*;

class Bike implements Vehicles {

        Scanner sc = new Scanner(System.in);
        @Override
        public void gearChange() {
        int gear;
        System.out.println("Enter a gear number to know it's ideal speed range (MAX 4): \n");
        gear = sc.nextInt();

        if(gear == 1) {
```

```
        System.out.println("The speed limit is 0 - 20km/hr. \n");
        }
        if(gear == 2) {
        System.out.println("The speed limit is 20 - 40km/hr. \n");
        }
        if(gear == 3) {
        System.out.println("The speed limit is 80 - 120km/hr. \n");
        }
        if(gear == 4) {
        System.out.println("The speed limit is 120 - 160km/hr. \n");
        }
        if(gear > 4) {
        System.out.println("This gear is not available in your bike! Buy a better bike. \n");
        }
        }

        @Override
        public void speedUp() {
        int speed;
        System.out.println("\nSelect speed range to know which gear is best suited for it (MAX
160km/hr): \n");
        System.out.println("1)0 - 20km/hr. \n2)20 - 40km/hr. \n3)80 - 120km/hr. \n4)120 -
160km/hr.\n");
        speed = sc.nextInt();

        switch (speed) {
        case 1 -> System.out.println("1st Gear! \n");
        case 2 -> System.out.println("2nd Gear! \n");
        case 3 -> System.out.println("3rd Gear! \n");
        case 4 -> System.out.println("4th Gear! \n");
        default -> System.out.println("Get a better bike! \n");
        }
        }

        @Override
        public void applyBreaks() {
        System.out.println("Apply breaks slowly & accordingly shift down the gears w.r.t. speed
mentioned above. \n");
        }
}
```

```
import java.util.*;

class Car implements Vehicles {
	Scanner sc = new Scanner(System.in);
	@Override
	public void gearChange() {
	int gear;
	System.out.println("Enter a gear number to know it's ideal speed range (MAX 5): \n");
	gear = sc.nextInt();

	if(gear == 1) {
	System.out.println("The speed limit is 0 - 20km/hr. \n");
	}
	if(gear == 2) {
	System.out.println("The speed limit is 20 - 40km/hr. \n");
	}
	if(gear == 3) {
	System.out.println("The speed limit is 80 - 120km/hr. \n");
	}
	if(gear == 4) {
	System.out.println("The speed limit is 120 - 160km/hr. \n");
	}
	if(gear == 5) {
	System.out.println("The speed limit is 160 - 240km/hr. \n");
	}
	if (gear > 5){
	System.out.println("This gear is not available in your stupid car! Buy a better car, you
dumb fuck! \n");
	}

	}

	@Override
	public void speedUp() {
	int speed;
	System.out.println("\nSelect speed range to know which gear is best suited for it (MAX
240km/hr): \n");
```

```
        System.out.println("1)0 - 20km/hr. \n2)20 - 40km/hr. \n3)80 - 120km/hr. \n4)120 -
160km/hr. \n5)160 - 240km/hr. \n");
        speed = sc.nextInt();

        switch (speed) {
        case 1 -> System.out.println("1st Gear! \n");
        case 2 -> System.out.println("2nd Gear! \n");
        case 3 -> System.out.println("3rd Gear! \n");
        case 4 -> System.out.println("4th Gear! \n");
        case 5 -> System.out.println("5th Gear! \n");
        default -> System.out.println("Get a better car, asshole! \n");
        }

        }

        @Override
        public void applyBreaks() {
        System.out.println("Apply breaks slowly & accordingly shift down the gears w.r.t. speed
mentioned above. \n");
        }
}


import java.util.*;

public class Main {
        public static void main(String[] args) {
        int ch;
        switchCaseLoop:
        while(true){
        Scanner sc = new Scanner(System.in);
        System.out.println("Choose vehicle: \n");
        System.out.println("1)Bicycle. \n2)Bike. \n3)Car. \n4)Exit\n");
        ch = sc.nextInt();

        switch (ch) {
                case 1 -> {
                Bicycle B = new Bicycle();
                B.gearChange();
                B.speedUp();
```

```
                B.applyBreaks();
                }
                case 2 -> {
                Bike B1 = new Bike();
                B1.gearChange();
                B1.speedUp();
                B1.applyBreaks();
                }
                case 3 -> {
                Car C = new Car();
                C.gearChange();
                C.speedUp();
                C.applyBreaks();
                }

                case 4 -> {
                break switchCaseLoop;
                }

                default -> System.out.println("Invalid choice! Please enter a valid choice. \n");
        }
        }
        }
}
```

OUTPUT

```
Choose vehicle:

1)Bicycle.
2)Bike.
3)Car.
4)Exit

1
```

Enter a gear number to know it's ideal speed range (MAX 3):

3

The speed limit is 20 - 40km/hr.

Select speed range to know which gear is best suited for it (MAX 30km/hr):

1)0 - 10km/hr.
2)10 - 20km/hr.
3)20 - 30km/hr.

2

2nd Gear!

Apply breaks slowly & accordingly shift down the gears w.r.t. speed mentioned above.

Choose vehicle:

1)Bicycle.
2)Bike.
3)Car.
4)Exit

2

Enter a gear number to know it's ideal speed range (MAX 4):

4

The speed limit is 120 - 160km/hr.

Select speed range to know which gear is best suited for it (MAX 160km/hr):

1)0 - 20km/hr.
2)20 - 40km/hr.
3)80 - 120km/hr.
4)120 - 160km/hr.

3

3rd Gear!

Apply breaks slowly & accordingly shift down the gears w.r.t. speed mentioned above.

Choose vehicle:

1)Bicycle.
2)Bike.
3)Car.
4)Exit

3

Enter a gear number to know it's ideal speed range (MAX 5):

5

The speed limit is 160 - 240km/hr.

Select speed range to know which gear is best suited for it (MAX 240km/hr):

1)0 - 20km/hr.
2)20 - 40km/hr.
3)80 - 120km/hr.
4)120 - 160km/hr.
5)160 - 240km/hr.

4

4th Gear!

Apply breaks slowly & accordingly shift down the gears w.r.t. speed mentioned above.

Choose vehicle:

1)Bicycle.
2)Bike.
3)Car.

4)Exit

4

Process finished with exit code 0