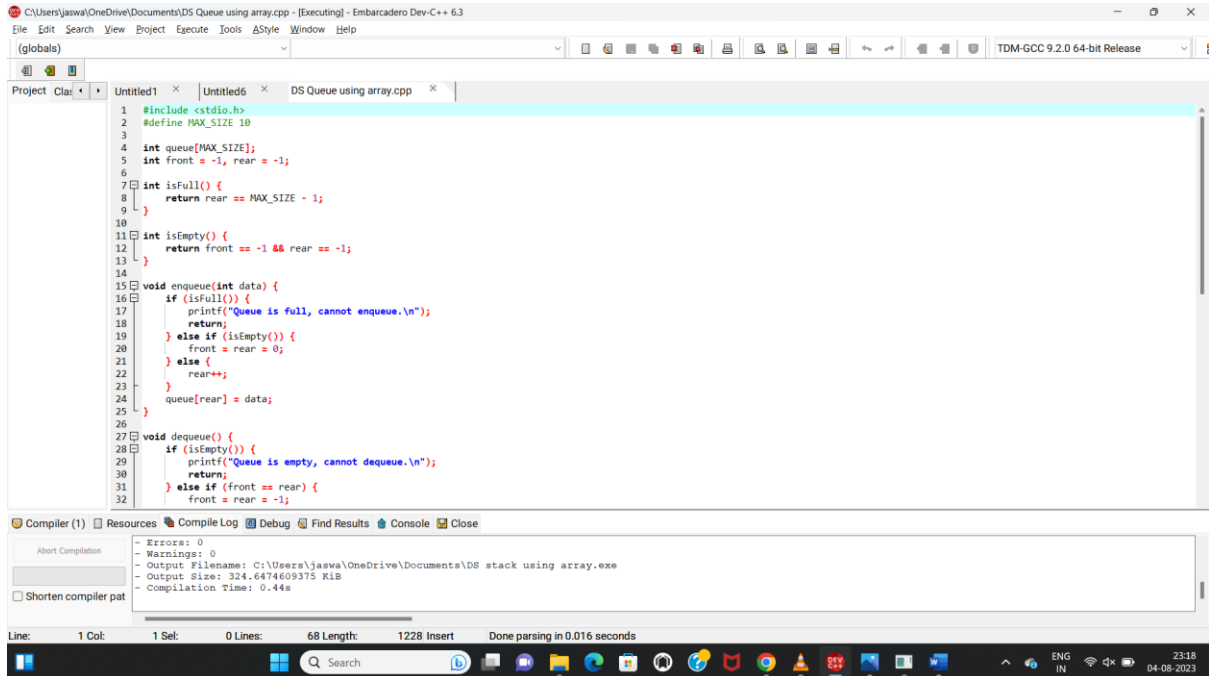
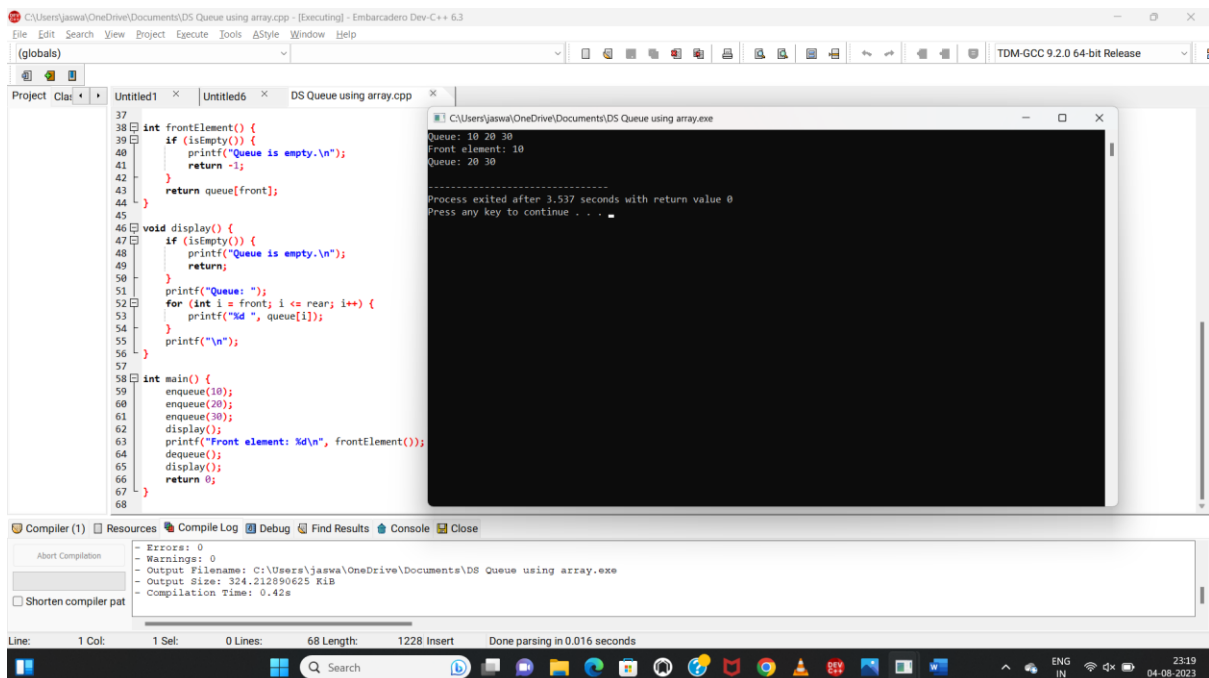


# DS QUEUE USING ARRAY



The screenshot shows the Embarcadero Dev-C++ 6.3 IDE with the file "DS Queue using array.cpp" open. The code defines a queue using an array of size 10. It includes functions for checking if the queue is full, empty, enqueueing, and dequeuing elements. The compiler output at the bottom shows no errors or warnings, and the output file is "DS stack using array.exe".

```
1 #include <stdio.h>
2 #define MAX_SIZE 10
3
4 int queue[MAX_SIZE];
5 int front = -1, rear = -1;
6
7 int isFull() {
8     return rear == MAX_SIZE - 1;
9 }
10
11 int isEmpty() {
12     return front == -1 && rear == -1;
13 }
14
15 void enqueue(int data) {
16     if (isFull()) {
17         printf("Queue is full, cannot enqueue.\n");
18         return;
19     } else if (isEmpty()) {
20         front = rear = 0;
21     } else {
22         rear++;
23     }
24     queue[rear] = data;
25 }
26
27 void dequeue() {
28     if (isEmpty()) {
29         printf("Queue is empty, cannot dequeue.\n");
30         return;
31     } else if (front == rear) {
32         front = rear = -1;
33     }
```



The screenshot shows the same IDE with the code for "DS Queue using array.cpp" and its execution output. The code includes a function to return the front element and a main function that enqueues 10, 20, and 30, then displays the queue and dequeues an element. The console output shows the queue state and the front element.

```
37 int frontElement() {
38     if (isEmpty()) {
39         printf("Queue is empty.\n");
40         return -1;
41     }
42     return queue[front];
43 }
44
45 void display() {
46     if (isEmpty()) {
47         printf("Queue is empty.\n");
48         return;
49     }
50     printf("Queue: ");
51     for (int i = front; i <= rear; i++) {
52         printf("%d ", queue[i]);
53     }
54     printf("\n");
55 }
56
57 int main() {
58     enqueue(10);
59     enqueue(20);
60     enqueue(30);
61     display();
62     printf("Front element: %d\n", frontElement());
63     dequeue();
64     display();
65     return 0;
66 }
67
68 }
```

Output:

```
Queue: 10 20 30
Front element: 10
Queue: 20 30
-----
Process exited after 3.537 seconds with return value 0
Press any key to continue . . .
```