## Write executable code for the following ques.

1. Implement a stack using array (Done in Class).
2. Reverse a string using stack (Done in Class).
3. Check whether the parenthesis are balanced or not.
4. Check whether the parenthesis are balanced or not, we have all three types of parenthesis.

| Input | Output |
|---|---|
| ( [ { } ] ) | Balanced |
| ( ( ( ] } ) | Unbalanced |
| } } } | Unbalanced |

5. Given an array, find the nearest smaller element G[i] for every element A[i] in the array such that the element has an index smaller than i.

G[i] for an element A[i] = an element A[j] such that

j is maximum possible AND

j < i AND

A[j] < A[i]

Elements for which no smaller element exist, consider next smaller element as -1.

**Example**
Input:  [4, 5, 2, 10]
Output:  [-1, 4, -1, 2]

Input: [3, 2, 1]
Output: [-1, -1, -1]

## Read about the following

1. Reverse Polish Notation