Code :

```
interface Vehicle {
   public void changeGear(int a);
   public void speedUp(int a);
   public void applyBreaks(int a);
   public void display();
}
class Bicycle implements Vehicle{
   private int gear;
   private int speed;
   final int maxSpeed = 50;

   @Override
   public void changeGear(int a){
      if(a > 0){
         gear = a;
      }
      else{
         System.out.println("Gear cannot be Negative.");
      }
   }

   @Override
   public void applyBreaks(int a) {
      speed -= a;
   }

   @Override
   public void speedUp(int a){
      if(speed+a <= maxSpeed){
         speed += a;
      }
      else{
         System.out.println("Maximum Speed of Bicycle is " + maxSpeed);
      }
   }

   @Override
   public void display(){
      System.out.println("Speed of Bicycle : " + speed);
      System.out.println("Gear of Bicycle : " + gear);
   }
}

class Bike implements Vehicle{
   private int gear;
   private int speed;
   final int maxSpeed = 180;

   @Override
   public void changeGear(int a){
      if(a > 0){
         gear = a;
      }
      else{
         System.out.println("Gear cannot be Negative.");
      }
   }

   @Override
```

```
    public void applyBreaks(int a) {
        speed -= a;
    }

    @Override
    public void speedUp(int a){
        if(speed+a <= maxSpeed){
            speed += a;
        }
        else{
            System.out.println("Maximum Speed of Bike is " + maxSpeed);
        }
    }

    @Override
    public void display(){
        System.out.println("Speed of Bike : " + speed);
        System.out.println("Gear of Bike : " + gear);
    }
}

class Car implements Vehicle{
    private int gear;
    private int speed = 0;
    final int maxSpeed = 240;

    @Override
    public void changeGear(int a){
        if(a > 0){
            gear = a;
        }
        else{
            System.out.println("Gear cannot be Negative.");
        }
    }

    @Override
    public void applyBreaks(int a) {
        speed -= a;
    }

    @Override
    public void speedUp(int a){
        if(speed+a <= maxSpeed){
            speed += a;
        }
        else{
            System.out.println("Maximum Speed of Car is " + maxSpeed);
        }
    }

    @Override
    public void display(){
        System.out.println("Speed of Car : " + speed);
        System.out.println("Gear of Car : " + gear);
    }
}

import java.util.Scanner;
public class Main {
```

```
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        Bicycle b1 = new Bicycle();
        Bike b2 = new Bike();
        Car c1 = new Car();

       while(true){
          System.out.println("\nSelect");
          System.out.println("1.Change Gear");
          System.out.println("2.Speed Up");
          System.out.println("3.Apply Break");
          System.out.println("4.Display Speed and Gear");
          System.out.println("5.Exit\n");

          int choice;
          System.out.print("Enter Your Choice : ");
          choice = sc.nextInt();
          System.out.println("");
          switch (choice){
             case 1:
                int tempGear;
                System.out.print("Enter the Gear That You Want to Change to: ");
                tempGear = sc.nextInt();
                b1.changeGear(tempGear);
                break;
             case 2:
                int tempSpeed;
                System.out.print("Enter The Value of Speed: ");
                tempSpeed = sc.nextInt();
                b1.speedUp(tempSpeed);
                break;
             case 3:
                int temp;
                System.out.print("Enter The Value of Speed That You Want to Decrement: ");
                temp = sc.nextInt();
                b1.applyBreaks(temp);
                break;
             case 4:
                b1.display();
                break;
             case 5:
                System.out.println("Exiting The Program..");
                System.exit(0);
          }
       }
    }
}
```

Output :

```
Select
1.Change Gear
2.Speed Up
3.Apply Break
4.Display Speed and Gear
5.Exit

Enter Your Choice : 1

Enter the Gear That You Want to Change to: 4
```

```
Select
1.Change Gear
2.Speed Up
3.Apply Break
4.Display Speed and Gear
5.Exit

Enter Your Choice : 2

Enter The Value of Speed: 50

Select
1.Change Gear
2.Speed Up
3.Apply Break
4.Display Speed and Gear
5.Exit

Enter Your Choice : 3

Enter The Value of Speed That You Want to Decrement: 10

Select
1.Change Gear
2.Speed Up
3.Apply Break
4.Display Speed and Gear
5.Exit

Enter Your Choice : 4

Speed of Bicycle : 40
Gear of Bicycle : 4

Select
1.Change Gear
2.Speed Up
3.Apply Break
4.Display Speed and Gear
5.Exit

Enter Your Choice : 5

Exiting The Program..
```