

Problem I

Intercepting Information

Spies Breaching Computers (SBC) is a private digital spy agency that is developing a new device for intercepting information using electromagnetic waves, which allows spying even without physical contact with the target.

The device tries to collect information one byte at a time, this is, a sequence of 8 bits where each of them, naturally, can have a value of 0 or 1. In certain situations, due to interference from other devices, the reading cannot be done successfully. In this case, the device returns the value 9 for the corresponding bit, informing that the reading could not be performed.

In order to automate the recognition of the information the device reads, a request was made for a program that, based on the information read by the device, informs whether all bits were read successfully or not. Your task is to write this program.

Input

The input consists of a single line, containing 8 integers $N_1, N_2, N_3, N_4, N_5, N_6, N_7$ and N_8 , indicating the values read by the device (N_i is 0, 1 or 9 for $1 \leq i \leq 8$).

Output

Print a single line containing the capital letter “S” if all bits are read successfully; otherwise print a single line containing the capital letter “F”, corresponding to a failure.

Input example 1 0 0 1 1 0 1 0 1	Output example 1 S
Input example 2 0 0 1 9 0 1 0 1	Output example 2 F