

```
//Program for Stack implementation through Array
```

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

```
//#include <ctype.h>
```

```
#define MAXSIZE 5
```

```
int stack[MAXSIZE];
```

```
int top=0; //index pointing to the top of stack
```

```
void main()
```

```
{
```

```
    void push();
```

```
    void pop();
```

```
    void display();
```

```
    int will=1,i;
```

```
    clrscr();
```

```
    while(1)
```

```
    {
```

```
        printf("\n\nMAIN MENU:\n\n1.PUSH\n2.POP\n3.EXIT\n\nENTER YOUR CHOICE:
```

```
");
```

```
        scanf("%d",&will);
```

```
        switch(will)
```

```
        {
```

```
            case 1:
```

```
                push();
```

```
                display();
```

```
                break;
```

```
            case 2:
```

```
                pop();
```

```
                display();
```

```
            break;
```

```
            case 3:
```

```
                exit(0);
```

```
            break;
```

```
            default:
```

```
                printf("Invalid Choice . ");
```

```
        }
```

```
    } //end of outer while
```

```
} //end of main
```

```
void push()
```

```
{
```

```

    int num;
    if(top>=MAXSIZE)
    {
        printf("\nSTACK FULL");
        return;
    }
    else
    {
        if(top<0)
            top=0;
        printf("\n\nENTER THE STACK ELEMENT : ");
        scanf("%d",&num);
        stack[top++]=num;
    }
}

void pop()
{
    if(top>=0)
        top--;

}

void display()
{
    int i;
    if(top<=0)
        printf("\n\nSTACK EMPTY");
    else
        for(i=top-1;i>=0;i--)
        {
            printf("\n\n%d ",stack[i]);
            if(i==(top-1))
                printf("---->TOP");
        }
}

```

-->>SAMPLE INPUT OUTPUT:

MAIN MENU :

1.PUSH

2.POP

3.EXIT

ENTER YOUR CHOICE : 1

ENTER THE STACK ELEMENT : 10

10 ---->TOP

MAIN MENU :

1.PUSH

2.POP

3.EXIT

ENTER YOUR CHOICE : 1

ENTER THE STACK ELEMENT : 20

20 ---->TOP

10

MAIN MENU :

1.PUSH

2.POP

3.EXIT

ENTER YOUR CHOICE : 1

ENTER THE STACK ELEMENT : 30

STACK FULL

30 ---->TOP

20

10

MAIN MENU :

1.PUSH  
2.POP  
3.EXIT

ENTER YOUR CHOICE : 2

20 ---->TOP

10

MAIN MENU :

1.PUSH  
2.POP  
3.EXIT

ENTER YOUR CHOICE : 2

10 ---->TOP

MAIN MENU :

1.PUSH  
2.POP  
3.EXIT

ENTER YOUR CHOICE : 1

STACK EMPTY