Exercise 3 - Exploring Integers as Binaries

This weeks exercise sheet is focusing on the integer data type and its binary representation, as well as writing a few functions on your own.

If you have any questions or problems, please write in the Moodle!

Exercise 1 —

Given the following numbers, determine the 2's complement as shown in the lecture:

a) (+) 13

b) (-) 8

c) (+) 0

Assume each number to be represented with 8 Bits, which is 1 Byte, so 13 as binary for example would be equivalent to 00001101.

Exercise 2 —

a) Open https://git.uni-due.de/vs.ude/objektorientierte-programmierung-cpp. Use git to *clone* the repository and import the project into 03_Integers.
Inside the 'main.cpp' - file you will find a function called 'nth_bit_is_zero'. Write down short comments using `//` *to explain every step of the function.*
What will be stored in `temp`? What will the function return?

b) Implement the function `print_int_as_binary` *which, as the name suggests, prints a given integer number as its binary representation.*
Hint: `sizeof(<datatype>)` will evaluate the size of a given datatype in bytes.