Hello, **2024101067**.

Nest Checker and Palindrome using Stacks

Submit solution

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Points: 100 (partial)
Time limit: 1.0s
Memory limit: 256M

Allowed languages
C

For this question you have to perform two operations, first is to check if a string is balanced or not. A string is called a balanced string when:

- Iff it has brackets ({, [, (,),], }), the opening and closing brackets are in a correct nested form. For example, `[{()}]` is a balanced string, while `[{(][)}]` is not.
- The second is to check if its a palindrome. You can find the definition of palindrome here

Input Format

Input will consist of multiple lines.

- The first line will contain the number of test cases **T**.
- The subsequent lines will contain the strings. There are no spaces inside the strings, therefore you can use normal *scanf()* to read the input.

Output Format

For each test case

- Print **Balanced** if the string is only balanced.
- Print **Palindromic** if the string is only Palindromic.
- Print **Balanced and Palindromic** if it is both.
- Print **-1** if it is none.

Example

Input

```
[{abcde}]
{(abcba)}
```

Output

```
Balanced
Balanced
```

Copy

Example 2

Input

```
3
[{abab}]
{(absdfsdcba)]}
abcdcba
```

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Output

```
Balanced
-1
Palindromic
```

Copy

Explanantion

The first example has two strings as input. The first string has brackets in an nested order and is not a palindrome, hence the corresponding output is **Balanced**. Similarly for the second input the string has brackets in a correct order as well as it is not a palindrome, hence the output is **Balanced** For the second example, the first input is balanced, the second input is not balanced nor Palindromic hence the corresponding output is **-1**. The third input does not have any brackets and is palindromic, hence the output is **Palindromic**.

Constraints

$0 \leq T \leq 100$
$0 \leq L \leq 10000$ where L is length of input string.

Clarifications

Request clarification

No clarifications have been made at this time.

Hello, **2024101067**.