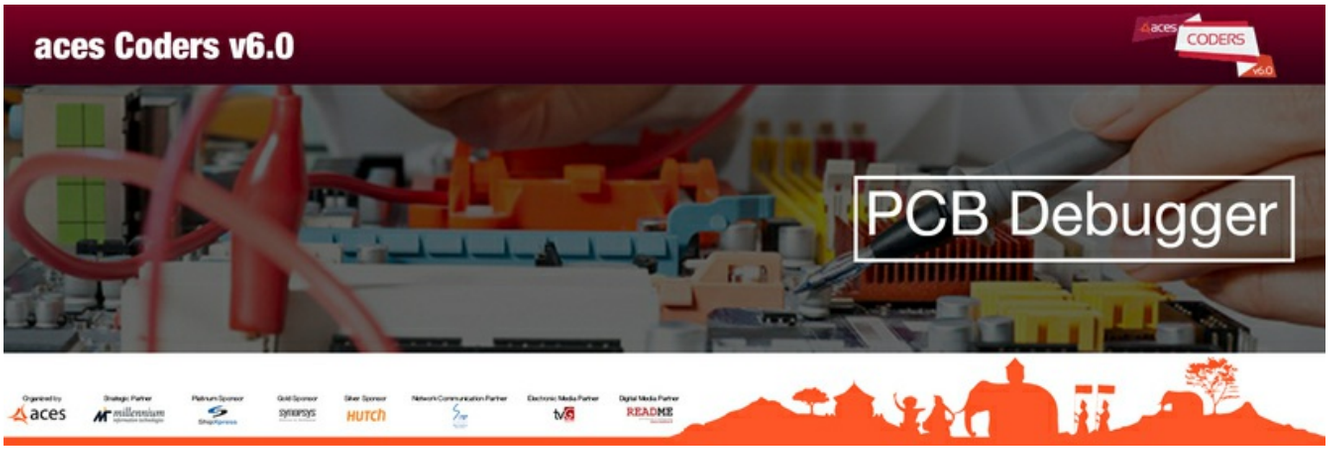
PCB Debugger



Hirantha is a final year student studying Electrical and Electronic Engineering at the University of Peradeniya. For his final year project, he started a research on the process of analyzing circuits. Now he has found a new efficient way to extract essential details from a circuit which can be used to predict whether a particular circuit is working, short-circuited (https://en.wikipedia.org/wiki/Short_circuit), or open circuited. He is sure that he can get a patent for his method. However, he cannot complete his project because he is not good in programming. Therefore, he needs your help in implementing his algorithm for analyzing the circuit with the extracted data.

Extracted details from a circuit are the number of components in the circuit and how they are connected in the Printed Circuit Board. Every component has one positive terminal and one negative terminal. Every circuit has a power supply as a component in the circuit. The negative terminal of the power supply is considered as the Ground of the circuit. There is only one power supply for a circuit. There are no current sources in a circuit.

Input Format

The first line will give the number of components (n). Next n lines will give the details of connections starting from the negative terminal of each component, one line per component. Details of connections from power supply are given starting from the positive terminal. The power supply is always represented by P. Assume that, in any given circuit, open circuits do not have any effect on short circuits.

Constraints

$0 < n < 50$

Output Format

If the circuit is working, which means no open circuits nor short circuits, print W
If the circuit has a open circuit, print OC
If the circuit has a short circuit, print SC
If the circuit has both open and short circuits, print OC SC, in the same order

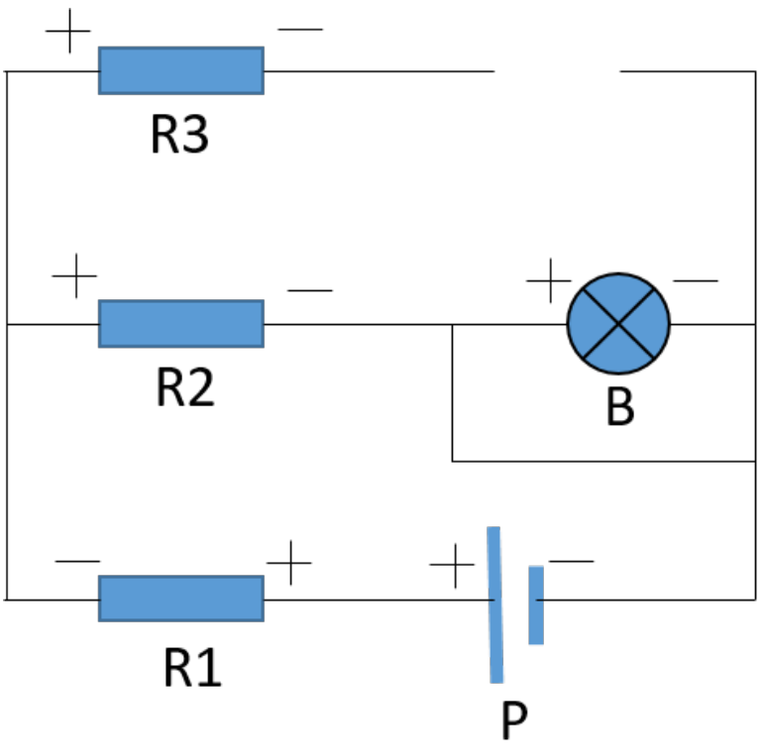
Sample Input

5
P R1
R1 R2,R3
R2 B,P
R3
B P

Sample Output

OC SC

Explanation



Negative terminal link of R3 is open circuit. B is short-circuited. So the output is OC SC.

No partial marks for this problem