Arrays

Problem 1. Increase array members

- Write a script that allocates array of 20 integers and initializes each element by its index multiplied by 5.
- Print the obtained array on the console.

Problem 2. Lexicographically comparison

- Write a script that compares two char arrays lexicographically (letter by letter).

Problem 3. Maximal sequence

- Write a script that finds the **maximal sequence** of equal elements in an array.

Example:

input	result
2, 1, 1, 2, 3, 3, **2, 2, 2**, 1	2, 2, 2

Problem 4. Maximal increasing sequence

- Write a script that finds the maximal increasing sequence in an array.

Example:

input	result
3, **2, 3, 4**, 2, 2, 4	2, 3, 4

Problem 5. Selection sort

- Sorting an array means to arrange its elements in increasing order.
- Write a script to sort an array.
- Use the selection sort algorithm: Find the smallest element, move it at the first position, find the smallest from the rest, move it at the second position, etc.

Hint: Use a second array

Problem 6. Most frequent number

- Write a script that finds the most frequent number in an array.

Example:

input	result
4, 1, 1, **4**, 2, 3, **4**, **4**, 1, 2, **4**, 9, 3	4 (5 times)

Problem 7. Binary search

- Write a script that finds the index of given element in a sorted array of integers by using the binary search algorithm.