

// Circular queue

```
#include<stdio.h>

#include<stdlib.h>

#include<process.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");
        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");
        return;
    }
    f=front;
    printf("contents of queue \n");
    for(i=0;i<=count;i++)
    {
        printf("%d\n",q[f]);
        f=(f+1)%que_size;
    }
}

void main()
{
    int choice;
    for(;;)
    {
        printf("\n1.Insert rear \n2.Delete front \n3.Display \n4.exit \n ");
        printf("Enter the choice : ");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:printf("Enter the item to be inserted :");
                    scanf("%d",&item);
                    insertrear();
                    break;
            case 2:item=deletefront();
                    if(item==-1)
                        printf("queue is empty\n");
                    else
                        printf("item deleted is %d \n",item);
                    break;

```

```

        case 3:displayq();

                break;

        default:exit(0);

    }

}

getch();

}

```

C:\Users\Samarth\Desktop\cqueue.exe

```

1.Insert rear
2.Delete front
3.Display
4.exit
Enter the choice : 1
Enter the item to be inserted :3

1.Insert rear
2.Delete front
3.Display
4.exit
Enter the choice : 1
Enter the item to be inserted :2

1.Insert rear
2.Delete front
3.Display
4.exit
Enter the choice : 2
item deleted is 3

1.Insert rear
2.Delete front
3.Display
4.exit
Enter the choice : 3
contents of queue
2
0

1.Insert rear
2.Delete front
3.Display
4.exit
Enter the choice : 4

-----
Process exited after 52.64 seconds with return value 0
Press any key to continue . . .

```

//LINEAR QUEUE

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

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

```
#define QUE_SIZE 3
```

```
int item,front=0,rear=-1,q[10];
```

```
void insertrear()
```

```
{if(rear==QUE_SIZE-1)
```

```
{
```

```
    printf("queue overflow\n");
```

```
    return;
```

```

}
rear=rear+1;
q[rear]=item;
}int deletefront()
{if (front>rear)
{front=0;
rear=-1;
return -1;
}return q[front++];
}void displayQ()
{int i;
if (front>rear)
{
printf("queue is empty\n");
return;
}
printf("contents of queue\n");
for(i=front;i<=rear;i++)
{
printf("%d\n",q[i]);
}}
int main()
{
int choice;
for(;;)
{
printf("1:insertrear 2:deletefront 3:display 4: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;
    default:exit (0);
}
}

```

```

C:\Users\jagannath\Desktop\queue.c
1:insertrear 2:deletefront 3:display 4:exit
enter the choice
1
enter the item to be inserted
10
1:insertrear 2:deletefront 3:display 4:exit
enter the choice
1
enter the item to be inserted
20
1:insertrear 2:deletefront 3:display 4:exit
enter the choice
2
item deleted=10
1:insertrear 2:deletefront 3:display 4:exit
enter the choice
3
contents of queue
20
1:insertrear 2:deletefront 3:display 4:exit
enter the choice
4

-----
Process exited after 14.02 seconds with return value 0
Press any key to continue . . .

```