

02/11

Multiple priority queue

```
#include <stdio.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;
int main()
{
    int ch;
    while(1)
    {
        printf(" PRIORITY QUEUE \n");
        printf(" **** *\n");
        printf(" 1: PQinsert\n");
        printf(" 2: PQdelete\n");
        printf(" 3: PQdisplay\n");
        printf(" 4: Exit\n");
        printf(" Enter the choice\n");
        scanf("%d", &ch);
        switch(ch)
        {
            case 1: printf(" Enter the priority number\n");
                      scanf("%d", &pr);
                      if(pr > 0 && pr < 4)
                          int pqinsert(pr-1);
                      else

```

```
    printf("In only 3 priority exists 1 2 3 \n");
    break;
case 2: int pqdelct();
    break;
case 3: int display();
    break;
case 4: exit(0);
}
}
}
```

```
int pginsert(int pn)
{
    if (rear[pn]==N-1)
        printf("In Queue overflow\n");
    else
    {
        printf("In enter the item\n");
        scanf("%d", &item);
        rear[pn]++;
        queue[pn][rear[pn]] = item;
    }
}
```

```
int pqdelete()
{
    int i;
    for (i=0; i<3; i++)
    {
        if (rear[i] == front[i]-1)
            printf("In queue empty\n");
    }
}
```

```
else
{
    printf("Deleted item is %d of queue %d\n",
           queue[i][front[i]], i+1);
    front[i]++;
}
}

int display()
{
    int i;
    for(i=0; i<3; i++)
    {
        if (rear[i] == front[i]-1)
            printf("\n queue empty %d\n", i+1);
        else
        {
            printf("In QUEUE %d: ", i+1);
            for(j = front[i]; j <= rear[i]; j++)
                printf("%d\t", queue[i][j]);
        }
    }
}
```

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Files main.c

```
1 //multiple pq
2 #include<stdio.h>
3 #include<stdlib.h>
4 #define N 3
5 int queue[3][N];
6 int front[3]={0,0,0};
7 int rear[3]={-1,-1,-1};
8 int item,pr;
9
10 void pqinsert(int pr)
11 {
12 if(rear[pr]==N-1)
13 printf("\n Queue overflow\n");
14 else
15
16 {
17 printf("\nEnter the item\n");
18 scanf("%d",&item);
19 rear[pr]++;
20 queue[pr][rear[pr]]=item;
21 }
22 return;
23 }
24 void pqdelete()
25 {
```

```
clang-7 -pthread -lm -o main main.c
./main
PRIORITY QUEUE
*****
1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
1

enter the priority number
1

enter the item
10
PRIORITY QUEUE
*****
1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
1

enter the priority number
1

enter the item
20
PRIORITY QUEUE
*****
1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
1
```

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Files main.c

```
main.c
24 void pqdelete()
25 {
26     int i;
27     for(i=0;i<3;i++)
28     {
29         if(rear[i]==front[i]-1){
30             printf("queue empty\n");
31         }
32         else
33         {
34             printf("deleted item is %d of queue %d\n",queue[i]
35 [front[i]],i+1);
36             front[i]++;
37             return;
38         }
39     }
40     void display()
41     {
42         int i,j;
43         for(i=0;i<3;i++)
44         {
45             if(rear[i]==front[i]-1)
46                 printf("queue empty %d\n",i+1);
47             else
```

enter the priority number
30
only 3 priority exists 1 2 3
PRIORITY QUEUE

1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
1

enter the priority number
2

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
44
PRIORITY QUEUE

1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice

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Files main.c

```
main.c
49     printf("\nQUEUE %d:",i+1);
50     for(j=front[i];j<=rear[i];j++)
51         printf("%d\t",queue[i][j]);
52     }
53 }
54 return;
55 }
56 int main()
57 {
58     int ch;
59
60     while(1)
61     {
62         printf("PRIORITY QUEUE\n");
63         printf("*****\n");
64         printf("\t1:PQinsert");
65         printf("\t2:PQdelete");
66         printf("\t3:PQdisplay");
67         printf("\t4:Exit\n");
68         printf("enter the choice\n");
69         scanf("%d",&ch);
70         switch(ch)
71         {
72             case 1:printf("\nEnter the priority number\n");
73                 scanf("%d",&pr);
```

3

```
QUEUE 1:10 20
QUEUE 2:3 44 444 queue empty 3
PRIORITY QUEUE
*****
1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
2
deleted item is 10 of queue 1
PRIORITY QUEUE
*****
1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
2
deleted item is 20 of queue 1
PRIORITY QUEUE
*****
1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
3
queue empty 1

QUEUE 2:3 44 444 queue empty 3
PRIORITY QUEUE
*****
1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
4
```

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Files main.c

```
main.c
66 printf("\t3:PQdisplay");
67 printf("\t4:Exit\n");
68 printf("enter the choice\n");
69 scanf("%d",&ch);
70 switch(ch)
71 {
72     case 1:printf("\nEnter the priority number\n");
73     |    scanf("%d",&pr);
74     |    if(pr>0 && pr<4)
75     |        pqinsert(pr-1);
76     |    else{
77     |        printf("only 3 priority exists 1 2 3\n");
78     |    }
79     |    break;
80     case 2:pqdelete();
81     |    break;
82     case 3:display();
83     |    break;
84     case 4:exit(0);
85     }
86     }
87 }
```

3
QUEUE 1:10 20
QUEUE 2:3 44 444 queue empty 3
PRIORITY QUEUE

1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
2
deleted item is 10 of queue 1
PRIORITY QUEUE

1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
2
deleted item is 20 of queue 1
PRIORITY QUEUE

1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
3
queue empty 1
QUEUE 2:3 44 444 queue empty 3
PRIORITY QUEUE

1:PQinsert 2:PQdelete 3:PQdisplay 4:Exit
enter the choice
4
|

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