

Stack – Application Questions

Question 1: Balanced Parentheses Check

Write a program that uses a Stack to check whether the parentheses in a given mathematical expression are balanced or not.

Allowed parentheses:

(), { }, []

Example:

Input: {(a+b)*[c-d]}

Output: Balanced

Input: {(a+b]*c)

Output: Not Balanced

Requirements:

- Use a Stack data structure only
- Push opening brackets into the stack
- Pop and check when a closing bracket is found
- At the end, the stack must be empty

Question 2: Reverse an Array Using Stack

Write a program that reverses the elements of an array using a Stack.

Example:

Input: 1 2 3 4 5

Output: 5 4 3 2 1

Requirements:

- Push all array elements into the stack
- Pop elements from the stack and store them back into the array
- Do not use any built-in reverse functions