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| **INTRODUCTION TO PROGRAMMING IN C (IS-FEE-10061S)**  **WEEK 10** | | | |
| **First Name** | **Last Name** | **Date** | **Points** |
|  |  | **09.05.2024** |  |

**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 a minimum of three members of different types. Then declare three structure variables. Initialize the first one with values, assign values to the second one, and read the values from the keyboard into the third one. Print the contents of all structure variables on the screen. |
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| **Teacher's comments:** |
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| **Program no. 2** |
| Structure **mycomplex** describes a complex number.  **struct mycomplex**  **{**  **float Re, Im;**  **};**  Declare two structure variables (**z1**, **z2**) and initialize them with the values: **z1 = 2 + 4j** **z2 = 6 – 8j**.  Write a program that calculates the sum, difference, quotient and product of complex numbers **z1** and **z2**. Assign the results to the structure variable **z3**. Print results on the screen.  Check the correctness of the obtained results in Table 1.  Table 1. Correct results for Program no. 2   |  |  |  |  | | --- | --- | --- | --- | | **Operation** | **Result** | **Operation** | **Result** | | z1 + z2 | 8 – 4j | z1 \* z2 | 44 + 8j | | z1 - z2 | -4 + 12j | z1 / z2 | -0.2 + 0.4j |   Example of program execution:  **z1 = 2+4\*j**  **z2 = 6-8\*j**  **z3 = z1 + z2 = 8-4\*j**  **z3 = z1 - z2 = -4+12\*j**  **z3 = z1 \* z2 = 44+8\*j**  **z3 = z1 / z2 = -0.2+0.4\*j** |
| **Program code:** |
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| **Teacher's comments:** |
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| **Program no. 3** |
| An **N**-element array contains point structures describing the coordinates of points **(x, y)** in a rectangular coordinate system.  **struct point**  **{**  **int x, y;**  **};**  Write a program that will find and display the coordinates of a point whose distance from the origin of the coordinate system is:  a) the largest;  b) the smallest.  Generate point coordinates pseudorandomly in the range **[-9, 9]**. |
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| **Teacher's comments:** |
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