

```

/* NAME      :MOHAMMED SINAN.P
ROLL.NO     :39
DATE        :27/10/22
PROGRAM     :IMPLEMENTATION OF STACK USING ARRAY
INSTITUTION :MES COLLEGE OF ENGINEERING */

```

```

#include<stdio.h>
int choice,front=-1,rear=-1,SIZE,a[100],x,i;
void enqueue();
void dequeue();
void display();
void main()
{
    printf("Enter the Queue length");
    scanf("%d",&SIZE);
    do
    {
        printf("\nMENU\n.....\n");
        printf("1.ENQUEUE\n2.DEQUEUE\n3.DISPLAY\n4.EXIT\n");
        printf("ENTER YOUR CHOICE\t");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:enqueue();
                    break;
            case 2:dequeue();
                    break;
            case 3:display();
                    break;
            case 4:printf("EXITED FROM MENU");
                    break;
            default:("\nWrong selection");
        }
    }while(choice!=4);
}
void enqueue()
{
    if(rear==SIZE-1)
        printf("\n!!! OVERFLOW !!!");
    else if(rear==-1 && front==-1)
    {
        printf("Enter the element to be inserted:  ");
        scanf("%d",&x);
        rear=rear+1;
        front=front+1;
        a[rear]=x;
        printf("\nInsertion is success");
    }
    else
    {
        printf("Enter the element to be inserted:  ");
        scanf("%d",&x);
        rear=rear+1;
        a[rear]=x;
        printf("\nInsertion is success");
    }
}

```

```

}
void dequeue()
{
    if(rear== -1 && front== -1)
        printf("\n!!! UNDERFLOW !!!");
    else if(rear==front)
    {
        printf("\nDeleted Element:%d",a[front]);
        rear= -1;
        front= -1;
    }
    else
    {
        printf("\nDeleted Element:%d",a[front]);
        front=front+1;
    }
}
void display()
{
    if(front== -1 && rear== -1)
        printf("\n!!! UNDERFLOW !!!");
    else
    {
        printf("\nQueue elements are:\n");
        for(i=front;i<=rear;i++)
            printf("%d\n",a[i]);
    }
}
}

```

Output :-

Enter the Queue length

4

MENU

.....

1.ENQUEUE

2.DEQUEUE

3.DISPLAY

4.EXIT

ENTER YOUR CHOICE 1

Enter the element to be inserted: 5

Insertion is success

MENU

.....

1.ENQUEUE

2.DEQUEUE

3.DISPLAY

4.EXIT

ENTER YOUR CHOICE 1

Enter the element to be inserted: 7

Insertion is success

MENU

.....

1.ENQUEUE

2.DEQUEUE

3.DISPLAY
4.EXIT
ENTER YOUR CHOICE 3
Queue elements are:
5
7

MENU
.....
1.ENQUEUE
2.DEQUEUE
3.DISPLAY
4.EXIT
ENTER YOUR CHOICE 2
Deleted Element:5
MENU

.....
1.ENQUEUE
2.DEQUEUE
3.DISPLAY
4.EXIT
ENTER YOUR CHOICE 2
Deleted Element:7
MENU

.....
1.ENQUEUE
2.DEQUEUE
3.DISPLAY
4.EXIT
ENTER YOUR CHOICE 2
!!! UNDERFLOW !!!
MENU

.....
1.ENQUEUE
2.DEQUEUE
3.DISPLAY
4.EXIT
ENTER YOUR CHOICE 4
EXITED FROM MENU