

Practical No 7

- Program 1 : Implementation of STACK. To perform any Stack operations.

//Name : Rakesh Mahadev Bandi

//Roll No : 3

//Class : SYCSE

//PRN No : 2024065738

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
#define MAX 5
```

```
int stack[MAX];
```

```
int top = -1;
```

```
void push(int value) {  
    if (top == MAX - 1) {  
        printf("Stack Overflow!\n");  
    } else {  
        stack[++top] = value;  
        printf("%d pushed onto the stack.\n", value);  
    }  
}
```

```
int pop() {  
    if (top == -1) {  
        printf("Stack Underflow!\n");  
        return -1;  
    } else {  
        return stack[top--];  
    }  
}
```

```
void display() {  
    if (top == -1) {  
        printf("Stack is empty.\n");  
    } else {  
        printf("Stack elements: ");  
    }  
}
```

```

    int i;
    for (i = top; i >= 0; i--) {
        printf("%d ", stack[i]);
    }
    printf("\n");
}
}

```

```

int main() {
    int choice, value;

    while (1) {
        printf("\nStack Operations Menu:\n");
        printf("1. Push\n");
        printf("2. Pop\n");
        printf("3. Display\n");
        printf("4. Exit\n");
        printf("Enter your choice (1-4): ");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                printf("Enter a value to push: ");
                scanf("%d", &value);
                push(value);
                break;
            case 2:
                value = pop();
                if (value != -1) {
                    printf("Popped %d from the stack.\n", value);
                }
                break;
            case 3:
                display();
                break;
            case 4:
                printf("Exiting program.\n");
                exit(0);
            default:

```

```

        printf("Invalid choice. Please select a valid option (1-4).\n");
    }
}

return 0;
}

```

Output:

```

E:\syco BTECH\Stack.exe

Stack Operations Menu:
1. Push
2. Pop
3. Display
4. Exit
Enter your choice (1-4): 1
Enter a value to push: 10
10 pushed onto the stack.

Stack Operations Menu:
1. Push
2. Pop
3. Display
4. Exit
Enter your choice (1-4): 1
Enter a value to push: 20
20 pushed onto the stack.

Stack Operations Menu:
1. Push
2. Pop
3. Display
4. Exit
Enter your choice (1-4): 3
Stack elements: 20 10

```

```

Stack Operations Menu:
1. Push
2. Pop
3. Display
4. Exit
Enter your choice (1-4): 2
Popped 20 from the stack.

Stack Operations Menu:
1. Push
2. Pop
3. Display
4. Exit
Enter your choice (1-4): 3
Stack elements: 10

Stack Operations Menu:
1. Push
2. Pop
3. Display
4. Exit
Enter your choice (1-4): 4
Exiting program.

-----
Process exited after 42.75 seconds with return value 0
Press any key to continue . . . █

```