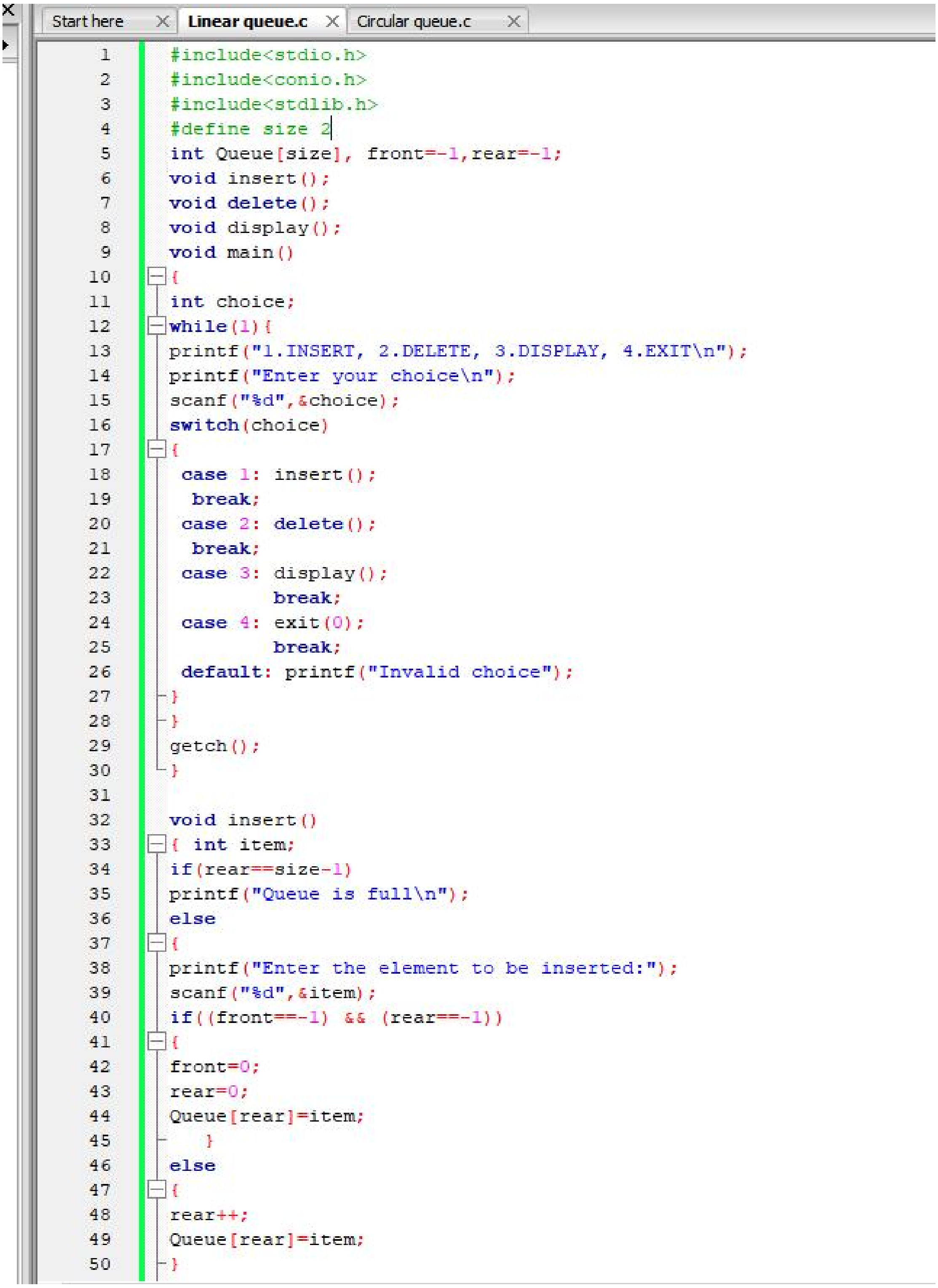
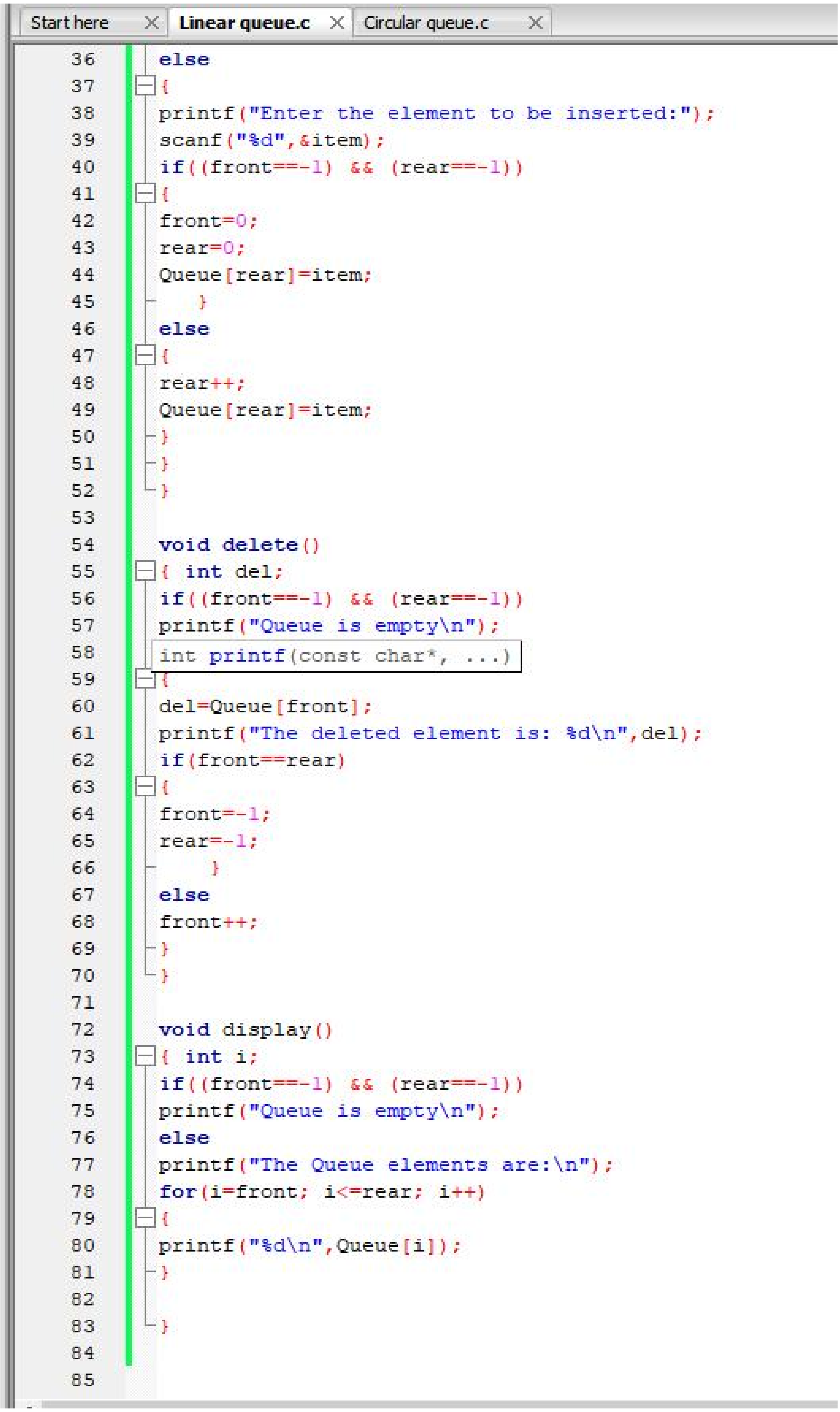
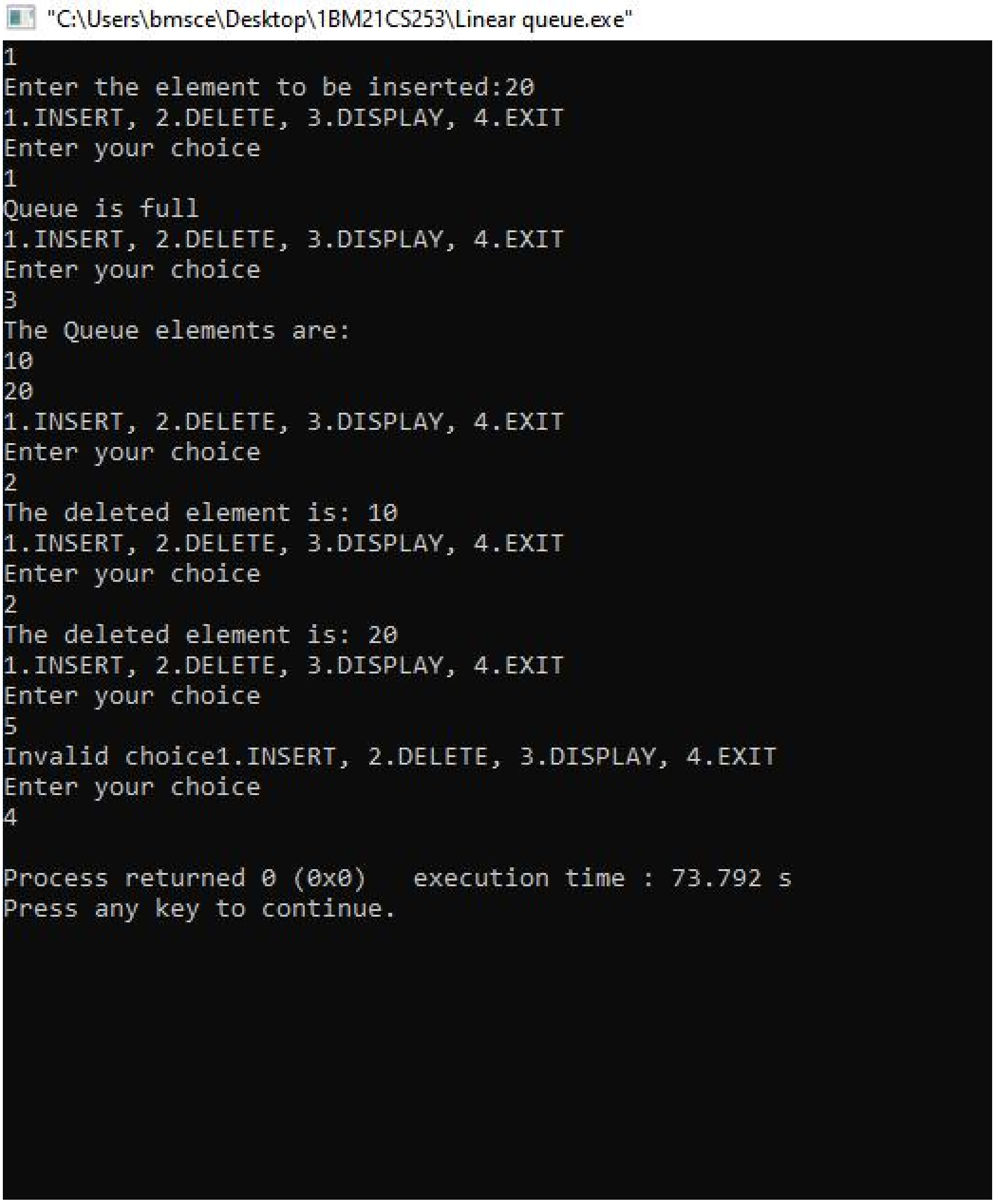
LINEAR QUEUE



```c
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
#define size 2
int Queue[size], front=-1,rear=-1;
void insert();
void delete();
void display();
void main()
{
int choice;
while(1){
printf("1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT\n");
printf("Enter your choice\n");
scanf("%d",&choice);
switch(choice)
{
 case 1: insert();
  break;
 case 2: delete();
  break;
 case 3: display();
         break;
 case 4: exit(0);
         break;
 default: printf("Invalid choice");
}
}
getch();
}

void insert()
{ int item;
if(rear==size-1)
printf("Queue is full\n");
else
{
printf("Enter the element to be inserted:");
scanf("%d",&item);
if((front==-1) && (rear==-1))
{
front=0;
rear=0;
Queue[rear]=item;
   }
else
{
rear++;
Queue[rear]=item;
}
```



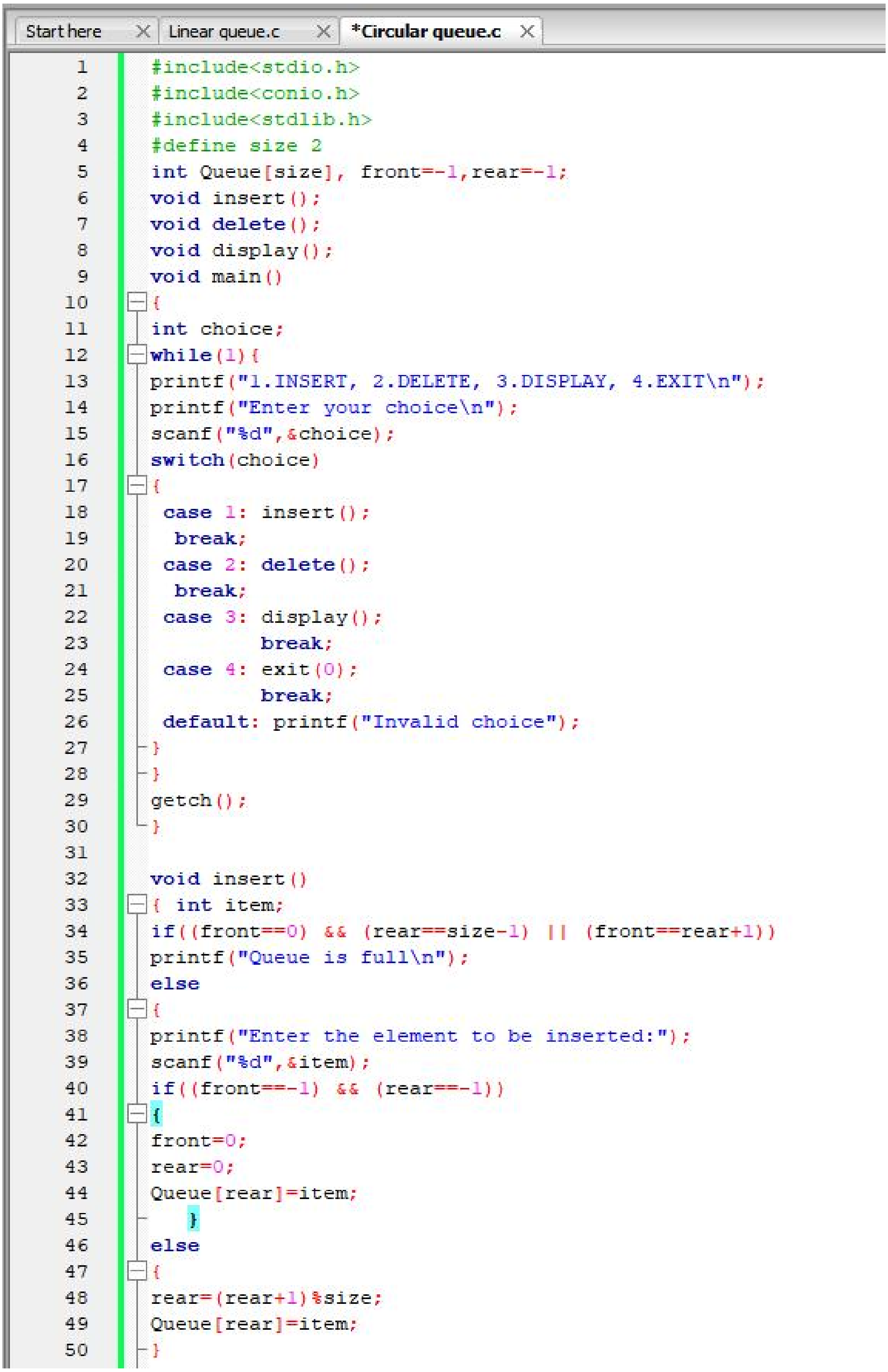
```c
else
{
printf("Enter the element to be inserted:");
scanf("%d",&item);
if((front==-1) && (rear==-1))
{
front=0;
rear=0;
Queue[rear]=item;
    }
else
{
rear++;
Queue[rear]=item;
}
}
}

void delete()
{ int del;
if((front==-1) && (rear==-1))
printf("Queue is empty\n");
{
del=Queue[front];
printf("The deleted element is: %d\n",del);
if(front==rear)
{
front=-1;
rear=-1;
     }
else
front++;
}
}

void display()
{ int i;
if((front==-1) && (rear==-1))
printf("Queue is empty\n");
else
printf("The Queue elements are:\n");
for(i=front; i<=rear; i++)
{
printf("%d\n",Queue[i]);
}

}
```



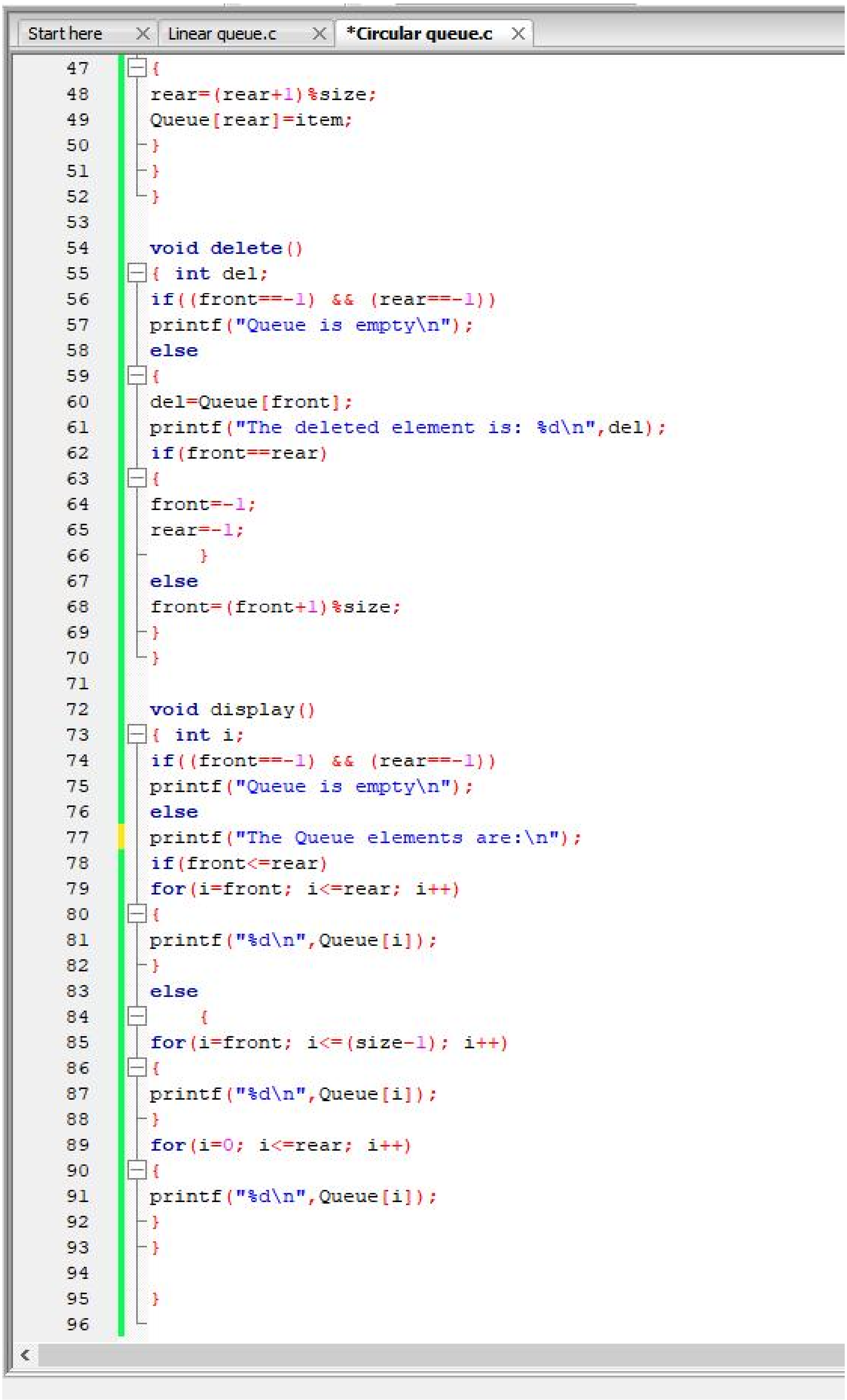
"C:\Users\bmsce\Desktop\1BM21CS253\Linear queue.exe"

```
1
Enter the element to be inserted:20
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
1
Queue is full
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
3
The Queue elements are:
10
20
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
2
The deleted element is: 10
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
2
The deleted element is: 20
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
5
Invalid choice1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
4

Process returned 0 (0x0)   execution time : 73.792 s
Press any key to continue.
```

CIRCULAR QUEUE

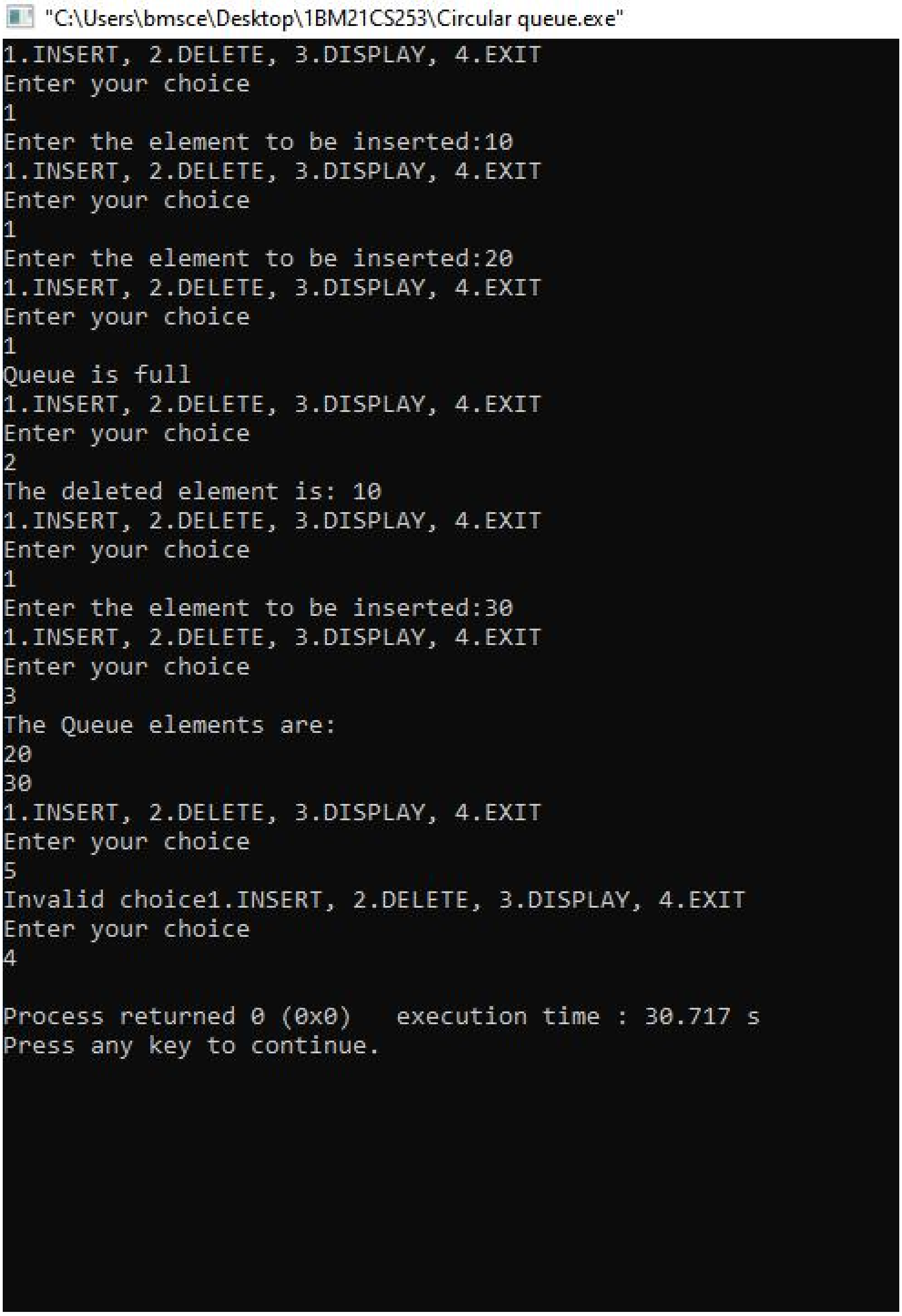


```c
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
#define size 2
int Queue[size], front=-1,rear=-1;
void insert();
void delete();
void display();
void main()
{
int choice;
while(1){
printf("1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT\n");
printf("Enter your choice\n");
scanf("%d",&choice);
switch(choice)
{
 case 1: insert();
  break;
 case 2: delete();
  break;
 case 3: display();
         break;
 case 4: exit(0);
         break;
 default: printf("Invalid choice");
}
}
getch();
}

void insert()
{ int item;
if((front==0) && (rear==size-1) || (front==rear+1))
printf("Queue is full\n");
else
{
printf("Enter the element to be inserted:");
scanf("%d",&item);
if((front==-1) && (rear==-1))
{
front=0;
rear=0;
Queue[rear]=item;
   }
else
{
rear=(rear+1)%size;
Queue[rear]=item;
}
```



```c
{
rear=(rear+1)%size;
Queue[rear]=item;
}
}
}

void delete()
{ int del;
if((front==-1) && (rear==-1))
printf("Queue is empty\n");
else
{
del=Queue[front];
printf("The deleted element is: %d\n",del);
if(front==rear)
{
front=-1;
rear=-1;
    }
else
front=(front+1)%size;
}
}

void display()
{ int i;
if((front==-1) && (rear==-1))
printf("Queue is empty\n");
else
printf("The Queue elements are:\n");
if(front<=rear)
for(i=front; i<=rear; i++)
{
printf("%d\n",Queue[i]);
}
else
    {
for(i=front; i<=(size-1); i++)
{
printf("%d\n",Queue[i]);
}
for(i=0; i<=rear; i++)
{
printf("%d\n",Queue[i]);
}
}

}

```

OUTPUT



"C:\Users\bmsce\Desktop\1BM21CS253\Circular queue.exe"

```
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
1
Enter the element to be inserted:10
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
1
Enter the element to be inserted:20
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
1
Queue is full
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
2
The deleted element is: 10
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
1
Enter the element to be inserted:30
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
3
The Queue elements are:
20
30
1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
5
Invalid choice1.INSERT, 2.DELETE, 3.DISPLAY, 4.EXIT
Enter your choice
4

Process returned 0 (0x0)   execution time : 30.717 s
Press any key to continue.
```