ISM3230 In-class lab Module 3 – Working with Expressions Fall 2015

FOCUS TOPICS

- Constants
- Simple input and output
- Simple mathematical expressions

TASK

Your task is to convert an input length in meters to the equivalent measure as a combination of whole yards, feet, and inches. As output, report the number of yards, feet, inches, and any leftover centimeters not accounted for as yards, feet, or inches.

1. Create a new NetBeans project.
2. Create three named constants with literal values based on the table below. Use the appropriate variable type:

Constant represents:	What it should store
The number of inches per foot.	12
The number of feet per yard.	3
The number of centimeters per inch.	2.54

3. Based on those three literal-valued constants, create an additional two named constants for the following measures:
    - The number of centimeters per foot
    - The number of centimeters per yard
4. **Hints about constants**: In your code, constants should be declared outside the main method, below the class declaration and above the main method. Also, you can define constants that are based on other constants. For example, you should let the program calculate the number of centimeters per foot and per yard.
5. The rest of your code goes in the main method, as described in the next set of steps.
6. Prompt the user to enter a length in meters as a floating point value.
    - **Hint:** Look at the Module 1 slides from week 2 for examples of text output.
7. Store the input value in a double typed variable
    - **Hint:** Use the Scanner example from the Module 1 slides from week 2. You will need to add an import statement for the Scanner class at the top of your code, below the package line.
    - **Hint:** Based on the example from the Module 1 slides, instead of using the nextInt() method of the Scanner class, you should use the nextDouble() method.
8. Convert meters to centimeters, and store the result to a double typed variable. There are 100 centimeters in a meter.
9. Find the number of yards, and store the value in an integer variable.
    - **Hint:** You can do the cast with the help of an intermediate variable, or you can cast the result of the expression before assigning to a variable.
10. For the leftover centimeters, find the number of feet, and store the value in an integer variable.

11. For the leftover centimeters, find the number of inches, and store the value in an integer variable. Then find the leftover centimeters that remain after the last operation.
12. Following the sample output below, show the number of yards, feet, inches, and remaining centimeters for the input meters.
13. When your code is working, upload your .java file to the Module 2, week 3 in-class lab dropbox.

Sample output:

```
run:
Enter length in meters (as a double):
1.67
Truncated to the closest inch:
Yards: 1
Feet: 2
Inches: 5
Left over (cm): 1.9000000000000012
BUILD SUCCESSFUL (total time: 6 seconds)
```

```
Enter length in meters (as a double):
567
Truncated to the closest inch:
Yards: 620
Feet: 0
Inches: 2
Left over (cm): 2.1200000000014096
BUILD SUCCESSFUL (total time: 3 seconds)
```

```
run:
Enter length in meters (as a double):
0.33657
Truncated to the closest inch:
Yards: 0
Feet: 1
Inches: 1
Left over (cm): 0.6369999999999996
BUILD SUCCESSFUL (total time: 9 seconds)
```