Lab worksheet 1: Introduction

Instructions

1. Create a Java project in IntelliJ within your folder and name it using your student number in the following formats: **"OOP_CS_2022_XXX" or "OOP_ET_2022_XXX"**. (Eg: OOP_CS_2022_001, OOP_ET_20222_007)
2. Create distinct packages for each lab worksheet, naming them in the following format "**LW_XX**." (Eg: LW_01)
3. Create distinct classes for each question, naming them "**QX**." (Eg: Q1)
4. Upload your project files to your GitHub repository.

Questions

1. Write a program that accepts an odd-length word and prints out the middle character. For example, if the input is magnificent, which has 11 characters, you output the sixth character f.

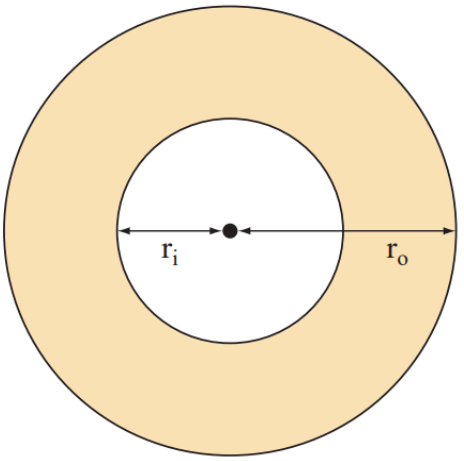
2. Write a program that asks the user for her or his full name in the format **first middle last** and replies with the name in the format **last, first middle-initial**. where the last name is followed by a comma and the middle initial is followed by a period. For example, if the input is **Antony Edward Stark** then the output is **Stark, Antony E**.

3. Write a Java program to convert centimetres (input) to feet and inches (output). (**1 inch 2.54 cm**)

4. Write a Java program that displays a frame window 300 pixels wide and 200 pixels high with the title **My First Frame**. Place the frame so that its top left corner is at a position 50 pixels from the top of the screen and 100 pixels from the left of the screen.

    - To position a window at a specified location, you can use the **setLocation** method like this, `frame.setLocation( 50, 50 );`
    - Through experimentation, determine how the two arguments in the setLocation method affect the positioning of the window.

5. Write a Java program that computes the area of a circular region (the shaded area in the diagram), given the radii of the inner and the outer circles, ri and ro, respectively. We compute the area of the circular region by subtracting the area of the inner circle from the area of the outer circle. Define a **Circle** class that has methods **computeArea** and



computeCircumference to compute the area and circumference. You set the circle's radius with the **setRadius** method or via a constructor.