→ Multiple Priority Queue

```
#include <stdio.h>
#include <conio.h>
#include <stdlib.h>
#define N 3
int queue[3][N];
int front[3] = {0, 0, 0};
int rear[3] = {-1, -1, -1};
int item, pr;
void pqinsert (int pr) {
  if (rear[pr] == N-1)
     printf ("\n Queue Overflow \n");
  else {
     printf ("\n Enter item \n");
     scanf ("%d", &item);
     rear[pr]++;
     queue[pr][rear[pr]] = item;
    }
  return;
}
void pqdelete() {
 int i;
 for(i=0; i<3; i++) {
  if (rear[i] == front[i]-1)
    printf ("\n queue empty \n");
  else {
    printf ("deleted item %d of queue %d\n",
              queue[i][front[i]], i+1);
    front[i]++;
   }
 }
}
```

```
void display() {
int i,j;
for(i=0; i<3; i++) {
 if(rear[i] == front[i]-1)
    printf("\n queue empty \n");
 else {
    printf("\n Queue %d:", i+1);
    for(j=front; j<=rear; j++)
       printf("%d \t", queue[i][j]);
    }
 }
}
int main() {
int ch;
while(1) {
printf("\n 1. PQ insert");
printf("\n 2. PQ delete");
printf("\n 3. PQ display");
printf("\n 4. Exit");
scanf("%d", &ch);
switch(ch) {
case 1: printf("enter priority number \n");
        scanf("%d", &pr);
        if(pr>0 && pr<4)
        pqinsert(pr-1);
        else
        printf("Only 3 priority exists \n");
        break;
case 2: pqdelete(); break;
case 3: display(); break;
case 4: exit(0); }
if(pr==4) break;
  return 0;
}
```

```c
#include<stdio.h>
#include<conio.h>
#include <stdlib.h>
#define N 3
int queue[3][N];
int front[3]={0,0,0};
int rear[3]={-1,-1,-1};
int item,pr;
void pqinsert(int pr)
{
 if(rear[pr]==N-1)
 printf("\n Queue overflow\n");
 else
 {
 printf("\nenter the item\n");
 scanf("%d",&item);
 rear[pr]++;
 queue[pr][rear[pr]]=item;
 }
 return;
}
void pqdelete()
{
int i;
for(i=0;i<3;i++)
{
  if(rear[i]==front[i]-1)
  printf("\nqueue empty\n");
  else
  {
  printf("deleted item is %d of queue %d\n",queue[i][front[i]],i+1);
  front[i]++;
  }
 }
}
void display()
{
int i,j;
```

```
}
void display()
{
int i,j;
for(i=0;i<3;i++)
{
if(rear[i]==front[i]-1)
  printf("\nqueue empty %d\n",i+1);
else
  {
  printf("\nQUEUE %d:",i+1);
  for(j=front[i];j<=rear[i];j++)
    printf("%d\t",queue[i][j]);
  }
}
}
int main()
{
int ch;
while(1)
{
printf("PRIORITY 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("\nenter the priority number\n");
        scanf("%d",&pr);
        if(pr>0 && pr<4)
        pqinsert(pr-1);
        else
        printf("\nonly 3 priority exists 1 2 3\n");
        break;
```

```
  }
}
}
int main()
{
int ch;
while(1)
{
printf("PRIORITY 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("\nenter the priority number\n");
        scanf("%d",&pr);
        if(pr>0 && pr<4)
        pqinsert(pr-1);
        else
        printf("\nonly 3 priority exists 1 2 3\n");
        break;
case 2:pqdelete();
       break;
case 3:display();
       break;
case 4:exit(0);
}
if(pr==4)
    break;
}
getch();
return 0;
}
```

```
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
1

enter the item
11
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

Enter the choice
```

```
Enter the choice
1

enter the priority number
1

enter the item
111
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
1

enter the priority number
2

enter the item
22
PRIORITY QUEUE
*****************
```

```
22
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
2
deleted item is 1 of queue 1
deleted item is 2 of queue 2
deleted item is 3 of queue 3
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

Enter the choice
3
```

```
**********

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

Enter the choice
3

QUEUE 1:11      111
QUEUE 2:22
queue empty 3
PRIORITY QUEUE
**********

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

Enter the choice
```