Lab worksheet 2: Introduction

Instructions

1. Create a Java project in IntelliJ within your folder and name it using the Lab worksheet number and your student number in the following format: **“LW_XX_CS_2022_XXX”.**
2. Create distinct classes for each question, naming them "**Q_XX**."
3. Upload your project files to your GitHub repository.

Questions

1. Write a Java program to print out the numbers 10 through 49 in the following manner,

   ```
   10 11 12 13 14 15 16 17 18 19
   20 21 22 23 24 25 26 27 28 29
   30 31 32 33 34 35 36 37 38 39
   40 41 42 43 44 45 46 47 48 49
   ```

2. Write a method that returns the number of digits in an integer argument; for example, 23,498 has five digits. Using this method, write a Java program that repeatedly asks for input and displays the number of digits the input integer has. Stop the repetition when the input value is negative.

3. Write a Java program that prints a pattern of asterisks in the shape of a pyramid. The user should enter the number of rows in the pyramid.

4. Write a Java program that accepts five numbers as input from the user, stores them in an integer array, and then determines and displays the second-largest element.

5. Write a Java program that checks whether a given sentence is a palindrome. To do this, you need to:

   - Use a StringTokenizer to split the sentence into words.
   - Ignore punctuation and spaces when checking for palindromes. For example, "A man, a plan, a canal, Panama!" should be considered a palindrome.
   - Convert each word to lowercase for case-insensitive comparison.
   - Output whether the sentence is a palindrome or not.

6. Write a program to display today’s date in this format: 14 September 2025. Use the console window for output.

7. Repeat Exercise 6, but this time use this format: Sunday, September 14, 2025