

```

1  #include<stdio.h>
2  #include<stdlib.h>
3  #define N 5
4  int queue[N];
5  int front=-1,rear=-1;
6  void enqueue(int x){
7      if( rear==1 && front==1){
8          front=rear=0;
9          queue[rear]=x;
10         printf("%d is inserted into queue\n",x);
11     }
12     else if(rear==N-1){
13         printf("Queue overflow\n");
14     }
15     else{
16         queue[++rear]=x;
17         printf("%d is inserted into queue\n",x);
18     }
19 }
20 void dequeue(){
21     if (front==1 | front>rear){
22         printf("Queue underflow\n");
23     }
24     else{
25         printf("%d is deleted from queue\n",queue[front++]);
26     }
27 }
28 void display(){
29     if (front==1 | front>rear){
30         printf("Queue underflow\n");
31     }
32     else{
33         printf("Elements in the queue are\n");
34         for(int i=front;i<=rear;i++){
35             printf("%d\t",queue[i]);
36         }
37         printf("\n");
38     }
39 }
40 int main(){
41     int ch;
42     while(1){
43         printf("\nselect operation on queue to perform\n");
44         printf("1.Insertion\t2.Deletion\t3.Display\t4.Exit\n");
45         scanf("%d",&ch);
46         switch(ch){
47             case 1:
48                 printf("\nEnter an element to be inserted:");
49                 int x;
50                 scanf("%d",&x);
51                 enqueue(x);
52                 break;
53             case 2:
54                 dequeue();
55                 break;
56             case 3:
57                 display();
58                 break;
59             case 4:
60                 exit(0);
61             default:
62                 printf("Invalid choice\n");
63                 break;
64         }
65     }
66     return 0;
67 }

```

```
select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
1

Enter an element to be inserted:10
10 is inserted into queue

select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
2
10 is deleted from queue

select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
2
Queue underflow

select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
1

Enter an element to be inserted:106
106 is inserted into queue

select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
1

Enter an element to be inserted:978
978 is inserted into queue

select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
1

Enter an element to be inserted:32
32 is inserted into queue

select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
3
Elements in the queue are
106    978    32

select operation on queue to perform
1.Insertion    2.Deletion    3.Display    4.Exit
4

Process returned 0 (0x0)    execution time : 29.574 s
Press any key to continue.
```