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Assignment Number :05

```
interface Vehicle {
 void changeGear(int newGear);
 void speedUp(int increment);
 void applyBrakes(int decrement);
 void printState();
}
class Cycle implements Vehicle {
 int velocity = 0;
 int currentGear;
 public void changeGear(int newGear) {
 currentGear = newGear;
 }
 public void speedUp(int increment) {
 velocity += increment;
 }
 public void applyBrakes(int decrement) {
 velocity -= decrement;
 }
 public void printState() {
 System.out.println("Cycle's speed: " + velocity + " km/h\nGear: " + currentGear);
 }
}
class Automobile implements Vehicle {
 int velocity = 0;
 int currentGear;
 public void changeGear(int newGear) {
 currentGear = newGear;
 }
 public void speedUp(int increment) {
 velocity += increment;
 }
 public void applyBrakes(int decrement) {
 velocity -= decrement;
 }
```

```
 public void printState() {
 System.out.println("Automobile's speed: " + velocity + " km/h\nGear: " + currentGear
+ "\n");
 }
}
class Motorcycle implements Vehicle {
 int velocity = 0;
 int currentGear;
 public void changeGear(int newGear) {
 currentGear = newGear;
 }
 public void speedUp(int increment) {
 velocity += increment;
 }
 public void applyBrakes(int decrement) {
 velocity -= decrement;
 }
 public void printState() {
 System.out.println("Motorcycle's speed: " + velocity + " km/h\nGear: " + currentGear
+ "\n");
 }
}
class VehicleTest {
 public static void main(String[] args) {
 Cycle cycle1 = new Cycle();
 cycle1.changeGear(2);
 cycle1.speedUp(12);
 cycle1.applyBrakes(4);
 System.out.println("----------------------------");
 System.out.println("Current State of Cycle");
 cycle1.printState();
 Automobile car1 = new Automobile();
 car1.changeGear(4);
 car1.speedUp(80);
 car1.applyBrakes(20);
 System.out.println("----------------------------");
 System.out.println("Current State of Automobile");
 car1.printState();
 Motorcycle bike1 = new Motorcycle();
 bike1.changeGear(5);
 bike1.speedUp(90);
 bike1.applyBrakes(30);
 System.out.println("----------------------------");
 System.out.println("Current State of Motorcycle");
```

```
 bike1.printState();
 }
}
```

Output:

```
----------------------------
Current State of Cycle
Cycle's speed: 8 km/h
Gear: 2
----------------------------
Current State of Automobile
Automobile's speed: 60 km/h
Gear: 4
----------------------------
Current State of Motorcycle
Motorcycle's speed: 60 km/h
Gear:5
```