Shashank Patel C J

1BM22CS255

Queue Operations:

```
#include <stdio.h>
#include <stdlib.h>
#define MAX 5
int q[MAX];
int front = -1;
int rear = -1;

void insert();
int delete_q();
void display();

int main()
{
   while (1)
   {
      int choice,d;
      printf("\n 1. insert \t 2.delete \t 3.display \t 4.exit\n");
      scanf("%d", &choice);
      switch (choice)
      {
      case 1:
```

```
            insert();
            break;
        case 2:
            d=delete_q();
             if (d!= -1)
                printf("\n The number deleted is : %d", d);
            break;
        case 3:
            display();
            break;
        case 4:
            exit(0);
        }
    }
}

void insert()
{
    if (rear == MAX - 1)
    {
        printf("Queue is Full\n");
        return;
    }
    printf("Enter the element to be inserted\n");
```

```
    int a;
    scanf("%d", &a);
    if ((front == -1) && (rear == -1))
    {
        front = rear = 0;
    }
    else
    {
        rear++;
    }
    q[rear] = a;
}

int delete_q()
{
    int val;
    if(front==-1 ||rear<front)
    {
        printf("Underflow\n");
        return -1;
    }
    else{
        val=q[front];
        front++;
```

```
        if(front>rear)
        {
           front=rear=-1;
        }
        return val;
    }
}
void display()
{
    printf("the elements are:\t");
    for (int i = front; i <= rear; i++)
    {
        printf("%d \t", q[i]);
    }
}
```

Output:

```
 1. insert       2.delete        3.display       4.exit
1
Enter the element to be inserted
10

 1. insert       2.delete        3.display       4.exit
1
Enter the element to be inserted
20

 1. insert       2.delete        3.display       4.exit
1
Enter the element to be inserted
30

 1. insert       2.delete        3.display       4.exit
1
Enter the element to be inserted
40

 1. insert       2.delete        3.display       4.exit
1
Enter the element to be inserted
50

 1. insert       2.delete        3.display       4.exit
2

 The number deleted is : 10
 1. insert       2.delete        3.display       4.exit
2

 The number deleted is : 20
 1. insert       2.delete        3.display       4.exit
3
the elements are:       30      40      50
 1. insert       2.delete        3.display       4.exit
4

Process returned 0 (0x0)   execution time : 48.482 s
Press any key to continue.
```