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papergrid

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## LAB PROGRAM

### Priority Queue : (Multiple Priority Queue)

```
#include <stdio.h>
#include <conio.h>
#define q-size 3
int queue[q-size][q-size];
int front[q-size] = {0, 0, 0};
int rear[q-size] = {-1, -1, -1};
int item, priority;
pqinsert(int priority)
{
    if (rear[priority] == q-size - 1)
        printf("Queue overflow.\n");
    else
    {
        printf("Enter the item : ");
        scanf("%d", &item);
        rear[priority]++;
        queue[priority][rear[priority]] = item;
    }
    return;
}
pqdelete()
{
    int i;
    for(i=0; i<3; i++)
    {
        if (rear[i] == front[i] - 1)
            printf("Queue is empty.\n");
        else
        {
```

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

pqdisplay()
{
    int i, j;
    for(i=0; i<3; i++)
    {
        if(rear[i] == front[i] - 1)
            printf("Queue %d is empty, ", i+1);
        else
        {
            printf("\nContents of Queue %d:", i+1);
            for(j=front[i]; j<=rear[i]; j++)
                printf("%d\t", queue[i][j]);
        }
    }
    return;
}

void main()
{
    int choice;
    printf("MULTIPLE PRIORITY QUEUE\n");
    while(1)
    {
        printf("\n1: PQ Insert\n2: PQ Delete\n3: PQ Display\n4: Exit\n");
        printf("Enter the choice: ");
        scanf("%d", &choice);
```

```
switch(choice)
```

```
{
```

```
case 1: printf("Enter the priority number:");
```

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

```
if(priority > 0 && priority < 4)
```

```
    pqinsert(priority - 1);
```

```
    else
```

```
        printf("Only 3 priority exists -  
1,2,3 \n");
```

```
        break;
```

```
case 2: pqdelete();
```

```
        break;
```

```
case 3: pqdisplay();
```

```
        break;
```

```
default: exit(0);
```

```
}
```

```
}
```

```
}
```