

→ 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 pinsert (int pr) {
```

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

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

```
    else {
```

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

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

```
        rear[pr]++;
```

```
        queue[pr][rear[pr]] = item;
```

```
    }
```

```
    return;
```

```
}
```

```
void pdelete() {
```

```
    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 exist \n");
                    break;
            case 2: pqdelete(); break;
            case 3: display(); break;
            case 4: exit(0);
        }
        if (pr == 4) break;
        return 0;
    }
}

```



```

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("\n enter 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

\*\*\*\*\*

## 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

\*