wk1-finalQuiz

Saturday, December 12, 2020 3:48 PM

✓ **Congratulations! You passed!**

TO PASS 80% or higher

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GRADE 100%

Earthquakes: Programming and Interfaces

LATEST SUBMISSION GRADE

100%

Earthquakes: Programming and Interfaces

TOTAL POINTS 12

1. For the assignment you wrote the method **quakesOfDepth** to print all the earthquakes from a data source whose depth is between a given minimum and maximum value, and also to print out the number of earthquakes found. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) for quakes with depth between -12,000.0 and -10,000.0, exclusive. 1 point

   How many such earthquakes are there?

   127

2. For the assignment you wrote the method **quakesOfDepth** to print all the earthquakes from a data source whose depth is between a given minimum and maximum value, and also to print out the number of earthquakes found. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) for quakes with depth between -4000.0 and -2000.0, exclusive. 1 point

   How many such earthquakes are there?

   157

3. For the assignment you wrote the method **quakesByPhrase** to print all the earthquakes from a data source whose title has a phrase in it at a specified location, and also to print out the number of earthquakes found. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) for quakes with the phrase "Quarry Blast" at the start of the earthquake's title. 1 point

   How many such earthquakes are there?

   19

4. For the assignment you wrote the method **quakesByPhrase** to print all the earthquakes from a data source whose title has a phrase in it at a specified location, and also to print out the number of earthquakes found. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) for quakes with the phrase "Alaska" at the end of the earthquake's title. 1 point

How many such earthquakes are there?

364

5. For the assignment you wrote the method **quakesByPhrase** to print all the earthquakes from a data source whose title has a phrase in it at a specified location, and also to print out the number of earthquakes found. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) for quakes with the phrase "Can" as a substring anywhere in the earthquake's title. 1 point

How many such earthquakes are there?

58

6. For the assignment you wrote the method **findLargestQuakes** to print a given number of earthquakes from a data source in order from largest magnitude. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) for the 20 earthquakes with the largest magnitude. 1 point

What was the magnitude of the 20th largest earthquake?

5.10

7. For the assignment you wrote the method **findLargestQuakes** to print a given number of earthquakes from a data source in order from largest magnitude. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) for the 50 earthquakes with the largest magnitude. 1 point

What country had the 50th largest earthquake?

- ○ Kyrgyzstan
- ○ Solomon Islands
- ◉ Japan
- ○ Indonesia
- ○ Greece

8. For the assignment you wrote the method **quakesWithFilter** in the class EarthQuakeClient2 to filter earthquakes using two criteria. Modify that criteria to be those that are 1,000,000 meters (1,000 km) from Denver, Colorado whose location is (39.7392, -104.9903), and that end with an 'a' in their title (for example, that might be an earthquake in Nevada as that ends in 'a'). Run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes). You should also print out the number of such earthquakes found. 1 point

How many such earthquakes are there?

74

9. For the assignment you wrote the method **quakesWithFilter** in the class EarthQuakeClient2 to filter earthquakes using two criteria. Modify that critieria to be magnitude between 3.5 and 4.5 inclusive and depth between -55,000.0 and -20,000.0 inclusive. Run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) with this criteria. You should also print out the number of such earthquakes found. 1 point

How many such earthquakes are there?

15

10. For the assignment you wrote the method **testMatchAllFilter** in the class EarthQuakeClient2 to filter earthquakes using three criteria. Modify that criteria to be those with magnitude between 1.0 and 4.0 inclusive, to test the depth between -180,000.0 and -30,000.0 inclusive, and if the letter "o" is in the title. Modify this method to run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) with the same criteria. You should also print out the number of such earthquakes found. 1 point

How many such earthquakes are there?

187

11. For the assignment you wrote the method **testMatchAllFilter2** in the class EarthQuakeClient2 to filter earthquakes using three criteria. Modify that criteria to be those with magnitude between 0.0 and 5.0 inclusive, to test for the distance from Billund, Denmark at location (55.7308, 9.1153) is less than 3,000,000 meters (3000 km), and if the letter "e" is in the title. Run your program on the file **nov20quakedata.atom** (a file with information on 1518 quakes) with the same criteria. You should also print out the number of such earthquakes found. 1 point

How many such earthquakes are there?

17

12. Suppose one adds the **getName( )** method to the Filter interface and adds a String parameter to the constructor of all the classes that implement a Filter to include the name of the Filter. Suppose one then creates the following code segment after reading in earthquake data into the ArrayList of QuakeData called **list**. 1 point

```
1  MatchAllFilter maf = new MatchAllFilter();
2  maf.addFilter(new MagnitudeFilter(3.0,5.0,"Magnitude"));
3  Location city = new Location(51.7308,-34.1153);
4  maf.addFilter(new DistanceFromFilter(3000*1000, city, "Distance"));
5  maf.addFilter(new PhraseFilter("any", "i", "Phrase"));
6  System.out.println("Filters used are: " + maf.getName());
```

There are no compile errors—the DistanceFromFilter class includes "implements Filter" in the first line of the class definition, the program runs and the output is:

Filters used are: Magnitude null Phrase

Which of the following is most likely the error as to why "null" was printed instead of Distance?

- ○ There was not a **getName( )** method in the DistanceFromFilter class.
- ○ The **getName( )** method in the MatchAllFilter class had a logic error in it.
- ○ The **filter** method in the EarthQuakeClient2 class has a logic error.
- ◉ In the DistanceFromFilter class, a private variable for the name was not assigned the value of the parameter representing the name of the filter in the Constructor method.