QUEUE:

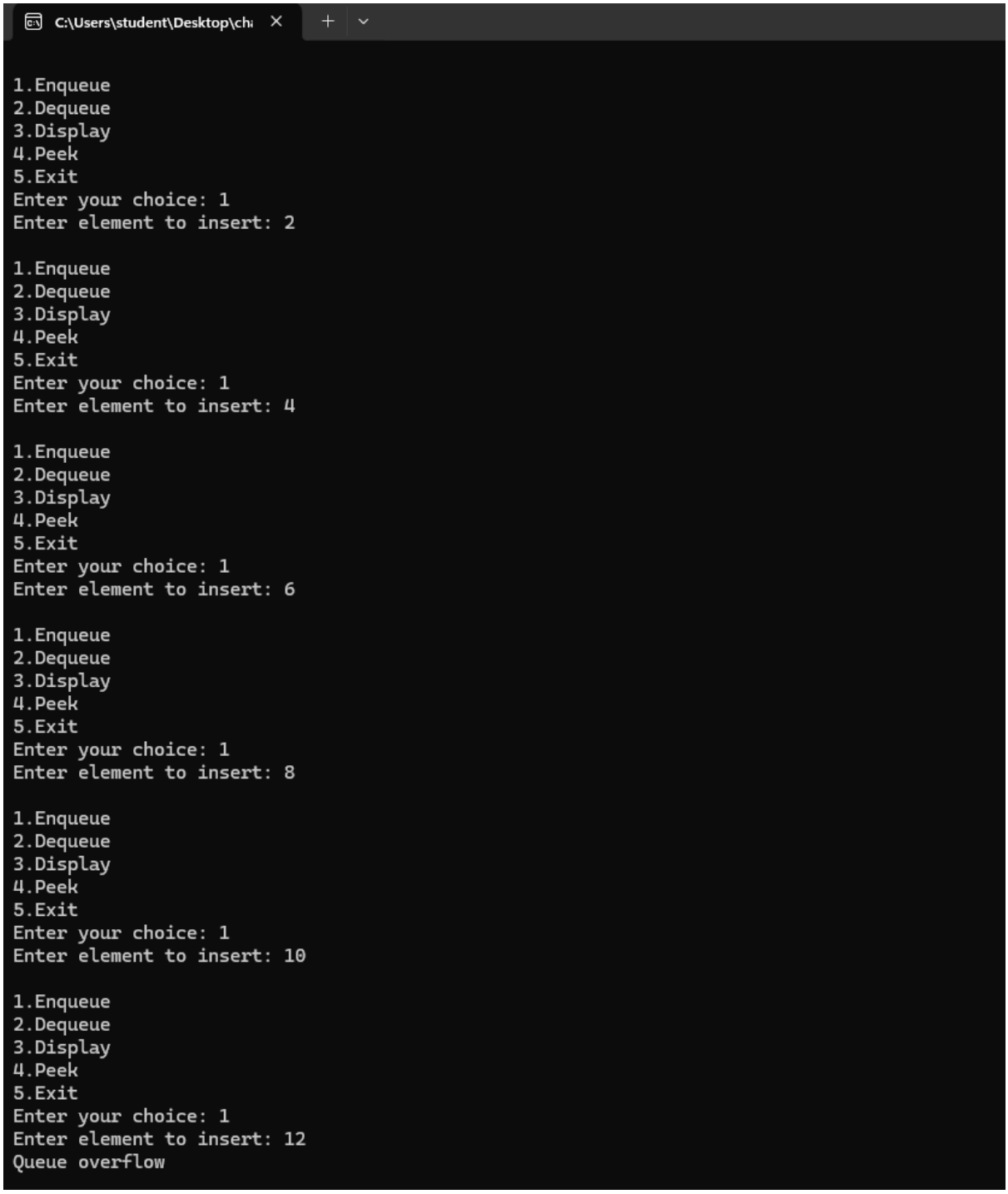
```
#include <stdio.h>
#define N 5

int queue[N];
int front=-1,rear=-1;

void enqueue(int x) {
if (rear==N-1) {
printf("Queue overflow\n");
}
else if(front==-1 && rear==-1) {
front=rear=0;
queue[rear]=x;
}
else {
rear++;
queue[rear]=x;
}
}

void dequeue() {
if (front==-1 && rear==-1){
printf("Queue is empty\n");
}
else if(front==rear){
printf("Deleted element is:  %d\n",queue[front]);
front=rear=-1;
}
```

```
else{
printf("Deleted element is: %d\n",queue[front]);
front++;
}
}

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

void peek(){
if (front==-1 && rear==-1){
printf("Queue is empty\n");
}
else{
printf("Front element: %d\n",queue[front]);
}
}

int main() {
int choice,x;
```

```
do{
printf("\n1.Enqueue\n");
printf("2.Dequeue\n");
printf("3.Display\n");
printf("4.Peek\n");
printf("5.Exit\n");
printf("Enter your choice: ");
scanf("%d",&choice);

switch(choice) {
case 1:
   printf("Enter element to insert: ");
   scanf("%d",&x);
   enqueue(x);
   break;

case 2:
   dequeue();
   break;

case 3:
   display();
   break;

case 4:
   peek();
   break;

case 5:
   printf("Exiting....\n");
   break;
```

```
default:
    printf("Invalid Choice\n");
}
}
while (choice !=5);
return 0;
}
```

OUTPUT:


C:\Users\student\Desktop\ch
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 1
Enter element to insert: 2
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 1
Enter element to insert: 4
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 1
Enter element to insert: 6
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 1
Enter element to insert: 8
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 1
Enter element to insert: 10
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 1
Enter element to insert: 12
Queue overflow

```
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 3
Queue elements are:
2 4 6 8 10

1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 4
Front element: 2

1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 2
Deleted element is: 2

1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 2
Deleted element is: 4

1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 4
Front element: 6
```

```
1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 2
Deleted element is: 8

1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 2
Deleted element is:  10

1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 2
Queue is empty

1.Enqueue
2.Dequeue
3.Display
4.Peek
5.Exit
Enter your choice: 5
Exiting....

Process returned 0 (0x0)   execution time : 63.818 s
Press any key to continue.
```