

Introduction:

You are tasked with creating a C solution file that can calculate both the addition and subtraction of two binary numbers represented as strings of characters using functions. Your functions should take two binary numbers as input, perform addition or subtraction as specified, and then display the result. You must implement separate functions for addition and subtraction.

Assignment Instructions:

Requirements

1. Create a C program that utilizes functions to perform binary addition and subtraction
2. Implement the following functions:
 - AddBinary
 - SubtractBinary
3. Ensure that the input binary numbers are valid (i.e., containing only '0' and '1' characters)
4. The binary addition and subtraction should take into account borrow and carry-over, just like regular decimal addition and subtraction
5. Display the original binary numbers, the selected operation (addition or subtraction), and the result to the user

AddBinary Function

1. Takes in 2 char arrays as input parameters, and an int for the array length
2. Adds the 2 binary numbers together
3. Returns a char array with the result of the addition

SubtractBinary Function

1. Takes in 2 char arrays as input parameters, and an int for the array length
2. Subtracts the 2 binary numbers together
3. Returns a char array with the result of the subtraction

Note:

- Assume that the length of the 2 input arrays will always be equal to **8**, a pre-processor macro is defined for you in **Binary.h**
- You do not have to return the length of the array, the program will assume that the length is the same as the input arrays

Submission Requirements:

- You are required to modify a single C source code file named **Binary.c** that contains the implementations of the **AddBinary** and **SubtractBinary** functions declared in **Binary.h**

- The `!run.bat` batch file contains a suite of test cases for this assignment, it will also check your output against the expected output located in the `sample_outputs` directory
- Your program should minimally reproduce the output shown in the examples bellow

Examples

```
00001101
+ 00001011
-----
00011000
```

```
00001101
- 00001011
-----
00000010
```

```
0000000A is not a valid binary number
```