Multiple Priority Queue

```
#include<stdio.h>
#include<conio.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("\n1: PQinsert 2: PQdelete 3: PQdisplay
4: Exit\n");
printf("Enter the choice:");
scanf("%d",&ch);
switch(ch)
{
case 1: printf("Enter the priority number:");
        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("Queue overflow\n");
    else
    {
     printf("Enter the item :");
     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;
     }
   }
}
void display()
{
  int i,j;
  for(i=0; i<3; i++)
  {  printf("Queue %d is empty \n", i+1);
     if(rear[i] == front[i]-1)
       printf("Queue %d is empty \n", i+1);
     else
     {
       printf("Queue %d", i+1);
```

```
for (j = front[i]; j <= rear[i]; j++)
printf("%d\t", queue[i][j]);
printf("\n");
}
}
return;
}
```

Output:

```
1. PQinsert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 1
Enter the priority number: 1
Enter the item: 10

1. PQinsert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 1
Enter the priority number: 1
Enter the item: 20

1. PQinsert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 1
Enter the priority number: 4
Only 3 priority exists 1, 2 3.
```

1. PQinsert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 1
Enter the priority number: 2
Enter the item: 2

1. PQinsert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 1
Enter the priority number: 1
Enter the item: 30

1. PQinsert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 1
~~Enter item to be~~
Enter the priority number: 1
Queue overflow

1. PQinsert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 2
Deleted item is 10 of queue 1.

1. PQ insert 2. PQdelete 3. PQdisplay 4. Exit
Enter the choice: 3
QUEUE 1: 20 30
QUEUE 2: 2
Queue 3 is empty.