```java
import java.util.*;


interface vehicle
{
   void gear_change(int a);
   void speed_up();
   void apply_break();
   void display();
}

class bicycle implements vehicle
{
   int gear , speed;

   bicycle(){
      System.out.println("Bicycle started successfully\n");
      gear=1;
      speed=10;
   }
   public void gear_change(int gearex)
   {
      System.out.println("Initial gear is : "+gear);
      if(gear<7 && gear>0)
      {
         gear=gearex;
         System.out.println("Gear changed Successfully current gear is : "+gear);
```

```java
        }

        else

        {

            System.out.println("Gear is out of range\n");

        }


    }


    public void speed_up()

    {

        System.out.println("Initial SPEED is : "+speed);

        if((speed+5)<50)

        {

            speed=speed+5;

        }

        else

        {

            System.out.println("Speed can not be increased above 50\n");

        }

    }

    public void apply_break()

    {

        Scanner get=new Scanner(System.in);

        int x;

        System.out.println("1.Decrease speed\n2.Stop vehicle\n\nEnter your choice : ");

        x=get.nextInt();

        if(x==1)

        {

            if((speed-5)>0)
```

```java
        {
            speed=speed-5;

            System.out.println("Speed decreased successfully\n");
        }
        else
        {
            speed=0;

            System.out.println("Vehicle stoped succefully\n");
        }
    }
    if(x==2)
    {
        speed=0;

        gear=0;
    }
    else
    {
        System.out.println("!!! INVALID INPUT !!!");
    }


}
public void display()
{
    System.out.println("Speed is : "+speed+"\tGear is : "+gear);
}


}
```

```java
class bike implements vehicle
{
    int gear , speed;


    bike(){
        System.out.println("Bike started successfully\n");
        gear=1;
        speed=20;
    }
    public void gear_change(int gearex)
    {
        System.out.println("Initial gear is : "+gear);
        if(gear<7 && gear>0)
        {
            gear=gearex;
            System.out.println("Gear changed Successfully\n");
        }
        else
        {
            System.out.println("Gear is out of range\n");
        }


    }


    public void speed_up()
    {
        System.out.println("Initial speed is : "+speed);
        if((speed+10)<100)
        {
```

```java
      speed=speed+10;
   }
   else
   {
      System.out.println("Speed can not be increased above 100\n");
   }
}
public void apply_break()
{
   Scanner get=new Scanner(System.in);
   int x;
   System.out.println("1.Decrease speed\n2.Stop vehicle\n\nEnter your choice : ");
   x=get.nextInt();
   if(x==1)
   {
      if((speed-10)>0)
      {
         speed=speed-10;
         System.out.println("Speed decreased successfully\n");
      }
      else
      {
         speed=0;
         System.out.println("Vehicle stoped succefully\n");
      }
   }
   if(x==2)
   {
      speed=0;
```

```java
        gear=0;
      }
      else
      {
        System.out.println("!!! INVALID INPUT !!!");
      }


  }
  public void display()
  {
    System.out.println("Speed is : "+speed+"\tGear is : "+gear);
  }


}




class car implements vehicle
{
  int gear , speed;

  car(){
    System.out.println("Car started successfully\n");
    gear=1;
    speed=30;
  }
  public void gear_change(int gearex)
  {
    System.out.println("Initial gear is : "+gear);
```

```java
        if(gear<7 && gear>0)

        {

            gear=gearex;

            System.out.println("Gear changed Successfully current grear is : "+gear);

        }

        else

        {

            System.out.println("Gear is out of range\n");

        }


    }


    public void speed_up()

    {

        System.out.println("Initial speed is : "+speed);

        if((speed+15)<150)

        {

            speed=speed+15;

        }

        else

        {

            System.out.println("Speed can not be increased above 150\n");

        }

    }

    public void apply_break()

    {

        Scanner get=new Scanner(System.in);

        int x;

        System.out.println("1.Decrease speed\n2.Stop vehicle\n\nEnter your choice : ");
```

```java
    x=get.nextInt();

    if(x==1)

    {

        if((speed-15)>0)

        {

            speed=speed-15;

            System.out.println("Speed decreased successfully\n");

        }

        else

        {

            speed=0;

            System.out.println("Vehicle stoped succefully\n");

        }

    }

    if(x==2)

    {

        speed=0;

        gear=0;

    }

    else

    {

        System.out.println("!!! INVALID INPUT !!!");

    }


}

public void display()

{

    System.out.println("Speed is : "+speed+"\tGear is : "+gear);

}
```

```java
}


public class interfacee
{

   public static void main(String[] args)
   {
      Scanner get = new Scanner(System.in);
      vehicle v=null;
      System.out.println("***********************************\n");
      int y;
      bb:
      do
      {
         System.out.println("SELECT VEHICLE\n\n1.Bicycle\n2.Bike\n3.Car\n");
         y=get.nextInt();
         System.out.println("***********************************\n");


         if(y==1)
            v=new bicycle();
         else if(y==2)
            v=new bike();
         else if(y==3)
            v=new car();
         else if(y==4)


         System.out.println("For Exit press any key");
```

```java
        else
            break bb;
        if(0<y && y<4)
        {
            aa:
            do
            {
                System.out.println("\n1.Speed up\n2.Change Gear\n3.Apply break\n4.Display vehicle status");
                int z=get.nextInt();
                switch(z)
                {
                    case 1:
                        v.speed_up();
                        System.out.println("********************************\n");
                        break;
                    case 2:
                        System.out.println("Which gear you want\n");
                        int a=get.nextInt();
                        v.gear_change(a);
                        System.out.println("********************************\n");
                        break;
                    case 3:
                        v.apply_break();
                        System.out.println("********************************\n");
                        break;
```

```java
                case 4:
                    v.display();
                    System.out.println("*********************************\n");
                    break;
                case 5:
                    break aa;
                default:
                    System.out.println("INVALID INPUT");
            }
        }while(true);
    }


    }while( y!=4);
}
```

```
Microsoft Windows [Version 10.0.19044.1288]
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C:\Users\admin>cd Documents

C:\Users\admin\Documents>javac interfacee.java

C:\Users\admin\Documents>java interfacee
*****************************************

SELECT VEHICLE

1.Bicycle
2.Bike
3.Car


1
*****************************************

Bicycle started successfully


1.Speed up
2.Change Gear
3.Apply break
4.Display vehicle status
1
Initial SPEED is : 10
*****************************************


1.Speed up
2.Change Gear
3.Apply break
4.Display vehicle status
1
Initial SPEED is : 15
*****************************************


1.Speed up
2.Change Gear
3.Apply break
4.Display vehicle status
```

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}