CS 1324 Spring 2021 Homework 3 User Interactions

Jordan McFadden

TOTAL POINTS

16 / 20

QUESTION 1

Question 1 10 pts

1.1 Question 1a 2 / 2

✓ **- 0 pts Correct**

- 1 pts Math.min method is not used propely used.

- 2 pts Proper variable names are not used for the argument(s) and assignments

1.2 Question 1b 2 / 2

✓ **- 0 pts Correct**

- 0 pts The result is not cast to an integer.

- 1 pts Math.floor() is not used properly.

1.3 Question 1c 2 / 2

✓ **- 0 pts Correct**

- 0 pts The result is not cast to an integer.

- 1 pts Math.round method is not used properly.

1.4 Question 1d 2 / 2

✓ **- 0 pts Correct**

- 1 pts Math.random() should be used.

- 1 pts Not multiplied by 20

1.5 Question 1e 2 / 2

✓ **- 0 pts Correct**

- 0 pts The result is not cast to an integer.

- 1 pts Math.ceil method is not used

- 2 pts Blank submission

QUESTION 2

2 Question 2 6 / 10

- 0 pts Correct

- 1 pts No Scanner declared

- 1 pts Scanner object not constructed

- 2 pts No String input

- 1 pts No int input

✓ **- 2 pts No double input**

✓ **- 1 pts Input read in incorrect order**

✓ **- 1 pts Precipitation not added**

- 1 pts Newlines not read in

- 10 pts Blank or performed output instead of input

- 1 pts The header not read in

- 10 pts Incorrect

For this question, we assume that the user will enter the data in the order shown in the question. Therefore, we need to read data using Scanner class in exact same order as the question row-wise. We need to read the header first using nextLine methods. Then, for the first, second, and third lines, the data should be read in the following format: read the first String using next() method, precipitation amount using nextDouble, start and stop using nextInt, and finally read the last the string and switching to the next line using nextLine method. Finally, the precipitation amounts are summed up.

Homework 3: User Interactions

CS 1323/4 Spring 2021

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1. (10 points; 2 points each) Write a line or two of code that uses the variables below, methods in the Math class, and math operations to perform the given operations. Be sure that you read the method signatures in the Math class carefully (especially the return types), because some are different than what you might expect.

```
int kauai; // value given elsewhere
int oahu; // value given elsewhere
int maui; // value given elsewhere
double molokai; // value given elsewhere
double lanai; // value given elsewhere
```

a. Find the smaller of the values kauai and oahu and store it in maui.

```
maui = Math.min(kauai, oahu);
```

b. Find the first integer that is smaller than molokai and store it in kauai. For example, if molokai contained 2.8, kauai should contain 2.

```
kauai = (int)Math.floor(molokai);
```

c. Round lanai to the nearest integer and store it in oahu.

```
oahu = (int)Math.round(lanai);
```

d. Store a random number between 0 and 20 in molokai.

```
molokai = (Math.random()*20);
```

e. Find the first integer that is larger than molokai and store it in kauai. For example, if molokai contained 2.8, kauai should contain 3.

```
kauai = (int)Math.ceil(molokai);
```

2. (10 points) The data below represents one way that weather data can be communicated. The top line is a header that describes the data. The leftmost entry is the type of precipitation. The next entry is the amount of precipitation. The two entries after that are the time the precipitation started and stopped, rounded to the nearest hour on a 24 hour clock. The last entry on each line is the date. Data in this exact format (but not necessarily the same exact data) are entered into your program using the keyboard.

Precip	Amount	Start	Stop	Date
Rain	2.5	8	14	12/17/19
Snow	4.7	5	9	12/18/19
Snow	0.4	21	23	12/19/19

If you know there four lines of data in this format but don't know what the data is (do not assume it is the data above), write a few lines of code that will read in the data from the keyboard and print out how much precipitation fell those three days on the console. To do this, you will need to read in all of the data, even the data that you don't need. Then perform arithmetic only on the data under the Amount header. Remember to read in the header too. I've put some comments in below to help.

```
// Read in header
import.java.util.Scanner; // class and main statement would go below.
System.out.println("Precip   " + "Amount     " + "Start   " + "Stop   " + "Date");



// Read in first line of data
Scanner scan = new Scanner(System.in);
String type = scan.next();
scan.nextLine();
double  amount = scan.nextDouble();
scan.nextLine();



// Read in second line of data
double tempHour = scan.nextDouble();
scan.nextLine();
int hour = (int) Math.round(tempHour);
int month = (int)(Math.random()* 12);
int year = (int)(Math.random()*99);
int day = (int)(Math.random()*31);


// Read in third line of data


//Would use different variables 3 times to store the scanner values and then print it out to the screen in the format above (day would have if then branches depending on the month because some months don't reach 31 days)



// Calculate the amount of precipitation and print out on console
```