

Java module 2

Exercises Day 2

1.1 - Arrays	Find the maximum
Instructions	Write a function that finds the maximum number in an array of integers. Then use this function in a program that requests 5 integers to the user, stores them in an array and outputs the maximum.
Expected output	Number 1: >>> 9 Number 2: >>> 167 Number 3: >>> -43 Number 4: >>> 33 Number 5: >>>63 The maximum is 167

1.2 - Lists	Store names
Instructions	Write two functions: <ul style="list-style-type: none">- The first one should request names from the user, store them in a list and return this list.- The second one should receive a list as a parameter and print the names stored within the list. Then write a program that will call both functions.
Expected output	How many names would you like to store? >>> 3 Name 1: >>> Ana Name 2: >>> Carol Name 3: >>> John The names are Ana, Carol, John

2 Linear search	Search for a number
Instructions	Create a variable with the following array: <code>int[] myArray = {1, 92, 23, 404, 5, 1027};</code> Create a function that receives an array of integers and one integer to search as parameters. The function should return the position of the integer in the array if it is found, or -1 if not found.

	Create a program that asks the user to input a number and replies with the position of the number in myArray.
Expected output 1	Enter a number: >>> 23 The number is in position 2
Expected output 2	Enter a number: >>> 17 The number was not found

3 Sorting	Sort an array of numbers
Instructions	Create a variable with the following array: <code>int[] myArray = {1, 92, 23, 404, 5, 1027, -20, -3, 209};</code> Create a program that is able to sort myArray using Bubble sort, Selection sort or Insertion sort.
Expected output	The sorted array is: -20, -3, 1, 5, 23, 92, 209, 404, 1027

4.1 Streams	Filter an array
Instructions	Create a variable with the following array: <code>int[] numbers = {1, 92, 23, 404, 5, 1027, 20, 115, 119, 120};</code> Create a program that is able to filter the array in order to print only the even numbers.
Expected output	The even numbers are: 92, 404, 20, 120

4.2 Streams	Apply a function
Instructions	Create a variable with the following array: <code>String[] words = {"java", "stream", "api"};</code> Create a program that is able to convert all words to uppercase.
Expected output	The uppercase words are: JAVA, STREAM, API

4.3 Streams	Remove duplicates
Instructions	Create a variable with the following array: <code>int[] numbers = {1, 2, 2, 3, 4, 4, 5};</code> Create a program that is able to remove duplicates from the array of integers.
Expected output	The numbers are: 1, 2, 3, 4, 5

4.4 Streams	Sort an array
Instructions	<p>Create a variable with the following array: <code>int[] numbers = {5, 3, 4, 1, 2};</code></p> <p>Create a program that is able to sort the array of integers in ascending order.</p>
Expected output	The numbers are: 1, 2, 3, 4, 5

4.5 Streams	Filter and count
Instructions	<p>Create a variable with the following list of names: <code>List<String> names = Arrays.asList("Alice", "Bob", "Charlie", "Anna");</code></p> <p>Create a program that is able to count the number of strings in a <code>List<String></code> that start with "A".</p>
Expected output	There are 2 names that start with A