

QUEUE

Write a C++ program to insert and delete an element from queue.

Instructions: -

- Create global variables front and rear.
- Create a insert_item() and remove_item() functions.
- Display the element of queue and also display the front and rear element of queue.

Code: -

```
1. #include <iostream>
2. #define SIZE 5 // Maximum size of the queue
3.
4. using namespace std;
5.
6. int front = -1, rear = -1; // Global variables to track queue front and rear
7. int queue[SIZE]; // Queue array
8.
9.
10.
11. // Function to insert an element into the queue (Enqueue)
12. void insert_item(int element)
13. {
14.     if (rear == SIZE - 1)
15.     {
16.         cout << "Queue is full\n";
17.         return;
18.     }
19.     if (front == -1)
20.         front = 0; // Set front to 0 if queue is initially empty
21.     rear = rear + 1; // Increment rear
22.     queue[rear] = element; // Insert element at the new rear position
23.
24.     cout << element << " inserted into queue\n";
25. }
26.
27. // Function to remove an element from the queue (Dequeue)
28. void remove_item()
29. {
30.     if (front == -1 || front > rear)
31.     {
32.         cout << "Queue is empty\n";
33.         return;
34.     }
35.     cout << queue[front] << " removed from queue\n";
36.     front++;
37. }
38.
39. // Function to display the elements of the queue
40. void display()
```

```
41. {
42.
43.     cout << "Queue elements: ";
44.     for (int i = front; i <= rear; i++)
45.     {
46.         cout << queue[i] << " ";
47.     }
48.     cout << endl;
49. }
50.
51. // Main function
52. int main()
53. {
54.     cout<<"-----"<<"\n";
55.     cout<<"-----Insertion and Deletion in Queue-----"<<"\n";
56.     cout<<"-----"<<"\n";
57.     insert_item(10);
58.     insert_item(20);
59.     insert_item(30);
60.     insert_item(40);
61.     insert_item(50);
62.     cout<<"-----" <<"\n";
63.     cout<<"Front of queue is "<<queue[front]<<"\n";
64.     cout<<"Rear of queue is "<<queue[rear]<<"\n";
65.     cout<<"-----" <<"\n";
66.     display();
67.     cout<<"-----" <<"\n";
68.     remove_item();
69.     remove_item();
70.     cout<<"-----" <<"\n";
71.     cout<<"Front of queue is "<<queue[front]<<"\n";
72.     cout<<"Rear of queue is "<<queue[rear]<<"\n";
73.     display();
74.
75.     return 0;
76. }
77.
```