

## Experiment 1

```
#include<stdio.h>
int STK[100], TOP = -1, i, n, x, choice;
void Push();
void Pop();
void Peep();
void Display();
int main()
{
    printf("\t WELCOME to implementation of STACK using array !!\n");
    printf("enter the size of Stack (Maximum size=100):");
    scanf("%d", &n);

    do
    {
        printf("\n Stack Operation available: \n");
        printf("\t1.Push\t 2.Pop\t 3.Peep\t 4.Display\t 5.Exit \n");
        printf("\n Enter your choice: ");
        scanf("%d", &choice);
        switch (choice)
        {
            case 1:
                Push();
                break;

            case 2:
                Pop();
                break;

            case 3:
                Peep();
                break;

            case 4:
                Display();
                break;

            case 5:
                printf("exit :Program Finished !!");
                break;

            default:
                printf("PLease enter valid choice:1,2,3,4,5\n");
        }
    } while (choice !=5);
    return 0;
}

void Push()
{
    if (TOP >= n - 1)
    {
        printf(" Stack Overflow \n");
```

```

    }
else
{
    printf(" Enter the element to be pushed: ");
    scanf("%d", &x);
    TOP++;
    STK[TOP] = x;
}
}

void Pop()
{
    if (TOP < 0)
    {
        printf(" Stack Underflow \n");
    }
    else
    {
        printf(" The popped element is: %d \n", STK[TOP]);
        TOP--;
    }
}

void Peep()
{
    printf(" Enter the position of the element from the top which you want to peep: ");
    scanf("%d", &i);
    if (TOP - i + 1 < 0)
    {
        printf(" Stack Underflow on Peep \n");
    }
    else
    {
        printf(" The %d element from the top is: %d \n", i, STK[TOP - i + 1]);
    }
}

void Display()
{
    if (TOP < 0)
    {
        printf(" Stack is empty \n");
    }
    else
    {
        printf(" The element in the stack are:");
        for (i = TOP; i > -1; i--)
        {
            printf("\n %d \n", STK[i]);
        }
    }
}

```

```
itl4@22DL407:~/Desktop$ gedit yug.c
itl4@22DL407:~/Desktop$ gcc yug.c
itl4@22DL407:~/Desktop$ ./a.out
    WELCOME to implementation of STACK using array !!
enter the size of Stack (Maximum size=100):3

Stack Operation available:
    1.Push    2.Pop    3.Peep    4.Display    5.Exit

Enter your choice: 1
Enter the element to be pushed: 2

Stack Operation available:
    1.Push    2.Pop    3.Peep    4.Display    5.Exit

Enter your choice: 2
The popped element is: 2

Stack Operation available:
    1.Push    2.Pop    3.Peep    4.Display    5.Exit

Enter your choice: 3
Enter the position of the element from the top which you want to peep: 3
Stack Underflow on Peep

Stack Operation available:
    1.Push    2.Pop    3.Peep    4.Display    5.Exit

Enter your choice: 4
Stack is empty

Stack Operation available:
    1.Push    2.Pop    3.Peep    4.Display    5.Exit

Enter your choice: 5
itl4@22DL407:~/Desktop$
```