Reversing a String Using Stack in C

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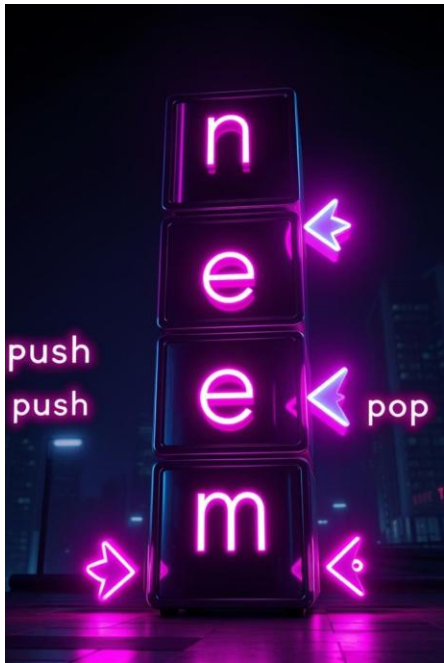
Introduction

- This presentation demonstrates how to reverse a string using stack data structure in C.

- The concept utilizes Last-In-First-Out (LIFO) property of stacks to reverse the order of characters.



Stack Concept

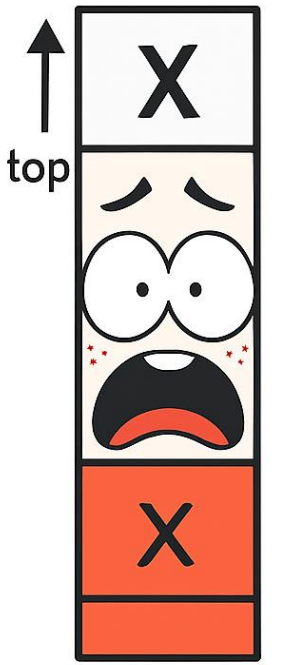
- • Stack is a linear data structure.
- • Follows Last-In-First-Out (LIFO) principle.
- • Push operation: Insert element into stack.
- • Pop operation: Remove element from stack.
- • In string reversal, characters are pushed then popped to reverse order.

Algorithm for Reversing a String

- 1. Read the input string.
- 2. Push each character onto the stack.
- 3. Pop characters from the stack and store back into the string.
- 4. Print the reversed string.

C Code Example

```
char pop() {
    if (top >= 0) {
        return stack[top]
    } else {
        printf("Stack
        underflow!"
    }
void push(char c) {
      if top <MAX -1
        stack[++top] = c.
    } else
        printf(Stack
        overflow!)
}
```



Stack overflow!
Stack overflow

Example Output

Output

Clear

```
Enter a string: Nayeem
Reversed string: meeyaN


=== Code Execution Successful ===
```

Conclusion

- • Using a stack makes string reversal simple.
- • Demonstrates stack's LIFO property.
- • This method can be extended to other data processing problems.


THANK YOU