

Lab 6 - PRIORITY QUEUE

```
#include <stdio.h>
#include <stdlib.h>
#define N3
int queue [3][N];
int front [3] = {0, 0, 0};
int rear [3] = {-1, -1, -1};
int item, pr;
void pqinsert (int);
void pqdelete ();
void pqdisplay ();
int main ()
{
    int ch;
    for (;;)
    {
        printf("\n Priority Queue\n");
        printf("\n\t 1. PQ - Insert\n");
        printf("\n\t 2. PQ - Delete\n");
        printf("\n\t 3. PQ - Display\n");
        printf("\n\t 4. Exit\n");
        printf("\n Enter your choice:\n");
        scanf("%d", &ch);
        switch(ch)
        {
```

```

case 1: printf ("\n Enter priority no.: ");
scanf ("%d", &pr);
if (pr > 0 & pr < 4)
    pq insert (pr-1);
else
    printf ("Only 3 priority\n\n Enter 1 2 3\n");
    break;

```

```

case 2: pq delete();
    break;

```

```

case 3: display();
    break;

```

```

case 4: exit (0);

```

```

}

```

```

}

```

```

return 0;

```

```

}

```

```

void pq insert (int pr)
{

```

```

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

```

```

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

```

```

}

```

```

else
{

```

```

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

```

```

}

```

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

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

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

```
}
```

```
}
```

```
void pop delete ()
```

```
{
```

```
int i;
```

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

```
{
```

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

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

```
}
```

```
else
```

```
{
```

```
printf ("Deleted item is %d of Queue %d\n",
```

```
queue [i] [front [i]]; i++);
```

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

```
}
```

```
}
```

```
void display ()
```

```
{
```

```
int i, j;
```

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

```
{
```

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

```
        printf("\n Queue Empty %d\n", i+1);
```

```
    }
```

```
    else
```

```
    {
```

```
        printf("\n Queue %d", i+1);
```

```
        for (j = front[i]; j <= rear[i]; j++)
```

```
            printf("%d\t", queue[j]);
```

```
    }
```

```
}
```

```
}
```

```
}
```