

→ 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, pri;
```

```
void pginser (int pri) {
```

```
    if (rear[pri] == N-1)
```

```
        printf ("In Queue Overflow\n");
```

```
    else {
```

```
        printf ("Enter item\n");
```

```
        scanf ("%d", &item);
```

```
        rear[pri]++;
        queue [pri][rear[pri]] = item;
```

```
}
```

```
return;
```

```
2
```

```
void pgdelete() {
```

```
    int i;
```

```
    for (i=0; i<3; i++) {
```

```
        if (rear[i] == front[i]-1)
```

```
            printf ("In queue empty\n");
```

```
        else {
```

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

```
            front[i]++;
        }
```

```
3
```

```
3
```

```

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

```

3

```

int main () {
    int ch;
    while (1) {
        printf ("\n 1. PQinsert ");
        printf ("\n 2. PQdelete ");
        printf ("\n 3. PQdisplay ");
        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 ();
            case 3: display ();
            case 4: exit (0);
        }
        if (pr == 4) break;
    }
    return 0;
}

```

3

```
1 #include<stdio.h>
2 #include<conio.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 void pqinsert(int pr)
10 {
11     if(rear[pr]==N-1)
12         printf("\n Queue overflow\n");
13     else
14     {
15         printf("\nEnter the item\n");
16         scanf("%d",&item);
17         rear[pr]++;
18         queue[pr][rear[pr]]=item;
19     }
20     return;
21 }
22 void pqdelete()
23 {
24     int i;
25     for(i=0;i<3;i++)
26     {
27         if(rear[i]==front[i]-1)
28             printf("\nqueue empty\n");
29         else
30         {
31             printf("deleted item is %d of queue %d\n",queue[i][front[i]],i+1);
32             front[i]++;
33         }
34     }
35 }
36 void display()
37 {
38     int i,j;
```

```
35 }
36 void display()
37 {
38     int i,j;
39     for(i=0;i<3;i++)
40     {
41         if(rear[i]==front[i]-1)
42             printf("\nqueue empty %d\n",i+1);
43         else
44         {
45             printf("\nQUEUE %d:",i+1);
46             for(j=front[i];j<=rear[i];j++)
47                 printf("%d\t",queue[i][j]);
48         }
49     }
50 }
51 int main()
52 {
53     int ch;
54     while(1)
55     {
56         printf("PRIORITY QUEUE\n");
57         printf("*****\n");
58         printf("\n\t1:PQinsert\n");
59         printf("\n\t2:PQdelete\n");
60         printf("\n\t3:PQdisplay\n");
61         printf("\n\t4:Exit\n");
62         printf("\nEnter the choice\n");
63         scanf("%d",&ch);
64         switch(ch)
65         {
66             case 1:printf("\nEnter the priority number\n");
67                     scanf("%d",&pr);
68                     if(pr>0 && pr<4)
69                         pqinsert(pr-1);
70                     else
71                         printf("\nonly 3 priority exists 1 2 3\n");
72                     break;
```

```
48
49
50
51 int main()
52 {
53     int ch;
54     while(1)
55     {
56         printf("PRIORITY QUEUE\n");
57         printf("*****\n");
58         printf("\n\t1:PQinsert\n");
59         printf("\n\t2:PQdelete\n");
60         printf("\n\t3:PQdisplay\n");
61         printf("\n\t4:Exit\n");
62         printf("\nEnter the choice\n");
63         scanf("%d",&ch);
64         switch(ch)
65         {
66             case 1:printf("\nEnter the priority number\n");
67                     scanf("%d",&pr);
68                     if(pr>0 && pr<4)
69                         pqinsert(pr-1);
70                     else
71                         printf("\nonly 3 priority exists 1 2 3\n");
72                     break;
73             case 2:pqdelete();
74                     break;
75             case 3:display();
76                     break;
77             case 4:exit(0);
78         }
79         if(pr==4)
80             break;
81     }
82     getch();
83     return 0;
84 }
```

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

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