

Object Oriented Programming and Design – Assignment #1

1. START

Declare variables (distance, fuel efficiency, train ticket)
Prompt user for values
Determine the cost of travelling by car
Compare the cost of travelling by car versus the cost for the train
If the cost of car is less than train, output "car is cheaper"
Else if the cost of train is less than car, output "train is cheaper"
Else, output "both the same" if the costs are equal
END

2. START

Declare variables (home to work distance, mileage, work days, fraction)
Prompt user or values
Calculate the total distance to work (work days * home to work distance)
Calculate the total distance for personal use (mileage – total distance to work)
Calculate and output the fraction (total distance to work / total distance for personal use)
END

3.

```
Temperature.java
2  * Devante Wilson - 100554361
3  * September 17th, 2015
4  *
5  * OOP - Assignment 1 - Question 3
6  * Program reads a temperature in degrees celsius
7  * then outputs its equivalent in degrees fahrenheit
8  */
9
10 // import packages
11 import java.util.*;
12
13 public class Temperature
14 {
15     public static void main(String[] args)
16     {
17         // declare variables/objects
18         double celsius;
19         Scanner scan = new Scanner (System.in);
20
21         // prompt user for input
22         System.out.println("Please enter a temperature in degrees celsius.");
23         celsius = scan.nextDouble();
24
25         // calculate and output temperature in fahrenheit
26         System.out.println("Temperature in Fahrenheit: " + (celsius * (9/5.0) + 32));
27     }
28 }
29
```

```
Console
<terminated> Temperature [Java Application] C:\Software\IBM Eclipse\eclipseDevelopmentPackage\ibm_sdk80\bin\javaw.exe (Sep 17, 2015, 2:24:40 PM)
Please enter a temperature in degrees celsius.
20
Temperature in Fahrenheit: 68.0
```

4. START

Declare variables (cost of the card, number of meals bought, price of meals)

Get values from user

Compare discount card cost and cost of the benefit (free meal cost)

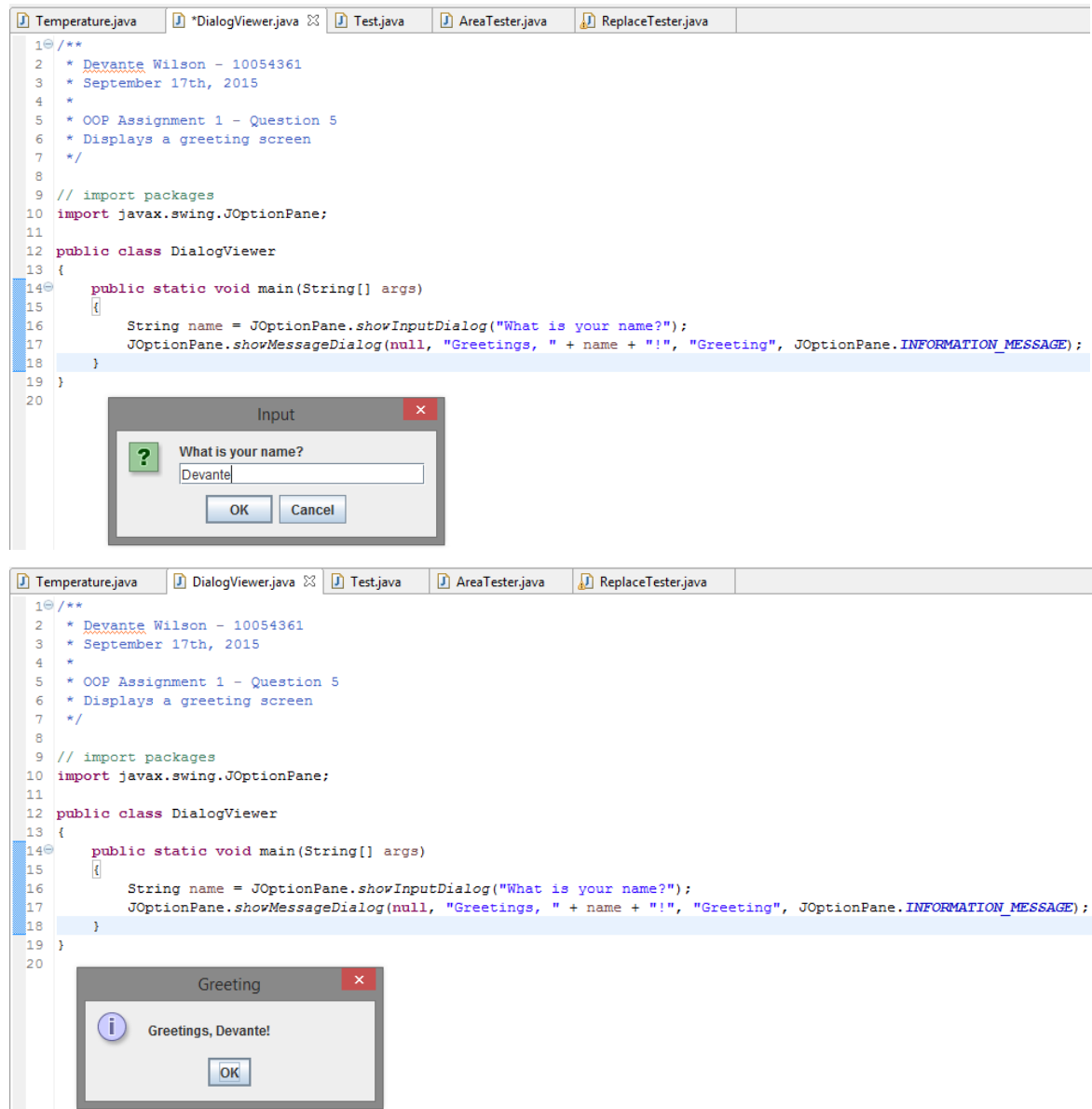
If discount card costs less than the benefit, buy the card

If benefit costs less than the card, do not buy the card

Otherwise, if they're the same, either is fine (do nothing)

END

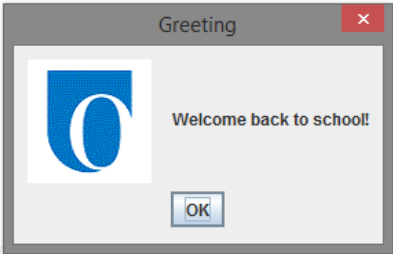
5.



```
1  /**
2   * Devante Wilson - 10054361
3   * September 17th, 2015
4   *
5   * OOP Assignment 1 - Question 5
6   * Displays a greeting screen
7   */
8
9  // import packages
10 import javax.swing.JOptionPane;
11
12 public class DialogViewer
13 {
14     public static void main(String[] args)
15     {
16         String name = JOptionPane.showInputDialog("What is your name?");
17         JOptionPane.showMessageDialog(null, "Greetings, " + name + "!", "Greeting", JOptionPane.INFORMATION_MESSAGE);
18     }
19 }
20
```

6.

```
Temperature.java | DialogViewer.java | Test.java | AreaTester.java
1 /**
2  * Devante Wilson - 100554361
3  * September 17th, 2015
4  *
5  * OOP - Assignment 1 - Question 6
6  * Displays a UOIT greeting screen
7  */
8
9 // import packages
10 import java.net.URL;
11 import javax.swing.ImageIcon;
12 import javax.swing.JOptionPane;
13
14 public class Test
15 {
16     public static void main(String[] args) throws Exception
17     {
18         // fetch icon location
19         URL imageLocation = new URL ("http://i.imgur.com/CilzIQZ.gif");
20
21         // create dialog box
22         JOptionPane.showMessageDialog(null,
23             "Welcome back to school!",
24             "Greeting",
25             JOptionPane.PLAIN_MESSAGE,
26             new ImageIcon(imageLocation));
27     }
28 }
29
```



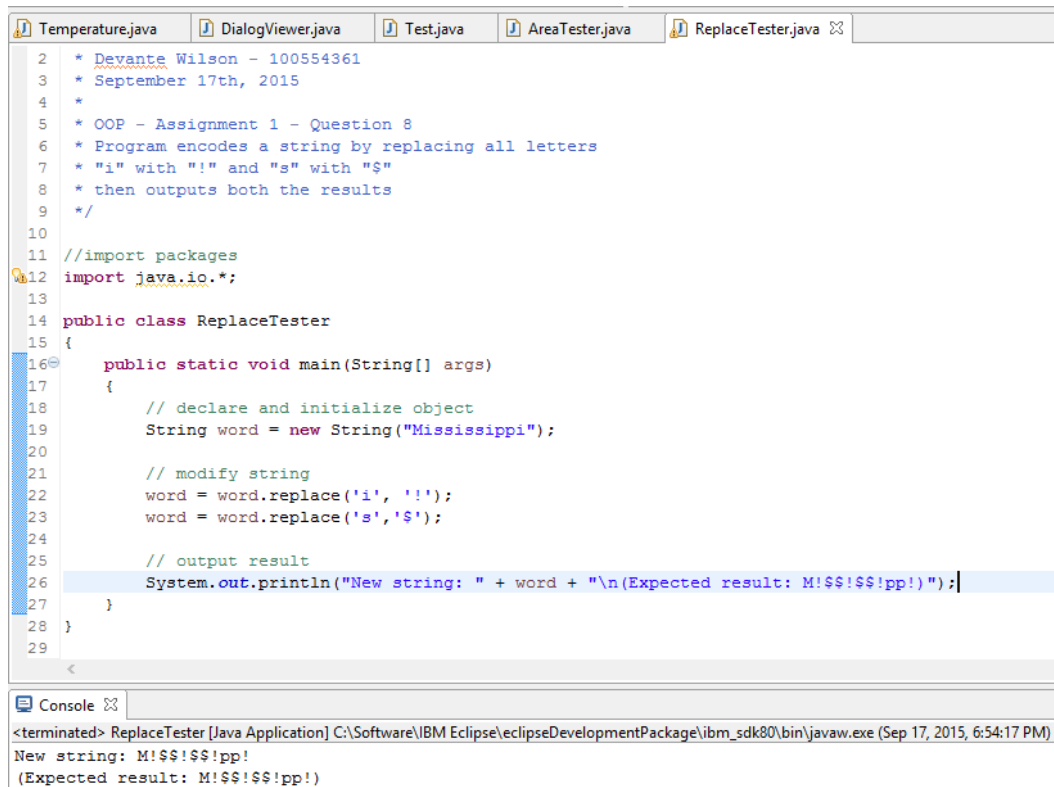
7.

```
Temperature.java | DialogViewer.java | Test.java | AreaTester.java
1 /**
2  * Devante Wilson - 100554361
3  * September 17th, 2015
4  *
5  * OOP - Assignment 1 - Question 7
6  * Constructs a rectangle object
7  * then computes and prints its area
8  */
9
10 // import packages
11 import java.awt.Rectangle;
12
13 public class AreaTester
14 {
15     public static void main(String[] args)
16     {
17         // declare and initialize objects and variables
18         Rectangle rect = new Rectangle(50,50,10,15);
19         double rectWidth = rect.getWidth();
20         double rectHeight = rect.getHeight();
21         double rectArea = rectWidth * rectHeight;
22
23         // output the rectangle's area
24         System.out.println("The rectangle's area is: " + rectArea + "\n(Expected area: 150)");
25     }
26 }
27
```

Console

```
<terminated> AreaTester [Java Application] C:\Software\IBM Eclipse\eclipseDevelopmentPackage\ibm_sdk80\bin\javaw.exe (Sep 17, 2015, 6:35:13 PM)
The rectangle's area is: 150.0
(Expected area: 150)
```

8.



```
2  * Devante Wilson - 100554361
3  * September 17th, 2015
4  *
5  * OOP - Assignment 1 - Question 8
6  * Program encodes a string by replacing all letters
7  * "i" with "!" and "s" with "$"
8  * then outputs both the results
9  */
10
11 //import packages
12 import java.io.*;
13
14 public class ReplaceTester
15 {
16     public static void main(String[] args)
17     {
18         // declare and initialize object
19         String word = new String("Mississippi");
20
21         // modify string
22         word = word.replace('i', '!');
23         word = word.replace('s', '$');
24
25         // output result
26         System.out.println("New string: " + word + "\n(Expected result: M!$$!$$!pp!) ");
27     }
28 }
29
```

Console

<terminated> ReplaceTester [Java Application] C:\Software\IBM Eclipse\eclipseDevelopmentPackage\ibm_sdk80\bin\javaw.exe (Sep 17, 2015, 6:54:17 PM)

New string: M!\$\$!\$\$!pp!
(Expected result: M!\$\$!\$\$!pp!)

9. public class Reservation

```
{
    int price, route, trans = 0;

    public static void main(String[] args)
    {

    }
}
```