Lab-7 Practice Program

Implement Priority Queue:

```
#include<stdio.h>

#define N 3
int queue[3][N];
int front[3]={0,0,0};
int rear[3]={-1,-1,-1};
int item,pr;
void 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("\only 3 priority exists 1 2 3\n");
                break;
case 2:pqdelete();
          break;
case 3:display();
          break;
case 4:exit(0);
}
}
getch();
}
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;
}
pqdelete()
{
int i;
for(i=0;i<3;i++)
{
  if(rear[i]==front[i]-1)
  printf("\queue empty\n");
  else
  {
  printf("deleted item is %d of queue %d\n",queue[i][front[i]],i+1);
  front[i]++;
  return;
  }
 }
}
display()
{
int i,j;
for(i=0;i<3;i++)
{
if(rear[i]==front[i]-1)
  printf("\queue 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]);
  }
}
  return;
}
```

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

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
3

QUEUE 1:30
QUEUE 2:20
QUEUE 3:10      PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
2
deleted item is 30 of queue 1
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
2
queue empty
deleted item is 20 of queue 2
```

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

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
2
queue empty
queue empty
deleted item is 10 of queue 3
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
2
queue empty
queue empty
queue empty
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
4

Process returned 0 (0x0)   execution time : 44.368 s
Press any key to continue.
```

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

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

enter the priority number
3

enter the item
10
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

enter the priority number
2

enter the item
20
```

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

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

enter the priority number
1

enter the item
30
PRIORITY QUEUE
*****************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

enter the priority number
4
only 3 priority exists 1 2 3
```