

Programming Languages In Practice Part II

C++

Practice 1

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First program

1. Write your first program which will display text „Hello world!“.

```
#include <iostream>
```

```
int main() {
```

```
    std::cout << "Hello world!";
```

```
    return 0;
```

```
}
```

2. Add one inline and one multiline comment to the program.

3. Modify program in that way that it will display text „Hello <your_name>!“ in a new line below text „Hello world!“.

```
Hello world!  
Hello Marta!
```

Task 1

Basic Input/Output

Write a program that will ask user for a two integer numbers. Display them on a screen.

```
Please enter two integer numbers: 4 7  
Your number: 4 7
```

Observe what happend if your enter negative number and floating point number.

Task 2

Data types

Declare one variable for each type: bool, int, float, char and double. Assign them any possible value. Display data on screen in the presented format:

Data type (data_type) has value equals (value_of_data) and size equals (size_of_data)

To determine the size of the variable use functions: sizeof(), e.g sizeof(int).

Boolean: 1	Size: 1
Character: a	Size: 1
Integer: 5	Size: 4
Floating point: -5.1	Size: 4
Double floating point: 56.789	Size: 8

Task 3

String

Write a program that ask for a student's data: first name, last name, index number, field of study and term. Display data in the presented format:

```
Hi (first name) (last name)! Your index number is (index number). You are  
on (term) term on (field of study).
```

Task 4

C practice

Write a program in C which will ask user for:

- an integer number – display it with hexadecimal system (use %x and %#x),
- a double number – display it with scientific notation (use %E),
- one character – display it on a screen and its value from ASCII table,
- string consists of two word – use fgets() function to read text and display it by puts() function.

Example output:

```
Enter an integer number: 100
Your number in hexadecimal system is 64 (0x64)
Enter a double number: 12345.6789
Your number is 1.234568E+04
Enter one character: A
Your character is A and its value is equal to 65
Enter your string consist of two words: Well done
Well done
```

Task 5

Christmas tree

Write a program that display Christmas tree consist of asterisk like on pattern below.

```
  *  
 * * *  
* * * * *  
* * * * * *
```

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