ASSIGNMENT NO. 7

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A)

CODE:-

```cpp
#include <iostream>
using namespace std;

struct Request {
    int id;
    string name;
    string service;
};
const int MAX = 100;
Request queue[MAX];
int front = 0, rear = -1;
void addRequest(int id, string name, string service) {
    if (rear == MAX - 1) {
        cout << "Queue full, can't add more requests.\n";
        return;
    }
    rear++;
    queue[rear].id = id;
    queue[rear].name = name;
    queue[rear].service = service;
    cout << "Added request ID " << id << "\n";
}
```

```cpp
void processRequest() {
    if (front > rear) {
        cout << "No requests to process.\n";
        return;
    }
    cout << "Processing Request ID: " << queue[front].id << "\n";
    cout << "Customer: " << queue[front].name << "\n";
    cout << "Service: " << queue[front].service << "\n\n";
    front++;
}
void displayRequests() {
    if (front > rear) {
        cout << "No pending requests.\n";
        return;
    }
    cout << "Pending requests:\n";
    for (int i = front; i <= rear; i++) {
        cout << "ID: " << queue[i].id;
        cout << ", Name: " << queue[i].name;
        cout << ", Service: " << queue[i].service << "\n";
    }
    cout << endl;
}
int main() {
    addRequest(101, "John Doe", "Technical Support");
    addRequest(102, "Jane Smith", "Billing Inquiry");
    addRequest(103, "David Brown", "Product Information");
    cout << "\n";
    displayRequests();
```

```
        processRequest();

        processRequest();

        cout << "After processing two requests:\n";

        displayRequests();

        // Add one more request

        addRequest(104, "Alice Green", "Technical Support");

        cout << "Updated requests:\n";

        displayRequests();

        return 0;

}
```

OUTPUT:-

```
Added request ID 101
Added request ID 102
Added request ID 103

Pending requests:
ID: 101, Name: John Doe, Service: Technical Support
ID: 102, Name: Jane Smith, Service: Billing Inquiry
ID: 103, Name: David Brown, Service: Product Information

Processing Request ID: 101
Customer: John Doe
Service: Technical Support

Processing Request ID: 102
Customer: Jane Smith
Service: Billing Inquiry

After processing two requests:
Pending requests:
ID: 103, Name: David Brown, Service: Product Information

Added request ID 104
Updated requests:
Pending requests:
ID: 103, Name: David Brown, Service: Product Information
ID: 104, Name: Alice Green, Service: Technical Support
```