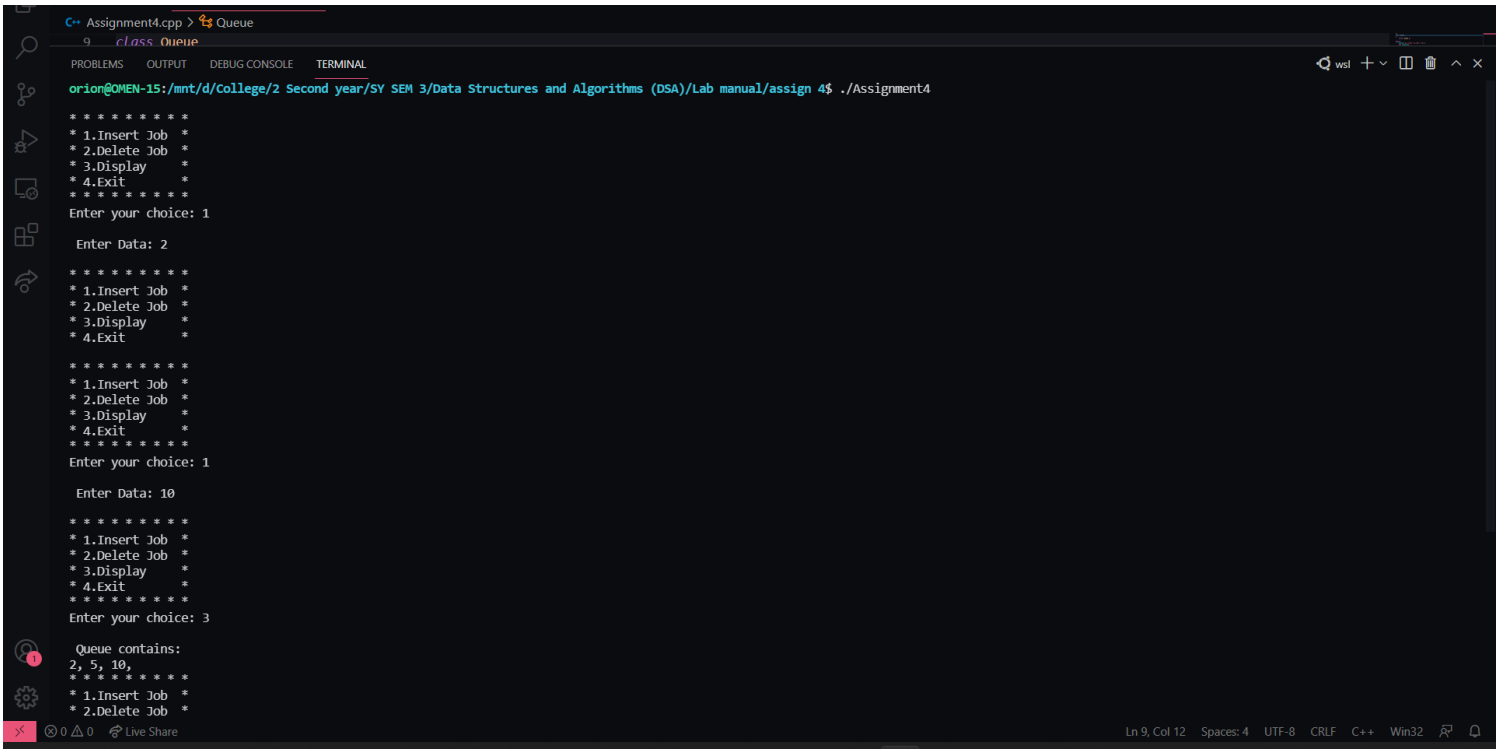
Program:

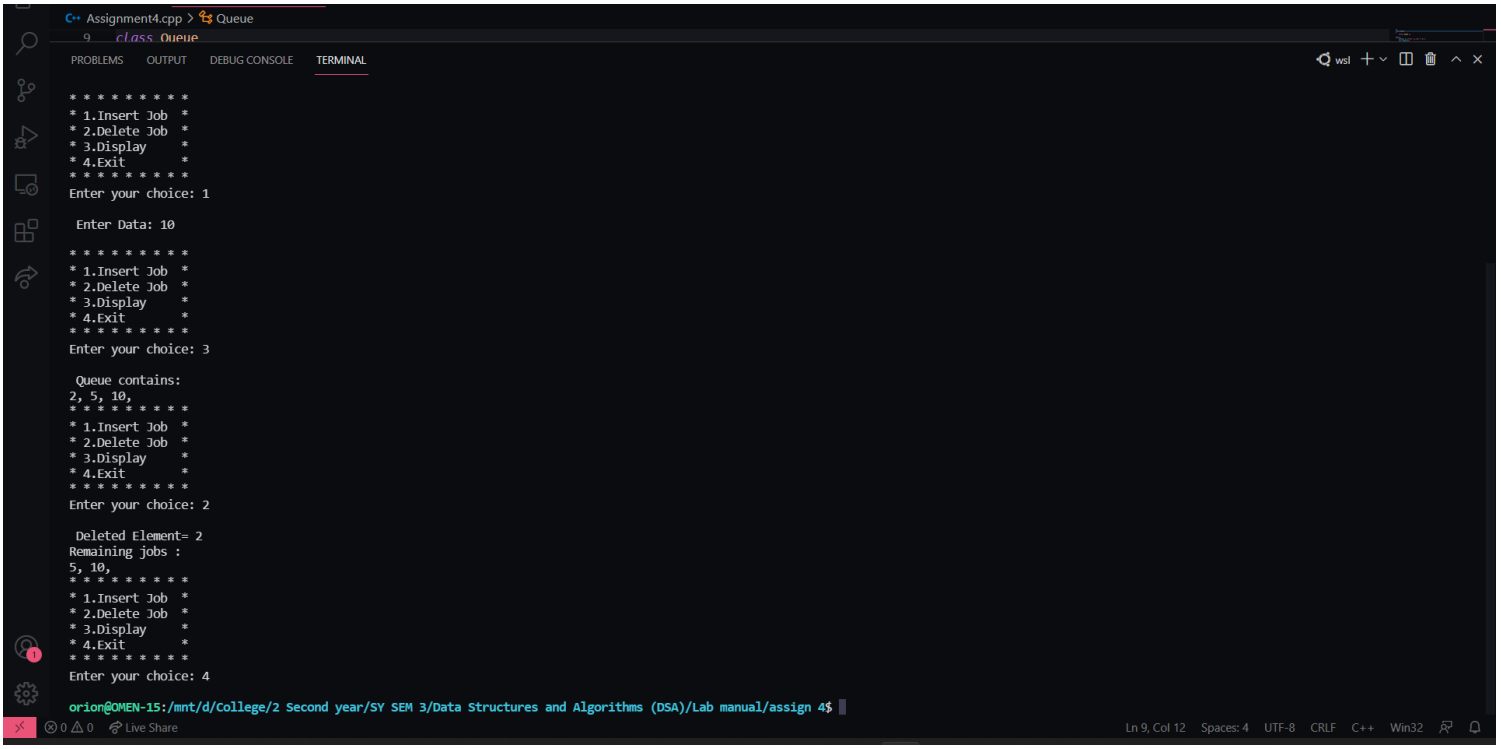
```
#include <iostream>
#define MAX 10
using namespace std;
struct queue
{
    int data[MAX];
    int front, rear;
};
class Queue
{
    struct queue q;

public:
    Queue() { q.front = q.rear = -1; }
    int IsEmpty();
    int IsFull();
    void Enqueue(int);
    int Delqueue();
    void Display();
};
int Queue::IsEmpty()
{
    return (q.front == q.rear) ? 1 : 0;
}
int Queue::IsFull()
{
    return (q.rear == MAX - 1) ? 1 : 0;
}
void Queue::Enqueue(int x)
{
    q.data[++q.rear] = x;
}
int Queue::Delqueue()
{
    return q.data[++q.front];
}
void Queue::Display()
{
    int i;
    cout << "\n";
    for (i = q.front + 1; i <= q.rear; i++)
        cout << q.data[i] << ", ";
}
int main()
{
    Queue obj;
    int ch, x;
    do
    {
        cout << "\n* * * * * * * * *";
```

```
        cout << "\n* 1.Insert Job  *";
        cout << "\n* 2.Delete Job  *";
        cout << "\n* 3.Display     *";
        cout << "\n* 4.Exit        *";
        cout << "\n* * * * * * * * *";
        cout << "\nEnter your choice: ";
        cin >> ch;
        switch (ch)
        {
        case 1:
            if (!obj.IsFull())
            {
                cout << "\n Enter Data: ";
                cin >> x;
                obj.Enqueue(x);
            }
            else
                cout << "Queue is overflow";
            break;
        case 2:
            if (!obj.IsEmpty())
                cout << "\n Deleted Element= " << obj.Delqueue();
            else
            {
                cout << "\n Queue is underflow";
            }
            cout << "\nRemaining jobs :";
            obj.Display();
            break;
        case 3:
            if (!obj.IsEmpty())
            {
                cout << "\n Queue contains:";
                obj.Display();
            }
            else
                cout << "\n Queue is empty";
            break;
        case 4:
            cout << "\n Exit";
        }
    } while (ch != 4);
    return 0;
}
```

Output :


Assignment4.cpp > Queue
class Queue
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
orion@OMEN-15:/mnt/d/College/2 Second year/SY SEM 3/Data Structures and Algorithms (DSA)/Lab manual/assign 4$ ./Assignment4
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
* 3.Display *
* 4.Exit *
* * * * * * * * *
Enter your choice: 1
Enter Data: 2
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
* 3.Display *
* 4.Exit *
* * * * * * * * *
Enter your choice: 1
Enter Data: 10
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
* 3.Display *
* 4.Exit *
* * * * * * * * *
Enter your choice: 3
Queue contains:
2, 5, 10,
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
0 0 Live Share
Ln 9, Col 12 Spaces: 4 UTF-8 CRLF C++ Win32


Assignment4.cpp > Queue
class Queue
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
* 3.Display *
* 4.Exit *
* * * * * * * * *
Enter your choice: 1
Enter Data: 10
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
* 3.Display *
* 4.Exit *
* * * * * * * * *
Enter your choice: 3
Queue contains:
2, 5, 10,
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
* 3.Display *
* 4.Exit *
* * * * * * * * *
Enter your choice: 2
Deleted Element= 2
Remaining jobs :
5, 10,
* * * * * * * * *
* 1.Insert Job *
* 2.Delete Job *
* 3.Display *
* 4.Exit *
* * * * * * * * *
Enter your choice: 4
orion@OMEN-15:/mnt/d/College/2 Second year/SY SEM 3/Data Structures and Algorithms (DSA)/Lab manual/assign 4$
0 0 Live Share
Ln 9, Col 12 Spaces: 4 UTF-8 CRLF C++ Win32