

Intro to Java Week 2 Coding Assignment

Points possible: 70

Category	Criteria	% of Grade
Functionality	Does the code work?	25
Organization	Is the code clean and organized? Proper use of white space, syntax, and consistency are utilized. Names and comments are concise and clear.	25
Creativity	Student solved the problems presented in the assignment using creativity and out of the box thinking.	25
Completeness	All requirements of the assignment are complete.	25

Instructions: In Eclipse, or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed. Take screenshots of the code and of the running program (make sure to get screenshots of all required functionality) and paste them in this document where instructed below. Create a new repository on GitHub for this week's assignments and push this document, with your Java project code, to the repository. Add the URL for this week's repository to this document where instructed and submit this document to your instructor when complete.

Coding Steps:

1. What do each of the following Boolean expressions evaluate to?

Boolean Expression	Answer
true && false	false
true false	true
false && false	false
true && (false true)	true
false (true && false)	false
false 1 < 5	false
5 >= 4 && 1 > 3	false
10 < 4 1 > 4	false
12 >= 2 && 1 < 24	true
"Hello".charAt(0) == 'h'	false

2. In Eclipse, create the following Boolean variables and choose what values they hold:
 - a. isHotOutside

- b. isWeekday
 - c. hasMoneyInPocket
- 3. Create the following variables (not boolean type, choose the best data type for the variable):
 - a. costOfMilk
 - b. moneyInWallet
 - c. thirstLevel (how thirsty you are on a scale of 1-10)
- 4. Using the variables you created above and Boolean operators, create variables for the following scenarios:
 - a. shouldByIcecream – this should be true if it is hot outside and there is money in your pocket
 - b. willGoSwimming – this should be true if it is hot outside and it is not a weekday
 - c. isAGoodDay – this should be true if it is hot outside, there is money in your pocket, and it is not a weekday
 - d. willBuyMilk – this should be true if it is hot outside, and thirstLevel is greater than or equal to 3, and moneyInWallet is greater than or equal to 2 times the cost of milk.

Example: If I had the variables isWeekday and isSummer and I was going to create a variable isSchoolDay, I would do something like the following:

```
boolean isSchoolDay = isWeekday && !isSummer;
```

- 5. Create a new class called Loops. In the main method of this class, create the following loops with any variables you feel are needed:
 - a. A while loop that prints all even numbers from 0 to 100
 - b. A while loop that prints every 3rd number going backwards from 100 until we reach 0
 - c. A for loop that prints every other number from 1 to 100
 - d. A for loop that prints every number from 0 to 100, but if the number is divisible by 3, it prints “Hello” instead of the number, and if the number is divisible by 5, it prints “World” instead of the number, and if it is divisible by both 3 and 5, it prints “HelloWorld” instead of the number.

Screenshots of Code:

Boolean Scenarios:

```
wk2codeassignment.java Loops.java test.java
1 |
2 public class wk2codeassignment {
3
4     public static void main(String[] args) {
5         // TODO Auto-generated method stub
6
7         //boolean variables
8         boolean isHotOutside = false;
9         boolean isWeekday = true;
10        boolean hasMoneyInPocket = true;
11
12        //other variables
13        double costOfMilk = 5.99;
14        double moneyInWallet = 20.54;
15        int thirstLevel = 9;
16
17        //scenario variables
18
19        boolean shouldBuyIcecream = isHotOutside && hasMoneyInPocket;
20        boolean willGoSwimming = isHotOutside && isWeekday;
21        boolean isAGoodDay = isHotOutside && hasMoneyInPocket && isWeekday;
22        boolean willBuyMilk = isHotOutside && thirstLevel >= 3 && (moneyInWallet >= (costOfMilk * 2))
23
24
25        //print line
26        System.out.println(shouldBuyIcecream);
27        System.out.println(willGoSwimming);
28        System.out.println(isAGoodDay);
29        System.out.println(willBuyMilk);
30    }
31 }
32
```

Loops:

```
// Loop a:
int x = 0;
while (x <= 100) {
    System.out.println(x);
    x=x+2;
}
```

```
//
// Loop b:
int y = 103;
while (y > 1) {
    y= y - 3;
    System.out.println(y);
}
```

```

//Loop c:
for (int i = 1; i <= 100; i = i +2) {
    if (i < 99) {
        System.out.println(i);
    }
    else if (i == 99) {
        System.out.println(99);
        System.out.println(100);
    }
}
//I included this else-if statement to tack on
//100 at the end as per requirements, otherwise
//code printed to 99 and terminated.

```

```

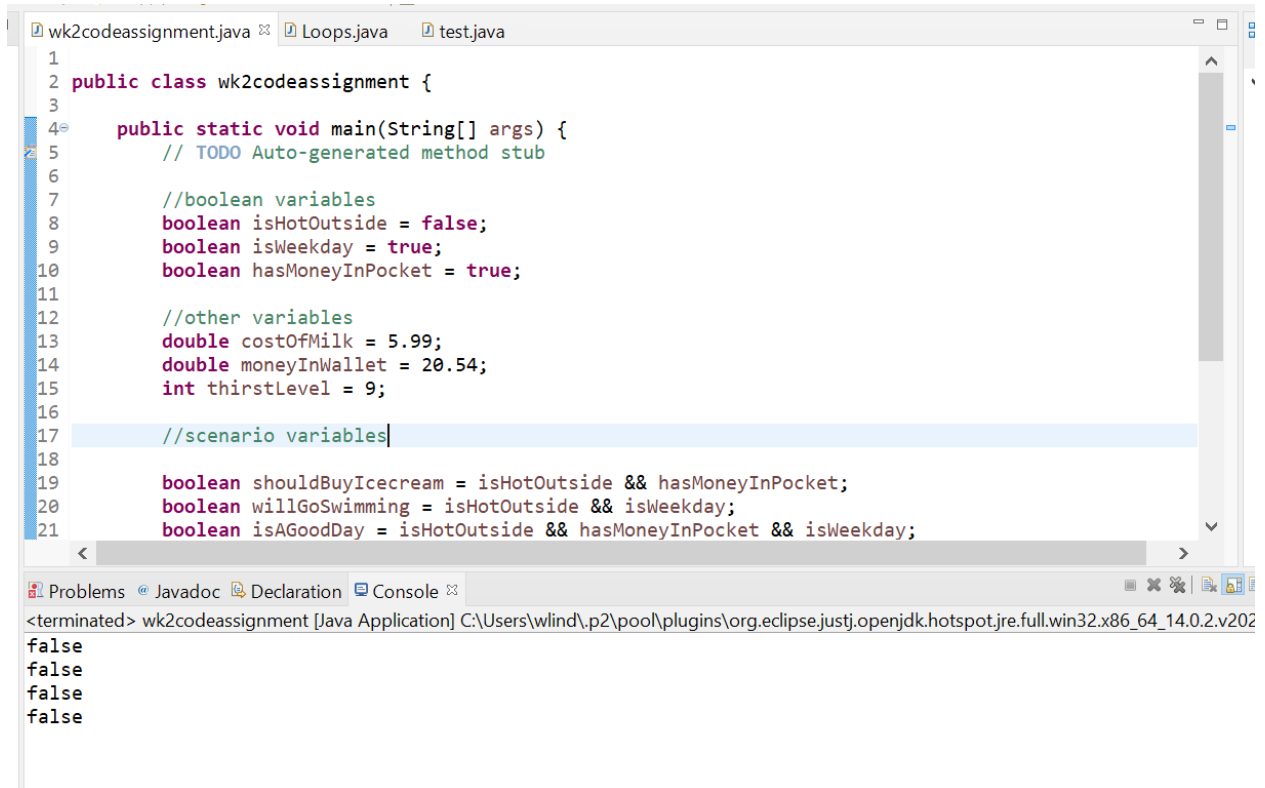
//Loop d:

for (int e = 0; e <= 100; e++) {
    if (e % 3 == 0 && e % 5 == 0) {
        System.out.println("HelloWorld");
    }
    else if (e % 3 == 0) {
        System.out.println("Hello");
    }
    else if (e % 5 == 0) {
        System.out.println("World");
    }
    else {
        System.out.println(e);
    }
}
}

```

Screenshots of Running Application:

Booleans running:



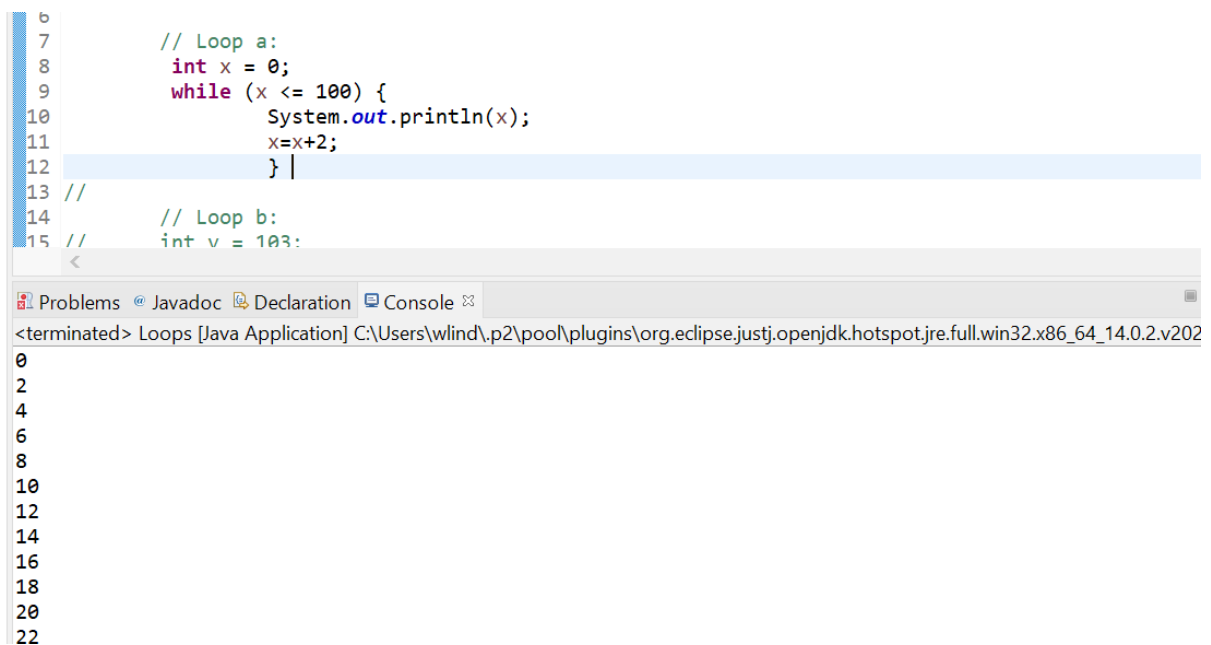
The screenshot shows the Eclipse IDE with three tabs: `wk2codeassignment.java`, `Loops.java`, and `test.java`. The `wk2codeassignment.java` tab is active, displaying the following code:

```
1 public class wk2codeassignment {
2
3
4     public static void main(String[] args) {
5         // TODO Auto-generated method stub
6
7         //boolean variables
8         boolean isHotOutside = false;
9         boolean isWeekday = true;
10        boolean hasMoneyInPocket = true;
11
12        //other variables
13        double costOfMilk = 5.99;
14        double moneyInWallet = 20.54;
15        int thirstLevel = 9;
16
17        //scenario variables
18
19        boolean shouldBuyIcecream = isHotOutside && hasMoneyInPocket;
20        boolean willGoSwimming = isHotOutside && isWeekday;
21        boolean isAGoodDay = isHotOutside && hasMoneyInPocket && isWeekday;
```

The bottom of the IDE shows the `Console` tab with the following output:

```
<terminated> wk2codeassignment [Java Application] C:\Users\wliind\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_14.0.2.v202
false
false
false
false
```

Loop A running:



The screenshot shows the Eclipse IDE with two tabs: `Loops.java` and `test.java`. The `Loops.java` tab is active, displaying the following code:

```
6
7 // Loop a:
8 int x = 0;
9 while (x <= 100) {
10     System.out.println(x);
11     x=x+2;
12 }
13 //
14 // Loop b:
15 // int v = 103;
```

The bottom of the IDE shows the `Console` tab with the following output:

```
<terminated> Loops [Java Application] C:\Users\wliind\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_14.0.2.v202
0
2
4
6
8
10
12
14
16
18
20
22
```

Loop B running:

```
14 //
15 // Loop b:
16 int y = 103;
17 while (y > 1) {
18     y = y - 3;
19     System.out.println(y);
20 }
21
22 //Loop c:
23 for (int i = 1; i <= 100; i = i + 2) {
24     if (i < 99) {
25         System.out.println(i);
26     }
27     else if (i == 99) {
28         System.out.println(i);
29     }
30 }
```

Problems Javadoc Declaration Console

<terminated> Loops [Java Application] C:\Users\wland\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_14.0.2.v202008100000\jre\bin\java.exe

100
97
94
91
88
85
82
79
76
73
70
67
64

Loop C running:

```
21 //Loop c:
22 for (int i = 1; i <= 100; i = i +2) {
23     if (i < 99) {
24         System.out.println(i);
25     }
26     else if (i == 99) {
27         System.out.println(99);
28         System.out.println(100);
29     }
}
```

Problems @ Javadoc Declaration Console

<terminated> Loops [Java Application] C:\Users\wbind\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64

1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31

Loop D running:

```
35 //Loop d:
36
37
38 for (int e = 0; e <= 100; e++) {
39     if (e % 3 == 0 && e % 5 == 0) {
40         System.out.println("HelloWorld");
41     }
42     else if (e % 3 == 0) {
43         System.out.println("Hello");
44     }
45     else if (e % 5 == 0) {
46         System.out.println("World");
47     }
48     else {
49         System.out.println(e);
50     }
}
```

Problems @ Javadoc Declaration Console

<terminated> Loops [Java Application] C:\Users\wbind\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_14.0.2

HelloWorld
1
2
Hello
4
World
Hello
7
8
Hello
World

URL to GitHub Repository:

<https://github.com/wlindstrom55/week-2-assignments>