

Homework – Java 006

Lambdas

Root folder: java_training/assignments/java_006/lambda

Assignments

- Basic Sorting
- Head of Tail
- Game of Dice
- String Array Utilities

Basic Sorting

folder: basicsorting

Quick Description

Using lambdas, create a simple sort method, and try it on 2 different types of arrays, one of integers and one of strings.

```
int[] numArr = { 10, 3, 4, 15, 7, 9, 1, 21 };
```

```
String[] strArr = { "claude", "Phil", "lois", "clark", "Arthur", "Mera", "bruce" }
```

The features of your lambdas are as follows:

- 1) can use generics
- 2) can take a parameter which allows for sorting asc/desc direction (asc = ascending and desc = descending) ← read up on these terms online if you are unfamiliar
- 3) if detecting a String, can take an optional 3rd parameter which can sort case sensitive, case insensitive

So, you will sort the numArr in both asc and desc output

You will sort the strArr in both asc and desc output, but will also ensure that for each direction, you will have case sensitivity on or off.

Ensure your output follows this type of template:

Initial Integer Array: { 10, 3, 4, 15, 7, 9, 1, 21 };

Sorted ASC: (...);

Sorted DESC: (...);

Initial String Array: { "claude", "Phil", "lois", "clark", "Arthur", "Mera", "bruce" }

Sorted ASC and CASE SENSITIVITY ON: (....);

Sorted ASC and CASE SENSITIVITY OFF: (....);

Sorted DESC and CASE SENSITIVITY ON: (....);

Sorted DESC and CASE SENSITIVITY OFF: (....);

Hint: Info on optional parameters in Java 8 lambda expressions:

<http://sososoftware.blogspot.com/2015/07/title.html>

Head of Tail

folder: headortail

Quick Description

Using lambdas, create a program to write is to display “The Coin Flip is: Head” or “The Coin Flip is: Tail” every time it executes.

You will keep a loop where typing Q or q will quit.

Expected Lambdas

One lambda will create a method that returns a random number which will be a whole integer between 1 and 2 inclusively

The other lambda will take the value from the previous one and wil assign “Head” is 1 is passed and “Tail” is 2 is passed.

App features

As such expect that the program works as follows:

Output and Interactions

INIT: “Welcome to the game of Head or Tail where you will flip your life away!”

FIRST PASS: “Press the F key and flip your luck!”

CONDITIONAL OUTPUT: “The coin flip is: Head!” <or> “The coin flip is: Tail!”

END OR CONTINUE: “Press the F key to try again, press Q or q to Quit”

if Q or q:

 “Thank you for playing” .

else

 CONDITIONAL OUTPUT: “The coin flip is: Head!” <or> “The coin flip is: Tail!”

 END OR CONTINUE: “Press the F key to try again, press Q or q to Quit”

Game of Dice

folder: gameofdice_refactored

Quick Description

Refactor your Assignment 7: Game of Dice code that you did initially as part of your Homework Java 001 assignments. This was initially saved as "Assignment07_GameOfDice"

You will be refactoring to take advantage of lambdas in your code. The functionality and the app will work with identical expectations. No change in the functionality of the program.

When storing your app, ensure you also provide the original app as well, therefore so that it can easily be compared.

String Array Utilities

folder: stringarrayutilities_refactored

Quick Description

Refactor your Assignment 8: String Array Utilities code that you did initially as part of your Homework Java 001 assignments. This was initially saved as "Assignment08_StringArrayUtilities"

You will be refactoring to take advantage of lambdas in your code. The functionality and the app will work with identical expectations. No change in the functionality of the program.

When storing your app, ensure you also provide the original app as well, therefore so that it can easily be compared.