

# 1 - Fibonacci

The fibonacci sequence is a sequence of numbers in which the previous two numbers add to form the next number. The first two elements of the sequence are 0 and 1, generate the first 100 elements of this sequence.

For example, the first 5 elements would be: 0, 1, 1, 2, 3.

## 2 - Morse decode

Given a sequence of "." and "-". Print the secret code as output. There will be one space in-between characters and 3 spaces between words.

The input is on a single line, with the morse code as a string.

Output the secret code on a single line. All characters should be in uppercase. Spaces between words should be represented by a single space.

For example:

Input:

>... --- ... --- ...

Output:

>SOS SOS

Letter	Morse
A	*.-
B	_.***
C	._.*
D	._**
E	*
F	***.
G	__*
H	****
I	**
J	*_---
K	._.*
L	*._**
M	--
N	._*
O	---
P	*._.*
Q	_.*.
R	*._*
S	***
T	-.
U	**_
V	***_
W	*._.
X	._**.
Y	._*..
Z	__**

### 3 - Square coordinates

Given 4 cartesian coordinates that represent a square on a cartesian plane, output the number of points with integer coordinates that lie within, or on the sides of the square.

The input is given in a 2x4 2D array denoting the x y coordinates of each point that makes up the square in a clockwise direction.

Output a single integer denoting the number of points.

For example:

Input:

>[[1,1],[1,-1],[-1,-1],[-1,1]]

Output:

>9 (4 vertices, 4 on the edges, 1 within)

