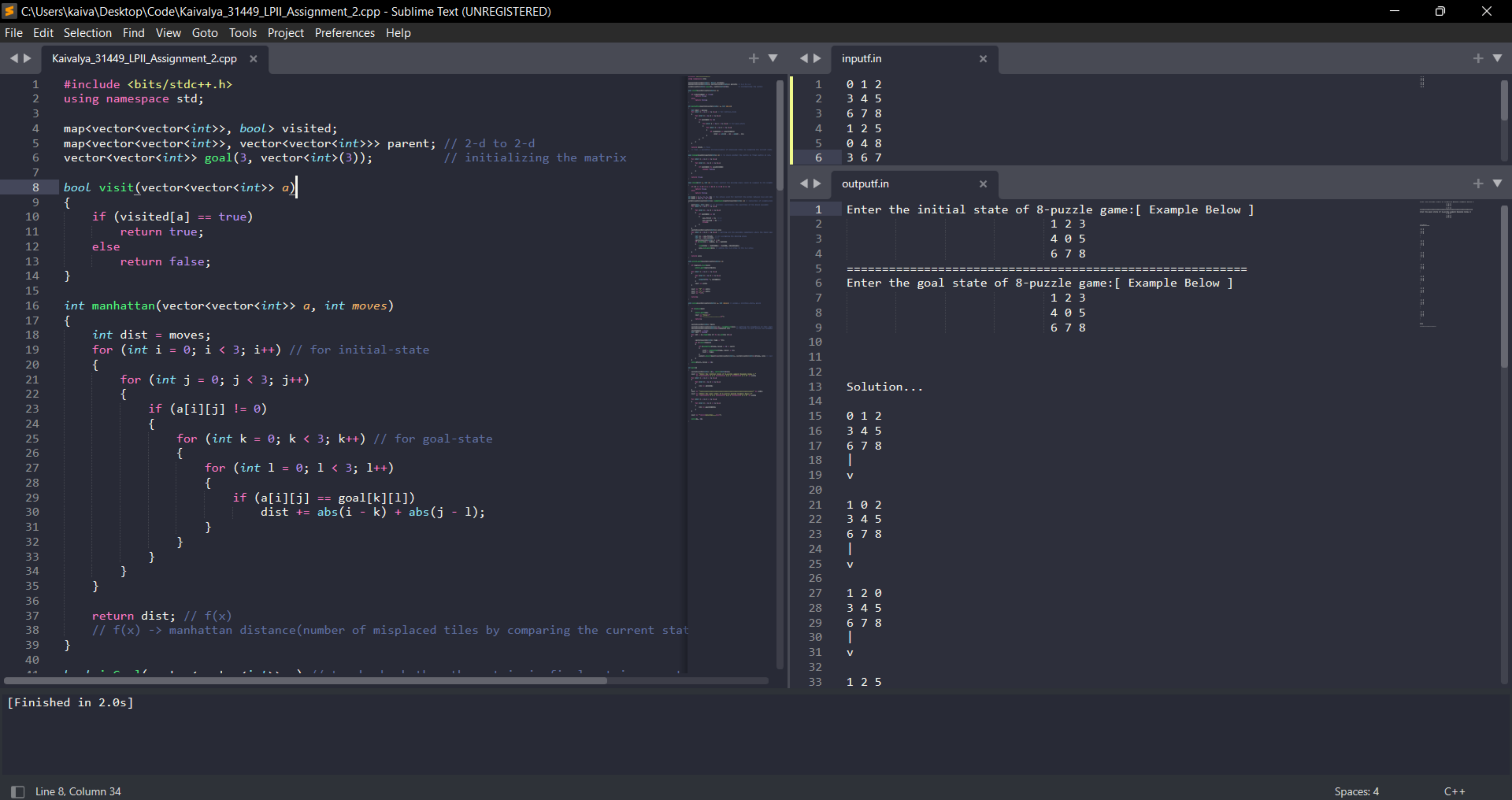

C:\Users\kaiva\Desktop\Code\Kaivalya_31449_LPII_Assignment_2.cpp - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
Kaivalya_31449_LPII_Assignment_2.cpp
inputf.in
outputf.in
Line 8, Column 34
Spaces: 4
C++

```cpp
#include <bits/stdc++.h>
using namespace std;

map<vector<vector<int>>, bool> visited;
map<vector<vector<int>>, vector<vector<int>>> parent; // 2-d to 2-d
vector<vector<int>> goal(3, vector<int>(3));          // initializing the matrix

bool visit(vector<vector<int>> a)
{
    if (visited[a] == true)
        return true;
    else
        return false;
}

int manhattan(vector<vector<int>> a, int moves)
{
    int dist = moves;
    for (int i = 0; i < 3; i++) // for initial-state
    {
        for (int j = 0; j < 3; j++)
        {
            if (a[i][j] != 0)
            {
                for (int k = 0; k < 3; k++) // for goal-state
                {
                    for (int l = 0; l < 3; l++)
                    {
                        if (a[i][j] == goal[k][l])
                            dist += abs(i - k) + abs(j - l);
                    }
                }
            }
        }
    }

    return dist; // f(x)
    // f(x) -> manhattan distance(number of misplaced tiles by comparing the current stat
}
```

inputf.in

```
0 1 2
3 4 5
6 7 8
1 2 5
0 4 8
3 6 7
```

outputf.in

```
Enter the initial state of 8-puzzle game:[ Example Below ]
                             1 2 3
                             4 0 5
                             6 7 8
=========================================================
Enter the goal state of 8-puzzle game:[ Example Below ]
                             1 2 3
                             4 0 5
                             6 7 8



Solution...

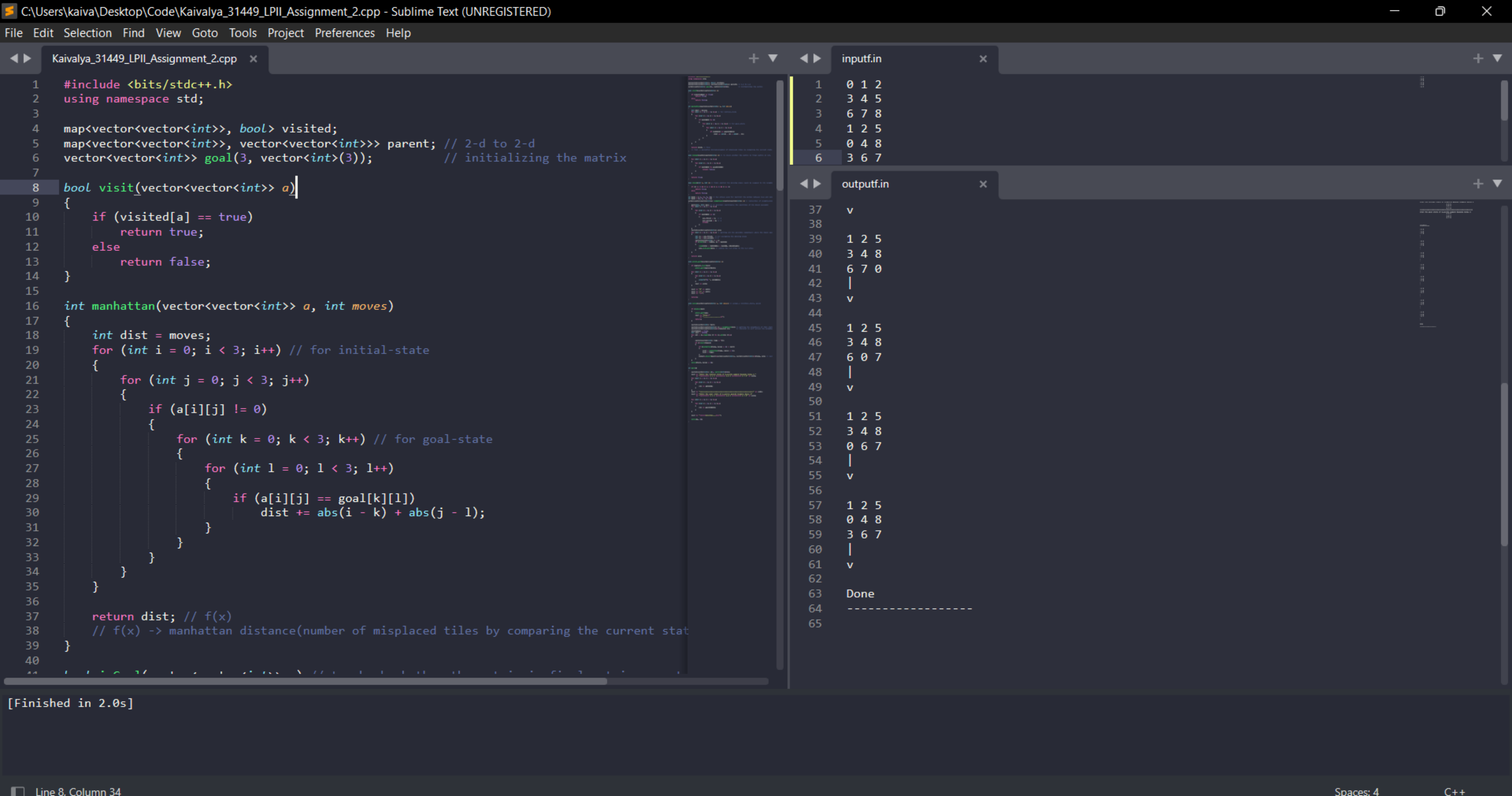
0 1 2
3 4 5
6 7 8
|
v

1 0 2
3 4 5
6 7 8
|
v

1 2 0
3 4 5
6 7 8
|
v

1 2 5
```

```
[Finished in 2.0s]
```



C:\Users\kaiva\Desktop\Code\Kaivalya_31449_LPII_Assignment_2.cpp - Sublime Text (UNREGISTERED)

Kaivalya_31449_LPII_Assignment_2.cpp

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```

inputf.in

```
0 1 2
3 4 5
6 7 8
1 2 5
0 4 8
3 6 7
```

outputf.in

```
v


1 2 5
3 4 8
6 7 0
|
v

1 2 5
3 4 8
6 0 7
|
v

1 2 5
3 4 8
0 6 7
|
v

1 2 5
0 4 8
3 6 7
|
v

Done
-----------------
```

```
[Finished in 2.0s]
```

Line 8, Column 34   Spaces: 4   C++