CS 1324 Spring 2021 Homework 6 While Loops

Jordan McFadden

TOTAL POINTS

20 / 20

QUESTION 1

1 1a 4 / 4

✓ - **0 pts** Correct

- **0 pts** Arithmetic error

- **0 pts** Missing initial accum

- **0 pts** Missing initial count

- **0 pts** Missing final count

- **0 pts** Arithmetic error

- **0 pts** Improper use of accum

- **1 pts** Missing final accum

- **4 pts** Incorrect

QUESTION 2

2 1b 4 / 4

- **0 pts** Correct

✓ - **0 pts** Not 3 iterations (excluding initial state)

- **0 pts** Missing initial state

- **1 pts** Missing infinite loop

- **4 pts** Incorrect

- **0 pts** Other

- **0 pts** Arithmetic Error

QUESTION 3

3 1c 4 / 4

✓ - **0 pts** Correct

- **0 pts** Missing initial state

- **0 pts** Arithmetic error

- **0 pts** Missing final count

- **1 pts** While loop has more than 0 iteration(s)

- **4 pts** Incorrect

QUESTION 4

4 1d 4 / 4

✓ - **0 pts** Correct

- **0 pts** Missing first accum/data

- **0 pts** Arithmetic error

- **0 pts** Missing last accum/data

- **1 pts** Error in accum

- **4 pts** Incorrect

QUESTION 5

5 1e 4 / 4

- **0 pts** Correct

✓ - **0 pts** Not 3 iterations (excluding initial state)

- **0 pts** Missing initial state

- **1 pts** Missing infinite loop

- **4 pts** Incorrect

- **0 pts** Arithmetic Error

Homework 6: While Loops

CS 1323/4 Spring 2021

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1. (20 points; 4 points each) Trace the loops in the tables to the right of the code. If the loop is an infinite loop, trace three iterations and write "infinite loop."

a)

```
int accum = 260;
int count = 1;
while (count <= 4)
{
        count = count + 1;
        accum = accum / count;
}
```

accum	count
260	1
130	2
43	3
10	4
2	5

b)

```
int accum = 1;
int count = 3;
while (accum != 19)
{
        accum = accum * 2;
        count = count + 3;
}
```

accum	count
1	3
2	6
4	9
Infinite	loop

c)

```
double value = 62.1;
int count = 0;
final double LOWER_RANGE = 20.0;
final double UPPER_RANGE = 50.0;
while (LOWER_RANGE <= value && value <= UPPER_RANGE)
{
        count = count + 1;
        value = value – 5.0;
}
```

value	count
62.1	0
value > 50	no loop

d) The user entered the input below in the console window:

-1 -5 -7 -9 -12 5

```
Scanner keyboard = new Scanner(System.in);
final int SENTINEL = 5;
int accum = 0;
int data = 0;
while (data != SENTINEL)
{
        data = keyboard.nextInt();
        accum = accum + Math.abs(data);
}
keyboard.close()
```

accum	data
0	0
1	-1
6	-5
13	-7
22	-9
34	-12
39	5

e)

```
int sum = 0;
int data = 9;
while (sum > 0 || data <= 100)
{
        sum = sum + data;
        data = data * 2;
}
```

sum	data
0	9
9	18
27	36
infinite	loop