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**Roll #** 2K23-BSSE-225 **Submitted To:** Sir Sajid Maqbool

**Assignment:**

Write a C program that reverses the string of your name, using a stack implemented with a character array. The program must contains functions such as push, pop, display, and main.

**How the Code Works:**

**1. Input Your Name:**

The program asks the user to input their name, which is stored in the `name` array.

**2. Push Each Character to the Stack:**

Each character of the string is pushed onto the stack using the `push` function.

- Why? The stack stores characters in reverse order because of its LIFO property.

**3. Pop Characters from the Stack:**

The program pops characters one by one from the stack and prints them, creating the reversed string.

- Why? The last character pushed is the first one popped, effectively reversing the order of the string.

**4. Reversed Output:**

The `displayReversed` function prints the reversed name directly to the console.

**Code:**

#include <stdio.h>

#include <string.h>

#define MAX 100

char stack[MAX];

int top = -1;

void push(char ch) {

    if (top < MAX - 1)

        stack[++top] = ch;

}

char pop() {

    if (top >= 0)

        return stack[top--];

    return '\0';

}

void displayReversed(char name[]) {

    printf("Reversed Name: ");

    for (int i = 0; i < strlen(name); i++) {

        printf("%c", pop());

    }

    printf("\n");

}

int main() {

    char name[MAX];

    printf("Enter your name: ");

    scanf("%s", name);

    for (int i = 0; i < strlen(name); i++) {

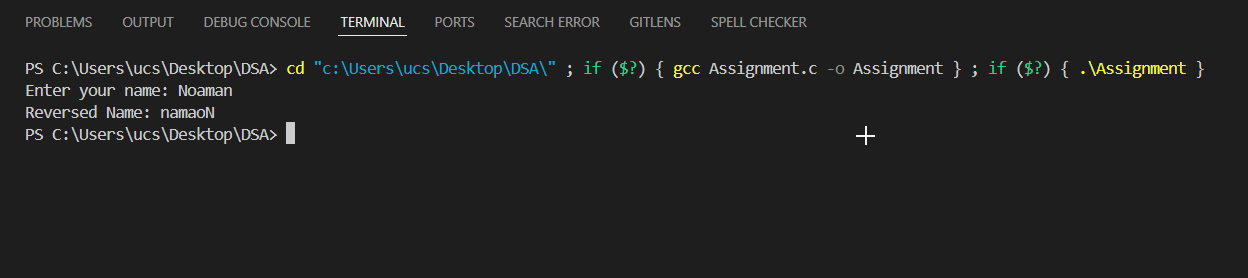
        push(name[i]);

    }

    displayReversed(name);

    return 0; }

**Output:**

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