

## Lab worksheet 5: Repetition Statements

### Instructions

1. Create a folder and name it using your student number in the format **"CT\_2021\_XXX"**.
2. Create a Java project in IntelliJ inside your folder and name it using the Lab worksheet number in the format **"LW\_XX"**.
3. Create separate Packages for each question and name them with their question number in the format **"Q\_XX"**.
4. Create a Word document and name it using your student number and the lab worksheet number in the format **"CT\_2021\_XXX\_LW\_XX"**.
5. Add a screenshot of your outputs for each question in the Word document, along with the codes for each question.
6. Create a repository in your GitHub and name it using your student number, and upload your project files and the Word document.

### 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 the multiplication table for a given number N. The table should display the multiplication of N with numbers from 1 to 10.
4. Write a Java program that prints a pattern of asterisks in the shape of a pyramid. The number of rows in the pyramid should be entered by the user.
5. Write a Java program that prompts the user to enter a word or phrase and determines if it is a palindrome. A palindrome is a word, phrase, number, or other sequence of characters that reads the same forward and backward.

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6. Write a Java program that generates a random number between 1 and 100 and asks the user to guess it. The program should provide feedback (higher or lower) until the user guesses the correct number.
7. Write a Java program that takes a sentence as input and replaces every occurrence of a specific word with another word. The program should prompt the user for the word to be replaced and the replacement word.