

## **LAB PROGRAM 4-CIRCULAR QUEUE EXECUTION**

```
#include<stdio.h>
```

```
#include<stdlib.h>
```

```
#define QUE_SIZE 3
```

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

```
f=front;

printf("Contents of queue \n");

for(i=1;i<=count;i++)

{

printf("%d\n",q[f]);

f=(f+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("queue is empty\n");
```

```
    else
```

```
        printf("item deleted =%d\n",item);  
        break;  
case 3:displayQ();  
        break;  
case 4:exit(0);  
break;  
default:printf("Invalid choice\n");  
}  
}  
}
```

## **OUTPUT:**

**1.insert rear**

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

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

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

## 2.delete front

```
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
1
enter the item to be inserted
5
queue overflow

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

### 3.display

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

1:insertrear
2:deletefront
3:display
4:exit
enter the choice
3
Contents of queue
2
3
3
```