Programming Assignment 4: Hexadecimal Arithmetic

- **How I develop my assignment solution**
1. The process

When I first saw the assignment, I found that the program can be divided into several parts. First is inverse the input, because when we do the calculations, we start from the last number. The second step is to turn all the hexadecimal characters into numeral numbers. The third step is doing the addition or multiplication, which is the most complicated part of this assignment. Fourth is to turn part is to convert a binary string to its decimal value to verify the correctness of the sum or product. For the hexadecimal addition, the last step is to check whether the overflow occurs.

2. Problems I encountered

The most difficult part I think in this program is the addition and multiplication part. When doing the hexadecimal addition, the problem I encountered was that the result came out incorrectly. To solve this problem I divided the addition into two situations, one is when number1 > number2, and the other is when number1 < number2. Moreover I separated the calculation and determined whether one of the two inputs runs to the last digit. If one of the numbers runs to the end, just output the value of the other number. Besides, while doing the multiplication, I couldn't find the proper formula. After testing several times, I eventually got the correct result of product.