1. **Number Trouble**

# Program Name: NumberTrouble.java Input File: numbertrouble.dat

The number ten can be represented as 1010 (8+2=10) in binary. We can also represent this number sequence “1010” using Fibonacci numbers in place of base 2. For the sake of this problem, the beginning of the Fibbonacci sequence will be as follows:

1,2,3,5,8,13,21,...

Each preceding term is the summation of the two previous numbers, note only one 1 is used for this problem. Using this method, the number in binary “1010” can be represented as 1•5+0•3+1•2+0•1=7. Note that there isn’t always a unique representation for every number. The number 10 could be either 10010 (8+2) or as 1110 (5+3+2). To make these Fibbonacci numbers unique, larger Fibonacci terms must always be used when possible (disallow 2 adjacent 1’s). So 10 in base 2 would be represented as 1010 but using Fibonacci numbers, it would be 10010 (8+2). You are to write a program that takes in two valid Fibonacci numbers and prints their sum using the Fibonacci system previously explained.

**Input**

The first two lines will represent the numbers you must add up in Fibonacci form. These numbers will at most have 100 digits. There will be a blank line between each test case.

**Output**

Print the sum of the two Fibonacci numbers in Fibonacci form. A single line will must be printed after each test case.

**Example Input File**

10000

10000

10000

1000

10010

1

**Example Output to Screen**

100100

100000

10100