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**Magical String II**

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Magical Girl Emily uses "magical strings" to cast spells. For her, a string X is magical if and only there are no consecutive '(' or ')' characters . The string is invalid if it contains any character other than '(' and ')'.

Given a string, write a program to find whether it is magical or not.

**Input and Output Format:**

Input consists of a string. Assume that the maximum length of the string is 100.

Output 'invalid' if the string is invalid. Output 'yes' if the string is magical or 'no' if the string is not magical.

**Sample Input 1:**

()()(

**Sample Output 1:**

yes

**Sample Input 2:**

(()()

**Sample Output 2:**

no

**Sample Input 3:**

(((&))

**Sample Output 3:**

invalid

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**Knight**

**Knight**

You are teaching your younger brother the game of chess. As knight is one of the most powerful coin in the chess game, you start with teaching him the movements of knight.

You take an empty chessboard (with no coins in it) and place a knight in a particular position in the chess board and you ask him to move the knight to some other valid position. Then you try to verify whether his move is correct.

Being programming-savvy, you want to automate this task.

Given the current position of the knight and the next move, write a program to determine whether the move is correct or incorrect or invalid.

Please note that a knight moves in a L shape in all directions.

**Input Format:**

Input consists of 5 integers that correspond to n, xs, ys, xn and yn.

n corresponds to the size of the chessboard (n\*n)

(xs,ys) correspond to the current position of the knight in a n\*n chessboard.

(xn,yn) correspond to the next position of the knight in a n\*n chessboard.  
Assume that n<20. The 1st square in the chess board is at (0,0).

**Output Format:**

Print “invalid” if the next move is outside the chessboard.

Print “correct” if the next move is one of the correct moves.

Print “incorrect” if the next move is incorrect.

**Sample Input 1:**

8

2

2

4

4

**Sample Output 1:**

incorrect

**Sample Input 2:**

8

2

2

4

1

**Sample Output 2:**

correct

**Sample Input 3:**

8

2

2

9

4

**Sample Output 3:**

invalid

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## Gifts II

**Gifts II**

Two of your friend's Birthdays are on 1st August and you plan to buy gifts for both of them. Your father gives you Rs.X to buy the gifts.

Yo go to Odyssey in the Fun Mall and you first walk through the store and create a list L of all available items of your liking. You want to gift your friends the expensive gifts but you dont want to exceed your budget too. From this list you would like to buy two items whose price adds up to a value not greater X and this value should be the maximal possible value less than or equal to X. In case of multiple choices, you need to select the items where the price difference between the 2 items is minimal. The solution you provide will consist of the two integers indicating the positions of the items in your list (smaller number first).

**Input Format**

Input will be

* One line containing the value **X**, the amount received from your father.
* One line containing the value **I**, the number of items in the store.
* One line containing a space separated list of **I** integers. Each integer **P** indicates the price of an item in the store.
* There will be exactly one solution.

**Output Format**

Output consists of 2 integers that correspond to the indices of the two selected items. The lower index should be output first.

**Limits**

5 ≤ **X** ≤ 1000  
1 ≤ **P** ≤ 1000

1 ≤ **I** ≤ 100

**Sample Input 1:**

100

4

10 5 75 30

**Sample Output 1:**

1 3

**Sample Input 2:**

100

4

75 25 50 50

**Sample Output 2:**

3 4