

circular Queue program

```
#include <stdio.h>
#include <conio.h>
#define QUE_SIZE 5
int item, front = 0, rear = -1, q[QUE_SIZE], count = 0;
void insertrear()
{
    if (count == QUE_SIZE)
    {
        printf("queue overflow\n");
        return;
    }
    rear = (rear + 1) % QUE_SIZE;
    q[rear] = item;
    count++;
}

int deletefront()
{
    if (count == 0) return -1;
    item = q[front];
    front = (front + 1) % QUE_SIZE;
    count = count - 1;
    return item;
}

void display()
{
    int i;
    if (count == 0)
    {
        printf("queue is empty\n");
        return;
    }
}
```



```

printf("Contents of queue\n");
for (i = 1; i <= count; i++)
{
    printf("%d\n", q[i]);
    front = (front + 1) % QUE_SIZE;
}
}

```

```

void main()
{
    int choice;
    for(;;)
    {
        printf("\n1: insertrear\n2: deletefront\n3: display\n4: exit\n");

```

```

        printf("Enter the choice\n");

```

```

        scanf("%d", &choice);

```

```

        switch(choice)

```

```

        {
            case 1: printf("Enter the item to be inserted\n");
                    scanf("%d", &item);
                    insertrear();
                    break;

```

```

            case 2: item = deletefront()

```

```

                    if (item == -1)

```

```

                        printf("Q is empty");

```

```

                    else

```

```

                        printf("item deleted = %d\n", item);

```

```

                        break;

```

```

            case 3: display(); break;

```

```

            default: exit(0);

```

```

        }
    }
}

```

```

1 #include<stdio.h>
2 #include<stdlib.h>
3 #define QUE_SIZE 2
4 int item,front=0,rear=-1,q[QUE_SIZE],count=0;
5 void insertrear()
6 {
7     if(count==QUE_SIZE)
8     {
9         printf("queue overflow\n");
10        return;
11    }
12    rear=(rear+1)%QUE_SIZE;
13    q[rear]=item;
14    count++;
15 }
16
17 int deletefront()
18 {
19     if(count==0) return -1;
20     item=q[front];
21     front=(front+1)%QUE_SIZE;
22     count=count-1;
23     return item;
24 }
25
26 void displayQ()
27 {
28     int i,f;
29     if(count==0)
30     {
31         printf("queue is empty\n");
32         return;
33     }
34     f=front;
35     printf("Contents of queue \n");
36     for(i=1;i<=count;i++)
37     {
38         printf("%d\n",q[f]);
39         f=(f+1)%QUE_SIZE;
40     }
41 }
42
43 void main()
44 {
45     int choice;
46     for(;;)
47     {
48         printf("\n1:insertrear\n2:deletefront\n3:display\n4:exit\n");
49         printf("enter the choice\n");
50         scanf("%d",&choice);

```

```

main.c
47 {
48     int choice;
49
50     for(;;)
51     {
52         printf("\n1:insertrear\n2:deletefront\n3:display\n4:exit\n");
53         printf("enter the choice\n");
54         scanf("%d",&choice);
55
56         switch(choice)
57         {
58             case 1:printf("enter the item to be inserted\n");
59                     scanf("%d",&item);
60                     insertrear();
61                     break;
62             case 2:item=deletefront();
63                     if(item==1)
64                         printf("queue is empty\n");
65                     else
66                         printf("item deleted =%d\n",item);
67                     break;
68             case 3:displayQ();
69                     break;
70             default:printf(0);
71         }
72     }
73     getch();
74 }

```

input

```

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
1
enter the item to be inserted
7

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
1
enter the item to be inserted
8

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
1
enter the item to be inserted

```

enter the item to be inserted

9

1:insertrear

2:deletefront

3:display

4:exit

enter the choice

3

Contents of queue

7

8

9

1:insertrear

2:deletefront

3:display

4:exit

enter the choice

1

enter the item to be inserted

4

queue overflow

1:insertrear

2:deletefront

3:display

4:exit

enter the choice

2

item deleted =7

1:insertrear

2:deletefront

3:display

4:exit

enter the choice

2

item deleted =8

1:insertrear

2:deletefront

3:display

4:exit

enter the choice

2

item deleted =9

1:insertrear

2:deletefront

3:display

4:exit

```
1:insertrear
2:deletefront
3:display
4:exit
enter the choice
2
item deleted =9

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
2
queue is empty

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
1
enter the item to be inserted
5

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
4

...Program finished with exit code 0
Press ENTER to exit console.
```