```c
#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");
      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]);
```

```
36          printf("%d\n",q[f]);
37          f=(f+1)%que_size;
38      }
39  }
40  int main()
41  {
42      int choice;
43      for(;;)
44      {
45          printf("\n1.Insert rear \n2.Delete front \n3.
    Display \n4.exit \n ");
46          printf("Enter the choice : ");
47          scanf("%d",&choice);
48          switch(choice)
49          {
50              case 1:printf("Enter the item to be
    inserted :");
51                  scanf("%d",&item);
52                  insertrear();
53                  break;
54              case 2:item=deletefront();
55                  if(item==-1)
56                  printf("queue is empty\n");
57                  else
58                  printf("item deleted is %d \n",item);
59                  break;
60              case 3:displayq();
61                  break;
62              default:exit(0);
63          }
64      }
65  }
```

```
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 : 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 :4

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

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

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

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

```c
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#define N 3
void pqinsert(int);
void pqdelete();
void display();
int queue[3][N];
int front[3]={0,0,0};
int rear[3]={-1,-1,-1};
int item,pr;
int main()
{
int ch;
while(1)
{
printf("\nPRIORITY QUEUE\n");
printf("*****************\n");
printf("\n\t1:PQinsert\n");
printf("\n\t2:PQdelete\n");
printf("\n\t3:PQdisplay\n");
printf("\n\t4:Exit\n");
printf("\nenter the choice\n");
scanf("%d",&ch);
switch(ch)
{
 case 1:printf("\n enter the priority number\n");
        scanf("%d",&pr);
        if(pr>0 && pr<4)
        pqinsert(pr-1);
        else
        printf("\n only 3 priority exists 1 2 3\n");
        break;
case 2:pqdelete();
       break;
case 3:display();
```

```
37        break;
38  case 4:exit(0);
39  }
40  }
41  getch();
42  }
43   void pqinsert(int pr)
44  {
45   if(rear[pr]==N-1)
46   printf("\n Queue overflow\n");
47   else
48   {
49   printf("\n enter the item\n");
50   scanf("%d",&item);
51   rear[pr]++;
52   queue[pr][rear[pr]]=item;
53   }
54
55  }
56  void pqdelete()
57  {
58  int i;
59  for(i=0;i<3;i++)
60  {
61    if(rear[i]==front[i]-1)
62    printf("\n queue empty\n");
63    else
64    {
65    printf("deleted item is %d of queue %d\n",
    queue[i][front[i]],i+1);
66    front[i]++;
67
68    }
69   }
70  }
71  void display()
```

```
61    if(rear[i]==front[i]-1)
62    printf("\n queue empty\n");
63    else
64    {
65    printf("deleted item is %d of queue %d\n",
      queue[i][front[i]],i+1);
66    front[i]++;
67
68    }
69   }
70  }
71  void display()
72  {
73  int i,j;
74  for(i=0;i<3;i++)
75  {
76  if(rear[i]==front[i]-1)
77    printf("\n queue empty %d\n",i+1);
78  else
79    {
80    printf("\nQUEUE %d:",i+1);
81    for(j=front[i];j<=rear[i];j++)
82      printf("%d\t",queue[i][j]);
83    }
84  }
85  }
```

```
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

 enter the priority number
1

 enter the item
1

PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

 enter the priority number
3

 enter the item
3

PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

 enter the priority number
2

 enter the item
2
```

```
        4:Exit

enter the choice
1

 enter the priority number
3

 enter the item
3

PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

 enter the priority number
2

 enter the item
2

PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
3

QUEUE 1:1
QUEUE 2:2
QUEUE 3:3
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
```