

```
/*dequeue ,enqueue,display using circular queue*/
```

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

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

```
#define MAX 10
```

```
int front=0;    //we will start the index from 1
```

```
int rear=0;
```

```
int queue[MAX];
```

```
void insert_queue();
```

```
void delete_queue();
```

```
void display_queue();
```

```
int main()
```

```
{
```

```
int ch;
```

```
while(1)
```

```
{
```

```
printf("***main menu**\n");
```

```
printf("press 1 for insert element\n");
```

```
printf("press 2 for delete element\n");
```

```
printf("press 3 for display\n");
```

```
printf("press 4 for exit\n");
```

```
printf("enter your choice\n");
```

```
scanf("%d",&ch);
```

```
switch(ch)
```

```
{
```

```
case 1:insert_queue();
```

```
break;
```

```
case 2:delete_queue();
```

```
break;
```

```
case 3:display_queue();
```

```
break;
```

```
case 4:exit(0);
```

default:

```
printf("invalid choice\n");
```

```
}
```

```
}
```

```
}
```

```
void insert_queue()
```

```
{
```

```
int item;
```

```
if(((rear%MAX)+1)==front)
```

```
{
```

```
printf("queue is full\n");
```

```
}
```

```
else
```

```
{
```

```
if(front==0 && rear==0)
```

```
{
```

```
front=1;
```

```
}
```

```
rear=(rear%MAX)+1;
```

```
printf("enter a value to be inserted\n");
```

```
scanf("%d",&item);
```

```
queue[rear]=item;
```

```
}
```

```
printf("the value is inserted\n");
```

```
}
```

```
void delete_queue()
```

```
{
```

```
int x;          //here,item=x
```

```
if(front==0)
```

```
{
```

```
printf("queue is empty\n");
```

```

}
else
{
x=queue[front];
if(front==rear)    //queue has only one element
{
    front=0;
    rear=0;
    printf("only element of this queue is deleted\n");
}
else
{
    front=(front%MAX)+1;
    printf("%d is deleted\n",x);
}
}
}

void display_queue()
{
printf("the queue is below\n");
int i;
if(rear==0 && front==0)
{
printf("queue is empty\n");
}
else
{
for(i=front;i<=rear;i++)
{
printf("%d\n",queue[i]);
}
}
}

```

}

}

```
C:\Users\HP\OneDrive\Desktop\collage work 3rd sem\circular queue deletion insertion display.exe

**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
1
enter a value to be inserted
10
the value is inserted
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
1
enter a value to be inserted
20
the value is inserted
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
1
enter a value to be inserted
30
the value is inserted
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
2
10 is deleted
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
3
the queue is below
20
30
40
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
2
20 is deleted
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
1
the queue is below
30
40
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
2
30 is deleted
```

```
C:\Users\HP\OneDrive\Desktop\collage work 3rd sem\circular queue deletion insertion display.exe
20 is deleted
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
3
the queue is below
30
40
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
0
30 is deleted
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
3
the queue is below
40
**main menu**
press 1 for insert element
press 2 for delete element
press 3 for display
press 4 for exit
enter your choice
4
-----
Process exited after 96.21 seconds with return value 0
Press any key to continue . . .
```