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| **INTRODUCTION TO PROGRAMMING IN C (IS-FEE-10061S)****WEEK 05** |
| **First Name** | **Last Name** | **Date** | **Points** |
|  |  | **28.03.2024** |  |

**Comments:**

* complete the data in the table above
* paste the program codes in the designed places
* send the file by the end of the day on which the next class will take place

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| **Program no. 1** |
| Declare an **N**-element array-of-int (**N** **-** a symbolic constant defined using **#define** preprocessor directive). Write a program that performs the following operations:1. write subsequent integers (1, 2, 3, …, N) in the array; print elements of the array in one line;
2. write integers (N, N-1, …, 3, 2, 1) in the array; print elements of the array in one line;
3. write pseudo-randomly generated integers in the range of 0, 9 in the array; print elements of the array in one line;
4. print array elements with odd values;
5. print array elements with even values;
6. calculate and print the sum of all elements of the array;
7. calculate and print the arithmetic mean of all elements of the array;
8. find and print the largest and smallest value in the array;
9. using the scanf() function, enter the number **x**; check if **x** exists in the array; if so, display the index of the first element equal to **x**;
10. print the number of occurrences of **x** in the array;
11. print the number of array elements less than **x** and the number of array elements more than **x**;
12. reverse the order of the array elements; print elements of the array;
13. sort the array elements in ascending order; print elements of the array in one line.

Example of program execution:**1 2 3 4 5 6 7 8 9 10****10 9 8 7 6 5 4 3 2 1****5 7 8 2 4 4 2 7 1 9****Odd elements: 5 7 7 1 9****Even elements: 8 2 4 4 2****Sum: 49****Mean: 4.9****Min: 1****Max: 9****Enter x: 4****Index: 4****4 occurs 2 times****Less than x: 3****More than x: 5****9 1 7 2 4 4 2 8 7 5****1 2 2 4 4 5 7 7 8 9** |
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| **Teacher's comments:** |
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| **Program no. 2** |
| Declare an **N**-element vector of integers. Write pseudorandom numbers from the range **[0, 10]** to the vector. Print vector elements on the screen. Calculate how many times each number appears in the vector.Example of program execution:**Vector elements:****10 0 2 0 7 1 5 10 3 3 0 4 2 1 1 8 7 3 7 6****Occurrences of each number:****0: 3****1: 3****2: 2****3: 3****4: 1****5: 1****6: 1****7: 3****8: 1****9: 0****10: 2**  |
| **Program code:** |
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| **Teacher's comments:** |
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| **Program no. 3** |
| There are two **N**-element arrays-of-int (**A** and **B**) storing pseudo-randomly generated integers in the range of **0, 99**:1. create a **C** array storing the larger of the array elements from **A** and **B** in the corresponding position,
2. create a **D** array storing the sum of elements of arrays **A** and **B**,
3. calculate and print the **dot product** of the arrays **A** and **B**.

Declare the size of the arrays (**N**) as a symbolic constant defined using **#define** preprocessor directive. Print the elements of all arrays (**A**, **B**, **C**, **D**).Example of program execution:**A: 0 22 72 80 36****B: 33 30 59 98 70****C: 33 30 72 98 70****D: 33 52 131 178 106****Dot product: 15268**  |
| **Program code:** |
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| **Teacher's comments:** |
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