WEEK-6

Priority Queue

```
#include<stdio.h>
#define N 3
int queue[3][N];
int front[3]={0,0,0};
int rear[3]={-1,-1,-1};
int item,pr;
void main()
{
 int ch;
 while(1)
 {
 printf("\nPRIORITY QUEUE\n");
 printf("******************\n");
 printf("\n\t1:PQinsert\n");
 printf("\n\t2:PQdelete\n");
 printf("\n\t3:PQdisplay\n");
 printf("\n\t4:Exit\n");
 printf("\nenter the choice\n");
 scanf("%d",&ch);
 switch(ch)
 {
  case 1:printf("\nenter the priority number\n");
                scanf("%d",&pr);
                if(pr>0 && pr<4)
                pqinsert(pr-1);
```

```
                else
                printf("\only 3 priority exists 1 2 3\n");
                break;
  case 2:pqdelete();
            break;
  case 3:display();
            break;
  case 4:exit(0);
 }
 }
}
pqinsert(int pr)
{
 if(rear[pr]==N-1)
 printf("\n Queue overflow\n");
 else
 {

  printf("\nenter the item\n");
  scanf("%d",&item);
  rear[pr]++;
  queue[pr][rear[pr]]=item;
 }
 return;
}
pqdelete()
{
 int i;
```

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

```
PRIORITY QUEUE
******************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

enter the priority number
2

enter the item
20

PRIORITY QUEUE
******************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

enter the priority number
10
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
1

enter the item
10

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
1

enter the priority number
1

enter the item
11

PRIORITY QUEUE
******************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
1

enter the priority number
3

enter the item
33

PRIORITY QUEUE
******************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
3

QUEUE 1:11
QUEUE 2:20
QUEUE 3:33
PRIORITY QUEUE
******************

        1:PQinsert

        2:PQdelete

        3:PQdisplay

        4:Exit

enter the choice
4
```