

LAB PROGRAMS

1. WAP to simulate the working of stack using an array with the following, a) Push b) pop c) display. The program should print appropriate messages for stack overflow and underflow.

```
#include <stdio.h>
#include <process.h>
#include <stdlib.h>
#define MAX 5
int top = -1, stack[MAX];
void push();
void pop();
void display();
int main()
{
    int ch = 0;
    while (ch != 4)
    {
        printf("Stack Menu\n");
        printf("\n 1. Push\n 2. Pop\n 3. Pull\n 4. Exit\n");
        printf("Enter your choice\n");
        scanf("%d", &ch);
        switch (ch)
        {
            case 1: push();
                    break;
            case 2: pop();
                    break;
            case 3: display();
                    break;
            case 4: exit(0);
            default: printf("\n Wrong Choice\n");
        }
    }
}
```

}

{

return 0;

{

void push()

{

int val;

if (top == MAX-1)

{

printf("\n Stack Overflow ");

{

else

{

printf("\nEnter element to push:");

scanf("%d", &val);

top = top + 1;

stack[top] = val;

{

{

void pop()

{

if (top == -1)

{

printf("\n Stack Underflow

{

else

{

printf("\n Deleted element is '%d',"

stack[top]);

top = top - 1;

{

{

void display()

{


```

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

```