

DS lab 4

```
#include<stdio.h>

#include<stdlib.h>

#define MAX 50

int Q[MAX];

int front = -1;

int rear = -1;

void insert()
{
    int elem;
    if(rear==MAX-1)
        printf("\nQueue Overflow!!!\n");
    else
    {
        if(front==-1)
            front=0;
        printf("\nEnter the element to be inserted into the Queue: ");
        scanf("%d",&elem);
        Q[++rear]=elem;
        printf("\nElement successfully inserted!!!\n");
    }
}
```

```
void delete()
{
    if(front==-1 || front>rear)
        printf("\nQueue underflow!!!\n");
    else
    {
        printf("\nDeleted Element: %d\n",Q[front++]);
        if(front>rear)
        {
            front=-1;
            rear=-1;
        }
    }
}
```

```
void display()
{
    int i;
    if(front==-1)
        printf("\nQueue is empty!!!\n");
    else
    {
        printf("\nQueue Elements are: \n");
        for(i=front;i<=rear;i++)
            printf("\n%d",Q[i]);
    }
}
```

```

        printf("\n");
    }
}

int main()
{
    int choice;

    while(1)
    {
        printf("\n-----MENU-----");
        printf("\n[1]INSERT\n[2]DELETE\n[3]DISPLAY\n[4]EXIT");
        printf("\nEnter you choice: ");
        scanf("%d",&choice);

        switch(choice)
        {
            case 1:
                insert();
                break;

            case 2:
                delete();
                break;

            case 3:
                display();
                break;

```

```
        case 4:
            exit(1);
        default:
            printf("\nInvalid choice!!!\n");
    }
}
return 0;
}
```

Element successfully inserted!!!

-----MENU-----

[1] INSERT

[2] DELETE

[3] DISPLAY

[4] EXIT

Enter you choice: 1

Enter the element to be inserted into the Queue: 6

Element successfully inserted!!!

-----MENU-----

[1] INSERT

[2] DELETE

[3] DISPLAY

[4] EXIT

Enter you choice: 3

Queue Elements are:

5

6

-----MENU-----

[1] INSERT

[2] DELETE

[3] DISPLAY

[4] EXIT

Enter you choice: 4

...Program finished with exit code 1

Press ENTER to exit console.