F006A. Can you add up?   P55982_en

Your task is to write a program that reads pairs of natural numbers and prints their sum.

Warning: the natural numbers that we consider in this problem can be very large (thousands of digits), you must store them in variables of `string` type. The main program is already done; do not modify it:

> **int** *main*() {
>   **string** *x*, *y*;
>   **while** (**cin** $\gg$ *x* $\gg$ *y*) **cout** $\ll$ *sum*(*x*, *y*) $\ll$ **endl**;
> }

Implement the function

> **string** *sum*(**string** *x*, **string** *y*);

that, given two strings of characters x and y that represent two natural numbers, returns a string of characters z that represents their sum.

To simplify the problem, suppose that neither x nor y start with '0'. Besides, suppose that x has, at least, the same number of digits than y. The number of digits of z must be equal to the number of digits of z plus one, although it causes that z starts with '0'.

Observations

- Remember that a string s with n characters c can be declared like this: `string s(n, c);`

- Remember also that the string operations like `s += '0';`, `s1 += s2;` or `s = s1 + s2;` are not allowed.

Sample input 1

```
2 2
7 8
1234 1
9999 1
100000000000000000000 100000000000000000000
99999999999999999999 99999999999999999999
100000000000000000000 1
1870 8428
100000 1010
```

Sample output 1

```
04
15
01235
10000
0200000000000000000000
109999999999999999998
0100000000000000000001
10298
0101010
```

Sample input 2

```
99999999999999999999999999999999999999999999999999999999999999999999999 2
```

Sample output 2

```
10000000000000000000000000000000000000000000000000000000000000000000001
```

Problem information

Author : Professorat de P1
Translator : Carlos Molina
Generation : 2013-09-02 15:09:38