Programming Fundamentals II – Java

Lab #3 – Flow of Control

NAME _____

- **Problem:** Write a program that will display a weight conversion table. The user will input the beginning weight in pounds, the ending weight in pounds, and the weight (pounds) increment for display in the table. The program should then convert and display the weight. The formula for the conversion is as follows:

1 pound = 0.454 kilograms

Your program should make use of the Scanner class or the JOptionPane class, whichever you **DID NOT** use for Lab-2. Use the same class for **BOTH input and output**.

Also, make sure to use formatting with the output. That is, be consistent with the number of decimal places used (2, 3, or 4). Hint, use the DecimalFormat class.

Working on the Lab:

- Create a folder with your name as the name of the folder (YourLastName)
- In your favorite IDE, begin work on the lab.
  - Use the folder as the source/destination of the project/files
- When finished working the lab, 'zip' the folder into ONE file
- Go into Canvas and submit the lab as usual using the 'zip' file.

Requirements: You will submit the following with this lab:

Face-to-face classes:

a. A copy of the cover page – submitted in class.

b. A printout of source code (program listings). Staple the two together.

All sections:

Submit through Canvas as normal

Output should be as follows:

> Left border, weight in pounds, formatted value, vertical line, weight in kilograms, vertical line, formatted value, vertical border

```
Pounds        Kilograms
----------------------------
|   1.000     |     0.454    |
|   etc.      |       etc.   |
          . . . .
| 100.000  |    45.400    |
----------------------------
```

Algorithm:

- Perform program setup and initializations
- Prompt the user and input the starting weight amount, in pounds.
- Prompt the user and input the ending weight amount, in pounds.
- Prompt the user and input the weight increment, in pounds.
- Print out the table header
- Loop through the range of weights and generate the table
    - Calculate the corresponding weight in kilos.
    - Display/output the two weights
    - Increment to the next weight value
    - Proceed with another iteration of the loop
- Terminate the program.
- Test, test, test, and test some more.
- And when you're done, test it again.