Home task № 5.2

Course
Programming Using Java

TOPIC: ARRAYS

Task 1

Fill an array of 15 elements with Fibonacci numbers. Output only the even elements of the array to the console.

Task 2

Fill an array of 30 elements with random numbers from -70 to +50. Find the minimum element and output it to the console. Find the maximum element and output it to the console.

Task 3

Write a program that checks whether all values of array elements are identical. Output Yes if they are identical, and No if there is at least one difference. The array is specified and initialized at the beginning of the program.

Task 4

Write a program that checks whether all values of array elements are different (they are not repeated). Output Yes if they are different and No if there is at least one repetition. The array is specified and initialized at the beginning of the program.

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Task 5

Fill an array of 10 elements with random numbers from -10 to +10. Calculate the number of duplicate values. Output only duplicate items and the number of repetitions to the console.

Example:

```
0 – 5 times
2 – 3 times
7 – 1 time
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Task 6

Fill an array of 10 elements with random numbers from -10 to +10. Count the number of unique values (occurring in the array once). Output values of unique elements and indexes, under which they are in the array, to the console.

Task 7

Fill an array of dimension n with random numbers from 3 to 13. Calculate how many times each digit occurs. Output the result to the screen. n is specified from the keyboard.

Task 8

Fill an array of dimension n with random lowercase Latin letters. Calculate how many times each letter occurs. Output letters that occur more than 3 times. n is specified from the keyboard.

Task 9

Fill an array of dimension n with random numbers from -2 to n. If there is at least one negative value in the array that is less than -1, replace all negative values in the array by the square (by the power of 2) of these values. Output the source and resultant array to the console.

Task 10

Fill an array of dimension n with random numbers from 0 to 33. Find the element of the array that is divided by the value of the element on the left and the value of the element on the right without remainder. Output values of the source array to the console. Output the index of the found element; if it is not found, output -1. n is specified from the keyboard.

Task 11

Fill an array of dimension n with words consisting of only lowercase Latin letters. The words are separated by spaces, and the number of spaces is random from 1 to 5. Calculate the total number of words in the array. n is specified from the keyboard.

Task 12

The program should output the word yes for a symmetric array and the word no for an asymmetric array. Symmetric array is an array, in which values of the elements from the end is equal to the value of elements from the beginning. The array is specified and initialized at the beginning of the program.

Examples of values for a symmetric array:

1, 2, 3, 2, 1
2, 2, 3, 2, 2
1, 3, 2, 3, 1
5, 4, 3, 4, 5