Multiple priority Queue

```
# include <stdio.h>
# define N 5
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("@ Priority Queue \n");
printf("* * * * * * \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 the choice \n");
scanf("%d", &ch);
switch(ch)
{
case 1: printf("\n enter the priority number \n");
        scanf("%d", &pr);
```

```
if (pr > 0 && pr < 4)
    pq insert (pr - 1);
  else
    printf ("\n only 3 priority exists 1 2 3 \n");
      break;
case 2 : pq delete ();
      break;
case 3 : display ();
      break;
case 4 : exit (0);
  }
  }
}
  pq insert (int pr)
{
  if (rear[pr] == N - 1)
    printf ("\n queue overflow \n");
  else
  {
  printf (" enter the item \n");
  scanf ("%d", &item);
  rear [pr ]++;
  queue [pr][ rear [pr]] = item;
  }
```

```
return;
}
pq delete()
{
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)
```

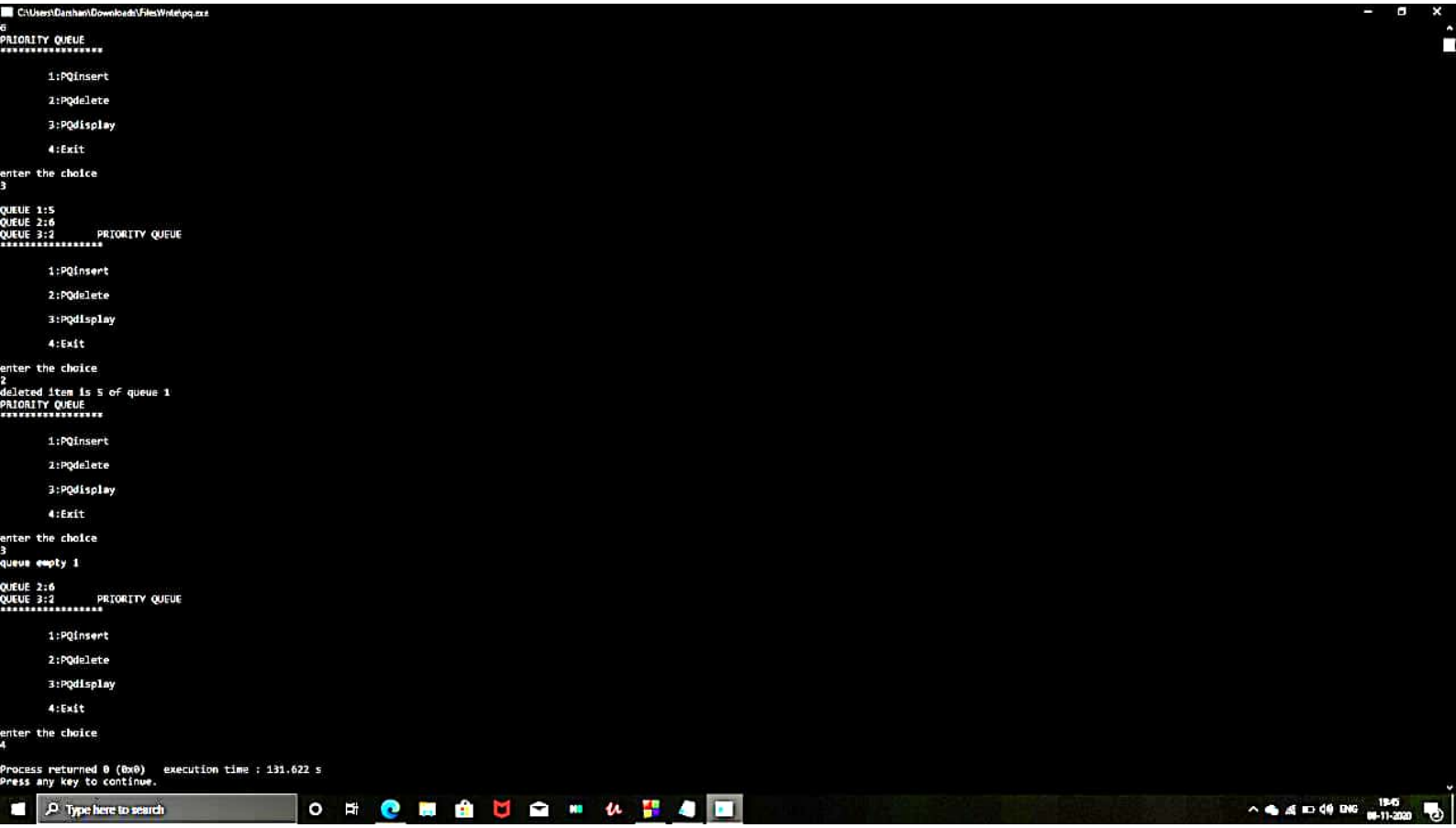
```
printf("queue empty %d\n", i+1);
else
{
printf("\n Queue %d:", i+1);
for(j=front[i]; j<=rear[i]; j++)
printf("%d\t", queue[i][j]);
}
}
return;
}
```

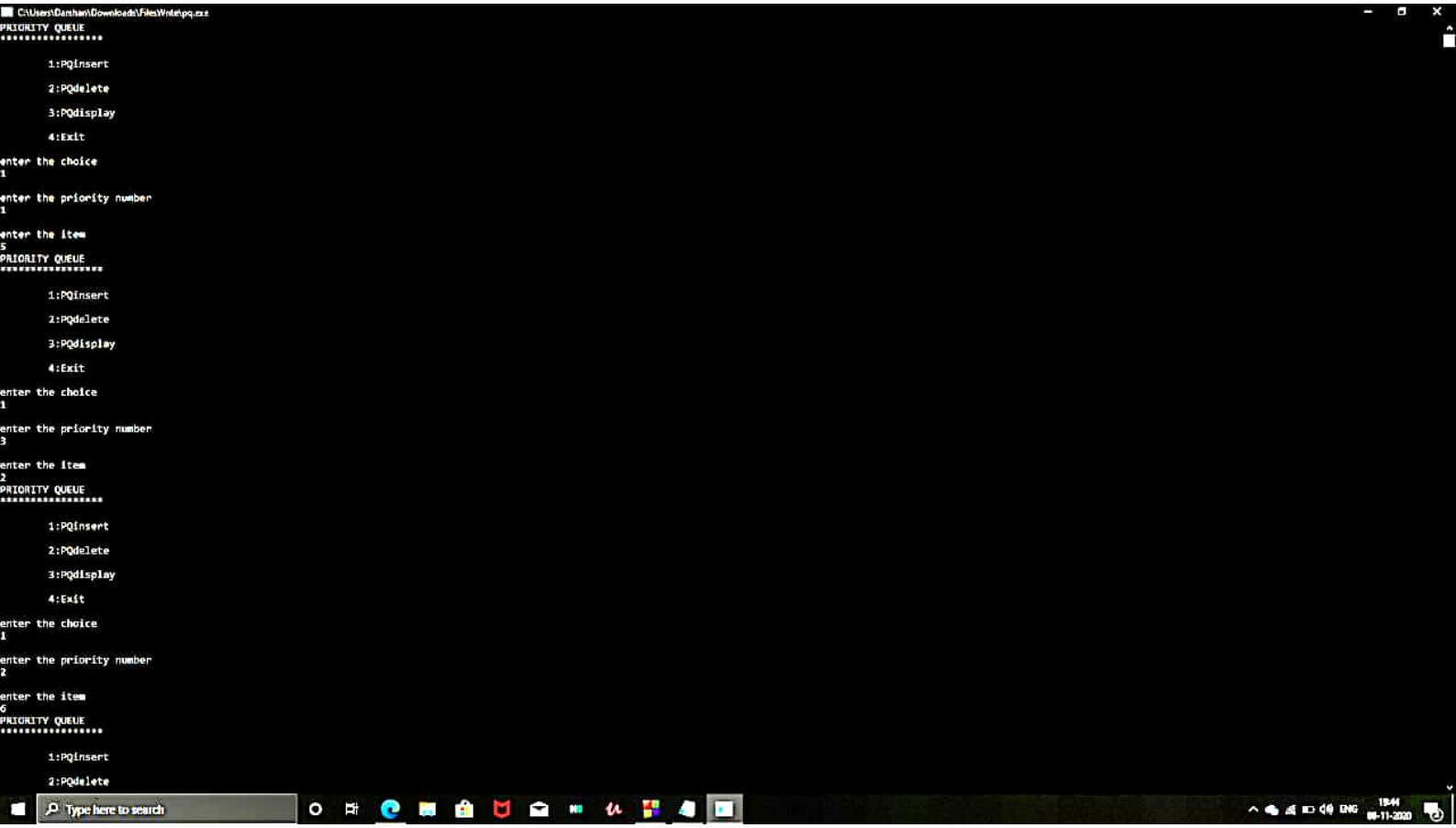
Ascending Priority queue

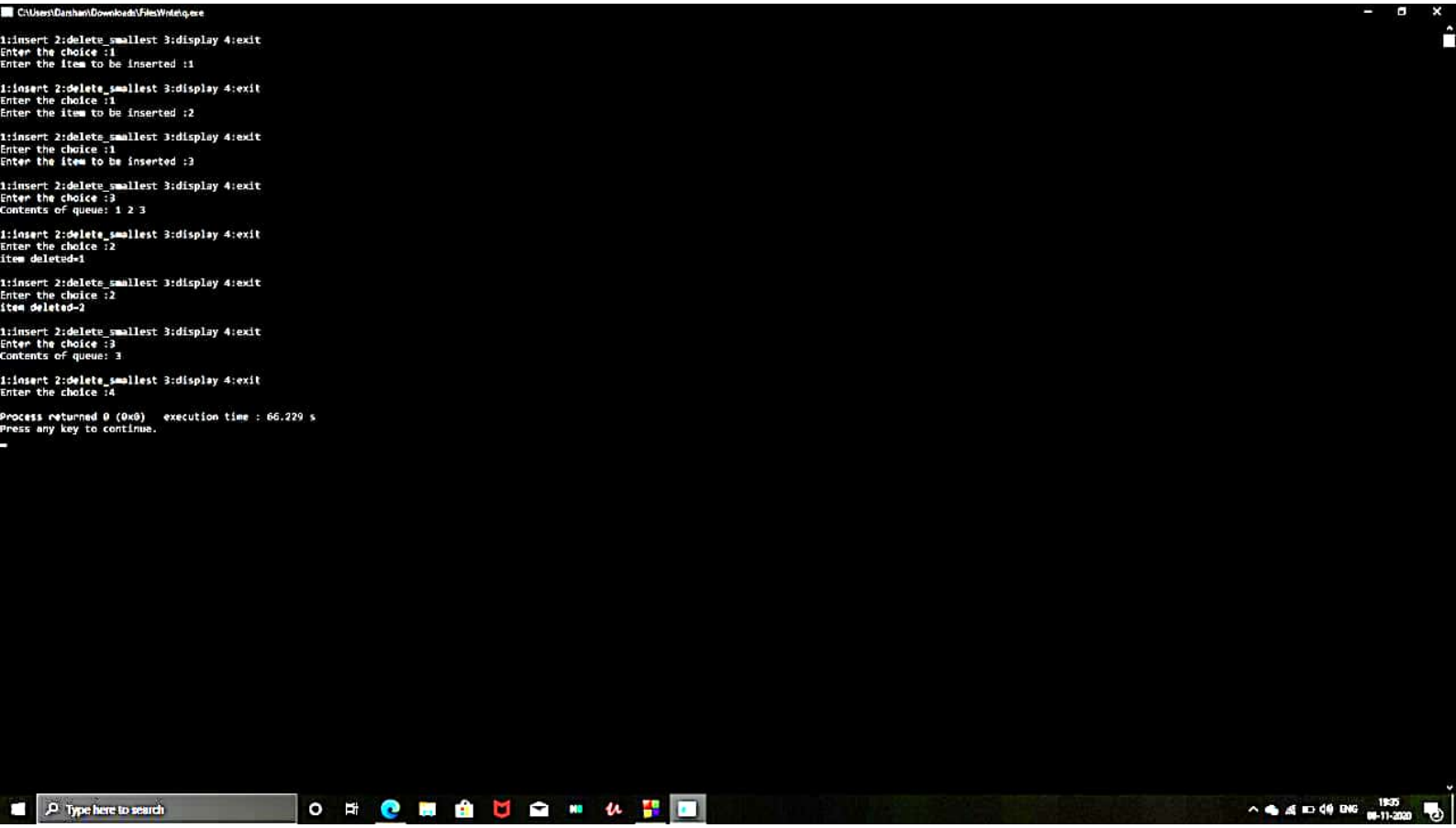
```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#define MAX 4

int pq[MAX];
int count=0;
int d=0;
void insert (int data){
int i=0;
if (count==MAX)
{
printf ("Queue overflow\n");
return;
}
if (count==0){
pq[count++]=data;
}
else{
for(i=count-1, i>=0; i--){
if (data<pq[i]){
pq[i+1]=pq[i];
}else{ break;}}
```

```
pq[i+1] = data;
  count ++;
 }
}
int removeData(){
 return pq[d++];
}
void display()
{
 int i;
if(count==0)
{
 printf("queue is empty\n");
  return;
  }
  printf("contents of queue:");
  for(i=d; i<count; i++)
{
printf("%d", pq[i]);
  }
   printf("\n");
   }
```

```
int main ()
{
 int choice, item;
 for (;;)
{
 printf ("\n 1. insert 2. delete 3. display
 4. Exit \n");
 printf ("Enter choice");
 scanf ("%d", &choice);
switch (choice)
  {
case 1: printf ("Enter the item to be inserted:");
 scanf ("%d", &item);
 insert (item);
   break;
case 2:  item = removeData();
   if (item == -1)
   printf ("Queue is empty \n");
   else
    printf ("Item deleted = %d \n", item);
     break;
  case 3: display ();
    break;
    default: exit (0);
} } }
```







SVA_DQA (4) - Notepad

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```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#define MAX 4

int pq[MAX];
int count = 0;
int d = 0;

void insert(int data){
int i = 0;
if(count==MAX)
{
printf("Queue overflow\n");
return;
}
// if queue is empty, insert the data
if(count == 0){
pq[count++] = data;
}else{
// start from the right end of the queue
for(i = count - 1; i >= 0; i-- ){
//if data is smaller shift right
if(data<pq[i]){
pq[i+1] = pq[i];
}else{
break;
}
}

// insert the data
pq[i+1] = data;
count++;
}

}
```

3398 chars, 166 line breaks 16 10 4 spaces

SVA_DQA (4) - Notepad

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```
        // insert the data
        pq[i+1] = data;
        count++;
        }

        }

        int removeData(){

        return pq[d++];
        }
        void display()
        {int i;
        if (count==0)
        {
        printf("queue is empty\n");
        return;
        }
        printf("Contents of queue: ");
        for(i=d;i<count;i++)
        {
        printf("%d ",pq[i]);
        }
        printf("\n");
        }

        int main() {
        int choice,item;
        for(;;)
        {
        printf("\n1:insert 2:delete_smallest 3:display 4:exit\n");
        printf("Enter the choice :");
        scanf("%d",&choice);
        switch(choice)
        {
        case 1:printf("Enter the item to be inserted :");
```

SVA_DQA (4) - Notepad

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```
switch(choice)
{
case 1:printf("Enter the item to be inserted :");
scanf("%d",&item);
insert(item);
break;
case 2:item=removeData();
if(item==-1)
printf("Queue is empty\n");
else
printf("item deleted=%d\n",item);
break;
case 3:display();
break;
default:exit (0);

}

}
```

SVA_MPQ - Notepad

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```
#include<stdio.h>
#include<conio.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;
clrscr();
while(1)
{
printf("PRIORITY 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);
}
```

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SVA_MPQ - Notepad

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```
            break;
case 4:exit(0);
}
}
getch();
}
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()
{
```

SVA_MPQ - Notepad

File Edit Format View Help

```
 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;
}
```