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| **INTRODUCTION TO PROGRAMMING IN C (IS-FEE-10061S)**  **WEEK 11** | | | |
| **First Name** | **Last Name** | **Date** | **Points** |
|  |  | **16.05.2024** |  |

**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** |
| Define a structure that describes any **electrical device**. The structure should consist of at least three members of different types. Dynamically allocate memory for a structure variable, assign values to structure members (either by direct assignment or by reading from the keyboard), print the contents of structure members, and then free the allocated memory. |
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| **Teacher's comments:** |
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| **Program no. 2** |
| Write a program that reads the number of elements of a one-dimensional array (a vector). Allocate memory for an array of integers (use **malloc()** or **calloc()** functions). Perform the following operations:   1. write pseudo-randomly generated integers in the range of [0,99] to the array; 2. print the elements of the array on a single line; 3. calculate and print the sum and the arithmetic mean of all elements of the array; 4. find and print the largest value in the array.   Free memory using the **free()** function.  Example of program execution:  **Enter the number of elements: 15**  **54 42 63 8 10 19 68 68 37 17 92 40 98 37 80**  **Sum = 733**  **Arithmetic mean = 48.8667**  **Max = 98** |
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| **Teacher's comments:** |
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| **Program no. 3** |
| Write a program that reads the number of rows and the number of columns of two-dimensional array (a matrix). Allocate memory for an array of integers (use malloc() or calloc() functions). Perform the following operations:   1. write pseudo-randomly generated integers in the range of [-99, 99] to the array; 2. print the elements of the array (row by row); 3. calculate and print the sum and the arithmetic mean of all elements of the array; 4. find and print the largest value in the array.   Free memory using the free() function.  Example of program execution:  **Enter the number of rows: 3**  **Enter the number of columns: 7**  **-86 -55 -55 47 85 54 76**  **77 -93 15 78 -68 81 70**  **-97 51 57 53 -36 41 -56**  **Sum: 239**  **Arithmetic mean: 11.381**  **Max: 85** |
| **Program code:** |
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| **Teacher's comments:** |
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