Suppose you are developing a weather forecasting application.

In your app, the class 'Weather' is represented by one attribute:

Attribute	Description	Examples
temperature	A numeric value between -10.0 and +55.0	-5.5, 15.0,3.6

Question 1 (16 marks)

For the specifications in the previous slide:

a) Code the shell of the class 'Weather' and its attribute

b) Code an accessor and mutator for the instance variable 'temperature'. The mutator (setter) must return true if the input value is valid, false otherwise.

```
public class Weather {
    private double temperature;
    private boolean result;

    public void setResult (double testTemp) {
        if (testTemp >= -10.0 && testTemp <= 55.0) {
            temperature = testTemp;
            result = true;
        }
        else {
            result = false;
        }
    }

    public boolean getResult(){
        return result;
```

```
    }
}
```

The driver class is below:

```
public class WeatherDriver {
    public static void main(String[] args) {
        Weather w1=new Weather();
        w1.setResult(35.7);
        System.out.println("expected output is true and result is
"+w1.getResult());

        Weather w2=new Weather();
        w2.setResult(-30.6);
        System.out.println("expected output is false and result is
"+w2.getResult());
    }
}
```

The output is:

```
expected output is true and result is true
expected output is false and result is false
```

note:
the first line of output is for Monday with temperature set at 35.7
the second line of output is for Tuesday with temperature set at -30.6

```java
public class Weather {
    //instance variable
    private double temperature;

    //constructor
    public Weather(double initTemperature){
        setTemperature(initTemperature);
    }

    //accessor
    public double getTemperature(){
        return temperature;
    }

    //mutator
    public boolean setTemperature(double newTemperature){
        boolean retVal=false;
        if (newTemperature>=-10 && newTemperature<=55){
            retVal=true;
            temperature=newTemperature;
        }
        else{
            retVal=false;
        }
        return retVal;
    }
}
```

```java
public class WeatherDriver {
    public static void main(String[] args) {
        Weather w1=new Weather (35.7);
        System.out.println(w1.getTemperature());

        Weather w2=new Weather (-30.6);
        System.out.println(w2.getTemperature());
    }
}
```

output:
35.7
0.0