PRG_1(PUSH and POP)_lab1

```c
#include <stdio.h>
#define MAX 5

int stack[MAX];
int top = -1;

void push() {
    int item;
    if (top == MAX - 1) {
        printf("Stack Overflow! Cannot push element.\n");
    } else {
        printf("Enter element to push: ");
        scanf("%d", &item);
        top++;
        stack[top] = item;
        printf("Element %d pushed into stack.\n", item);
    }
}

void pop() {
    if (top == -1) {
        printf("Stack Underflow! Cannot pop element.\n");
    } else {
        printf("Popped element: %d\n", stack[top]);
        top--;
    }
}

void display() {
    int i;
    if (top == -1) {
        printf("Stack is empty.\n");
    } else {
        printf("Stack elements are:\n");
        for (i = top; i >= 0; i--) {
            printf("%d\n", stack[i]);
        }
    }
}

int main() {
    int choice;

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

        switch (choice) {
            case 1:
                push();
                break;
            case 2:
                pop();
                break;
            case 3:
                display();
                break;
            case 4:
                printf("Exiting program.\n");
                return 0;
            default:
                printf("Invalid choice! Try again.\n");
        }
    }

    return 0;
}
```

OUTPUT:

```
--- Stack Menu ---
1. Push
2. Pop
3. Display
4. Exit
Enter your choice: 1
Enter element to push: 20
Element 20 pushed into stack.

--- Stack Menu ---
1. Push
2. Pop
3. Display
4. Exit
Enter your choice: 1
Enter element to push: 30
Element 30 pushed into stack.

--- Stack Menu ---
1. Push
2. Pop
3. Display
4. Exit
Enter your choice: 3
Stack elements are:
30
20
10

--- Stack Menu ---
1. Push
2. Pop
3. Display
4. Exit
Enter your choice: 2
Popped element: 30

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

Process returned 0 (0x0)   execution time : 31.339 s
Press any key to continue.
```