

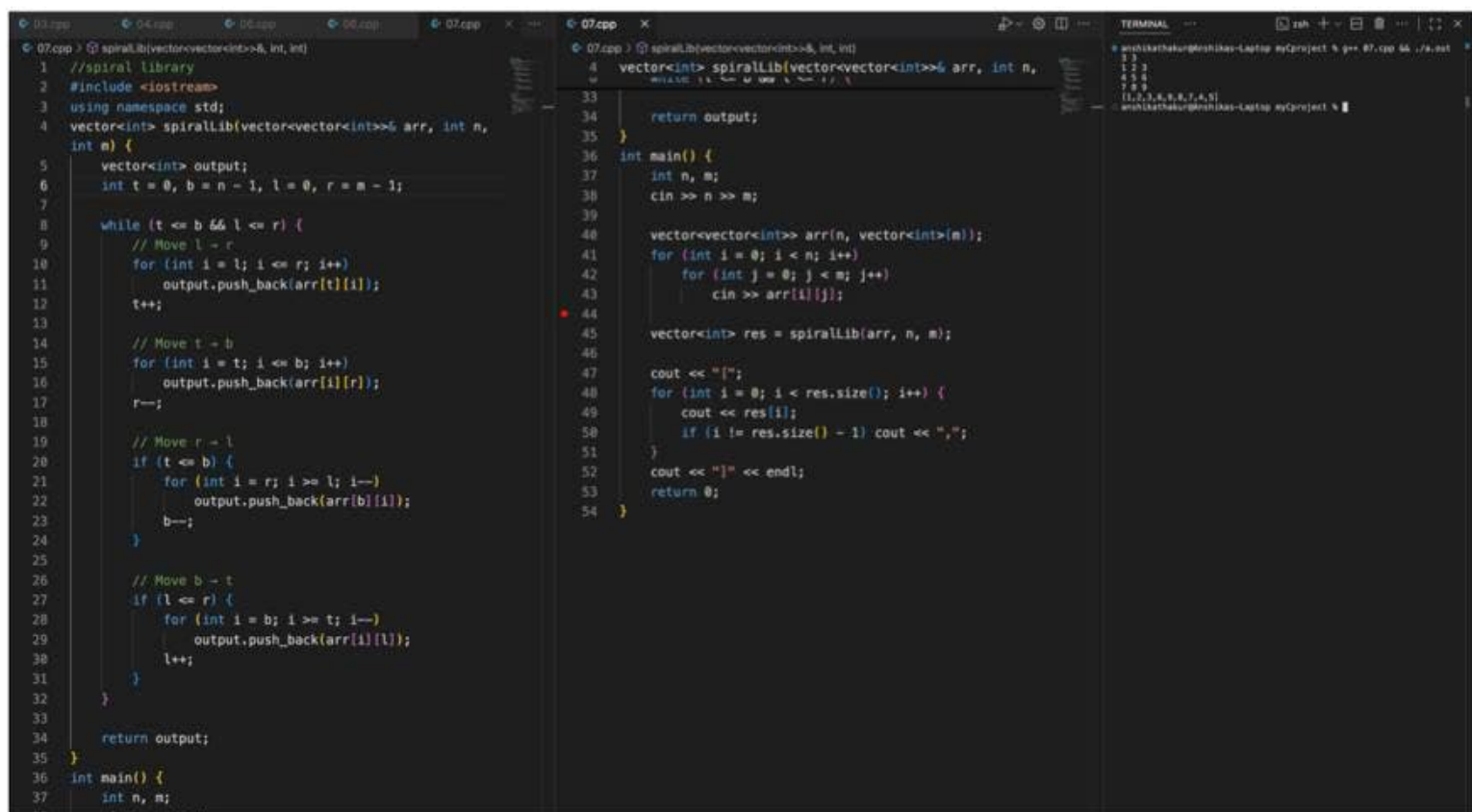
## Q7. The Spiral Library

The King built a library where books are kept in spiral shelves. Print them in **spiral order**.

**Input:**

```
3 3
1 2 3
4 5 6
7 8 9
```

**Output:** [1,2,3,6,9,8,7,4,5]



```
07.cpp > spiralLib(vector<vector<int>>& arr, int n, int m) {
1 //spiral library
2 #include <iostream>
3 using namespace std;
4 vector<int> spiralLib(vector<vector<int>>& arr, int n,
5 int m) {
6     vector<int> output;
7     int t = 0, b = n - 1, l = 0, r = m - 1;
8     while (t <= b && l <= r) {
9         // Move l -> r
10        for (int i = l; i <= r; i++)
11            output.push_back(arr[t][i]);
12        t++;
13        // Move t -> b
14        for (int i = t; i <= b; i++)
15            output.push_back(arr[i][r]);
16        r--;
17        // Move r -> l
18        if (t <= b) {
19            for (int i = r; i >= l; i--)
20                output.push_back(arr[b][i]);
21            b--;
22        }
23        // Move b -> t
24        if (l <= r) {
25            for (int i = b; i >= t; i--)
26                output.push_back(arr[i][l]);
27            l++;
28        }
29    }
30    return output;
31 }
32
33 int main() {
34     int n, m;
35     cin >> n >> m;
36     vector<vector<int>> arr(n, vector<int>(m));
37     for (int i = 0; i < n; i++)
38         for (int j = 0; j < m; j++)
39             cin >> arr[i][j];
40     vector<int> res = spiralLib(arr, n, m);
41     cout << "[";
42     for (int i = 0; i < res.size(); i++) {
43         cout << res[i];
44         if (i != res.size() - 1) cout << ",";
45     }
46     cout << "]" << endl;
47     return 0;
48 }
```

```
07.zpp > spiralLib(vector<vector<int>>& arr, int n, int m) {
1 vector<int> spiralLib(vector<vector<int>>& arr, int n,
2 int m) {
3     return output;
4 }
5
6 int main() {
7     int n, m;
8     cin >> n >> m;
9     vector<vector<int>> arr(n, vector<int>(m));
10    for (int i = 0; i < n; i++)
11        for (int j = 0; j < m; j++)
12            cin >> arr[i][j];
13    vector<int> res = spiralLib(arr, n, m);
14    cout << "[";
15    for (int i = 0; i < res.size(); i++) {
16        cout << res[i];
17        if (i != res.size() - 1) cout << ",";
18    }
19    cout << "]" << endl;
20    return 0;
21 }
```

```
TERMINAL
antistatistik@antistatistik-Laptop: myProject % g++ 07.cpp 06_78.out
3 3
1 2 3
4 5 6
7 8 9
[1,2,3,6,9,8,7,4,5]
antistatistik@antistatistik-Laptop: myProject %
```