

LAB PROGRAM 1:STACK USING ARRAYS

```
#include<stdio.h>

#include<stdlib.h>

int stack[50];


int ch;

void push(void);

void pop(void);

void display(void);

int n,top,no,i;

int main()

{

    top=-1;

    printf("\n Enter the size of stack:");

    scanf("%d",&n);

    printf("\n Please enter the stack operation which you want to perform:");

    printf("\n 1.Push\n 2.Pop\n 3.display\n 4.exit");

    while(ch!='4')
```

```
{  
    printf("\n Enter the Choice:");  
    scanf("%d",&ch);  
    switch(ch)  
    {  
        case 1:  
            push();  
            break;  
        case 2:  
            pop();  
            break;  
        case 3:  
            display();  
            break;  
        case 4:  
            exit(0);  
            break;  
        default:
```

```
        {
            printf ("\nINVALID CHOICE!");
        }

    }

}

return 0;
}

void push()
{
    if(top>=n-1)
    {
        printf ("\nSTACK OVERFLOW");

    }
    else
    {
```

```
    printf(" Enter a value to be inserted/pushed:");  
    scanf("%d",&no);  
    top++;  
    stack[top]=no;  
}  
}  
void pop()  
{  
    if(top<=-1)  
    {  
        printf("\n UNDERFLOW");  
    }  
    else  
    {  
        printf("\n The popped element is %d",stack[top]);  
        top--;  
    }  
}
```

```
void display()
{
    if(top>=0)
    {
        printf("\n The elements in stack are as follows: \n");
        for(i=top;i>=0;i--)
            printf("\n%d\\",stack[i]);
        printf("\n Press Next Choice");
    }
    else
    {
        printf("\n The stack is empty");
    }
}
```

OUTPUT:

1.PUSH

```
Please enter the stack operation which you want to perform:
1.Push
2.Pop
3.display
4.exit
Enter the Choice:1
Enter a value to be inserted/pushed:20

Enter the Choice:1
Enter a value to be inserted/pushed:30

Enter the Choice:1
Enter a value to be inserted/pushed:40

Enter the Choice:1
Enter a value to be inserted/pushed:50
```

2.POP

```
Enter the Choice:2

The popped element is 50
```

3.DISPLAY

```
The elements in stack are as follows:
40,
30,
20,
```