

**Course : COMP-2650**  
**Instructors : Dr. Boufama**  
**Assignment : 01**  
**Due date : Monday January 29, 11.59pm**

Write a C (or Python or Java) program, call it **binaryArithmetic** with the following requirements:

- the programs take 3 space-separated string arguments, i.e., a binary number, an operator (+ or -) and a binary number.
- the program parse each of the three argument and, in case any of them is not valid, prints an error message and exits. This parsing of binary numbers should be done in a separate function, called **int parse(char \*)**.
- If the operator is -, the second binary number is transformed into its corresponding 2's complement. This operation should be done in a separate function, called **void get2Complement(char \*)**.
- The addition of the two binary strings is performed in another function called **void Add(char \*num1, char \*num2, char \*result)**
- Finally, your program should print the result in the following format:  
**num1 op num2 = result, e.g., 01000001 + 00000011 = 01000100**
- For simplicity, assume you are dealing with 8-bit signed numbers in the range of -128 – +127.

Test runs:

- **\$ binaryArithmetic // call without arguments**  
**\$ Usage: binaryArithmetic < Binary1 > < +/ - > < Binary2 >**
- **\$ binaryArithmetic 01000010 + 00000011**  
**\$ 01000010 + 00000011 = 01000101**
- **\$ binaryArithmetic 01009010 + 00000011**  
**\$ Illegal character in binary string.**