

## Assignment 05 - OOPL (Code)

//Code performed by Pranit Zambre, Roll Number: 19.

```
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");
    }
}

```

**//Code performed by Pranit Zambre, Roll Number: 19.**

```

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");
}
}
```

**//Code performed by Pranit Zambre, Roll Number: 19.**

```
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");
}
}

```

**//Code performed by Pranit Zambre, Roll Number: 19.**

```
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