

# ITEC 4261 JAVA Programming

2024 Spring

## Assignment #3

(Due date: Feb. 23, 23:59pm EST)

### Important Notes:

1. Write a program of each question and **submit all source code files (.java files) of each question. If you do not submit the source code files (.java files), you will have 0 points.**
2. **Submit screen captures of each program outputs** using Microsoft Word document. Name the assignment as *Lastname.Firstname\_Assignment1* (e.g. Joobum.Kim\_Assignment1.docx)

### Problems:

1. Solve **Question 35 (Summation)** in **Programming Exercises** in **Chapter 5**. (Page 200, 50 points)
2. Solve the following question below. (50 points)

Write a program that asks the user to enter a distance in meters. The program will then present the following menu of selections:

1. Convert to kilometers
2. Convert to inches
3. Convert to feet
4. Quit the program

The program will convert the distance to kilometers, inches, or feet, depending on the user's selection. Here are the specific requirements:

- Write a void method named `showKilometers`, which accepts the number of meters as an argument. The method should display the argument converted to kilometers. Convert the meters to kilometers using the following formula:

$$\text{kilometers} = \text{meters} * 0.001$$

- Write a void method named `showInches`, which accepts the number of meters as an argument. The method should display the argument converted to inches. Convert the meters to inches using the following formula:

$$\text{inches} = \text{meters} * 39.37$$

- Write a void method named `showFeet`, which accepts the number of meters as an argument. The method should display the argument converted to feet. Convert the meters to feet using the following formula:

$$\text{feet} = \text{meters} * 3.281$$

- Write a void method named menu that displays the menu of selections. This method should not accept any arguments.
- The program should continue to display the menu until the user enters 4 to quit the program.
- The program should not accept negative numbers for the distance in meters.
- If the user selects an invalid choice from the menu, the program should display an error message.

Here is an example session with the program, using console input. The user's input is shown in bold.

Enter a distance in meters: 500 [Enter]

1. Convert to kilometers
2. Convert to inches
3. Convert to feet
4. Quit the program

Enter your choice: 1 [Enter]

500 meters is 0.5 kilometers.

1. Convert to kilometers
2. Convert to inches
3. Convert to feet
4. Quit the program

Enter your choice: 3 [Enter]

500 meters is 1640.5 feet.

1. Convert to kilometers
2. Convert to inches
3. Convert to feet
4. Quit the program

Enter your choice: 4 [Enter]

Bye!