

## Lab 1.6.1 Logical data: operators and expressions

### Objectives

Familiarize the student with:

- comparing values using relational operators;
- building complex Boolean expressions using logical operators;
- translating verbal description into programming language.

### Scenario

Take a look at the code below: it reads an integer value, and is then ready to perform a complicated magical test and print the answer – it may be positive or it may not. Okay, you may be a bit surprised with the form of the line sending the result to the output, but don't worry – it'll look familiar to you soon. Just accept it as-is and just remember that the purpose of this construction is to write a clear message concerning the test result.

Now listen to an ancient story that says:

We need a number whose value:

- is greater than or equal to 0 and less than 10, or
- multiplied by 2 is less than 20 and reduced by 2 is greater than minus 2, or
- reduced by 1 is greater than 1 and divided by 2 is less than 10, or
- is equal to 111.

Write the above condition in the form of an expression accepted by the C++ language and assign its result to the **answer** variable.

Test your code using the data we've provided.

```
#include <iostream>

using namespace std;

int main(void) {
    bool answer;
    int value;

    cout << "Enter a value: ";
    cin >> value;

    answer = ... // insert your expression here

    cout << (answer ? "THAT'S TRUE :)" : "THAT'S NOT TRUE :(") << endl;
    return 0;
}
```

### Example input

-2

### Example output

THAT'S NOT TRUE :(

### Example input

0

### Example output

THAT'S TRUE :)

### Example input

4

### Example output

THAT'S TRUE :)

### Example input

10

### Example output

THAT'S TRUE :)

### Example input

22

### Example output

THAT'S NOT TRUE :(

### Example input

100

### Example output

THAT'S NOT TRUE :(

### Example input

111

### Example output

THAT'S TRUE :)