CS 1324 Spring 2021 Homework 4 Conditional Statements

Jordan McFadden

TOTAL POINTS

20 / 20

QUESTION 1

Question 1 12 pts

1.1 Question 1a 3 / 3

✓ **- 0 pts Correct**

- 1 pts No change after 45, since condition is true for the if, else won't be executed.

- 1.5 pts page>45 is true, so page will be set to 45. Hence initially 67, then 45

- 0 pts Initial value 67 was not listed

- 0.5 pts Should have been 45, not 47

- 0 pts page>45 is true, so page will be set to 45. Hence initially 67, then 45 (only 2 entries in the table)

1.2 Question 1b 3 / 3

✓ **- 0 pts Correct**

- 0 pts Listing 3 for temp once is sufficient

- 0 pts Repeating unchanged values is not required in a column

- 0 pts Initial values for lower and upper were not listed

- 0.5 pts 3 will be the initial value for temp

- 3 pts Incorrect

- 2 pts Incorrect

- 1 pts Partially correct

- 0.5 pts 3 will be the initial and final value for temp

1.3 Question 1c 3 / 3

✓ **- 0 pts Correct**

- 0.5 pts 82 is value of score, not of grade.

- 1.5 pts Partial

- 0 pts "D" will be the initial value for grade, nothing before that

- 3 pts Incorrect

1.4 Question 1d 3 / 3

✓ **- 0 pts Correct**

- 0 pts Initial value 0.0 was not listed

- 0 pts Arithmetic error, should have been 63.4

- 0.5 pts Arithmetic error, should have been 63.4 (25.3+38.1)

- 3 pts Incorrect

- 2 pts Only initial value is listed

- 1 pts No change after 63.4, once an if is true the else is not evaluated

- 2 pts Partial

- 0 pts Repeating unchanged values is not required

QUESTION 2

Question 2 8 pts

2.1 Question 2a 4 / 4

✓ **- 0 pts Correct**

- 0.5 pts Incorrect value for largest

- 4 pts producing correct answer here

- 4 pts Incorrect

- 2 pts these values are producing right answer

- 4 pts Not answered

2.2 Question 2b 4 / 4

✓ **- 0 pts Correct**

- 2 pts Partial

- 4 pts Incorrect

- 4 pts Not answered

- 0.5 pts Minor mistake

Homework 4: Conditional Statements and Relational Operators

CS 1323/4 Spring 2021

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1. (12 points; 3 points for each part) For each part below, trace the execution of the statement by filling out the table on the right. Every change of the variable's contents should be listed, including its initial assignment. Tables may contain blank lines.

a)

```
int page = 67;
if (page > 45)
{
        page = 45;
}
else
{
        page = 1;
}
```

page
67
45

b)

```
int lower =  3;
int upper = -4;
if (upper > lower)
{
        lower = upper;
} else if (upper ==  lower)
{
        upper = lower;
}
else
{
        int temp;
        temp = lower;
        lower = upper;
        upper = temp;
}
```

lower	upper	temp
3	-4	3
-4	3	

c) Read this one especially carefully.

grade
D

```
int score = 82;
String grade;
if (score > 60)
{
        grade = “D”;
}
else if (score > 70)
{
        grade = “C”;
}
else if (score > 80)
{
        grade = “B”;
}
else
{
        grade = “A”;
}
```

d)

left
0.0
63.4

```
double center = 25.3;
double height = 38.1;
double left = 0.0;
final double BOUND = 20.0;

if (center <= 50)
{
        if (height > center)
        {
                left = center + height;
        }
        else
        {
                left = center – height;
        }
}
else if (height < 2*center)
{
        if (height < center)
        {
                left = center – BOUND;
        }
}
```

2. (8 points; 4 points for a), 4 points for b))
The code below is supposed to set the variable largest to the largest of three values: value1, value2, and value3. For example, if value1 is 7 and value2 is 5 and value3 is 9, largest should be set to 9. It is not correct.

a) Find one assignment for value1, value2 and value3 that produces the wrong answer.

```
double value1, value2, value3;
double largest;

if (value1 > value2)
{
        if (value1 > value3)
        {
                largest = value1;
        }
        else
        {
```

The answer is wrong when (fill in below)

value1 is: 0.0

value2 is: 0.0

value3 is: -2.0

largest is: -2.0

```
                largest = value3;
        }
}
else if (value2 > value1)
{
        if (value2 > value3)
        {
                largest = value2;
        }
        else
        {
                largest = value3;
        }
}
else
{
        largest = value3;
}
```

b) Rewrite this code using the max method from the Math class. You will need to call the method more than once. Remember that there is no max method in the Math class that has three parameters.

```
double temp = Math.max(value1, value2);
largest = Math.max(temp, value3);
System.out.println(largest);
```