

## Print Boundary in C++

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

void printBoundary(vector<vector<int>>& mat) {
    int n = mat.size();
    int m = mat[0].size();

    // Print top row
    for (int j = 0; j < m; j++) {
        cout << mat[0][j] << " ";
    }

    // Print right column (excluding the top and bottom
    // elements already printed)
    for (int i = 1; i < n; i++) {
        cout << mat[i][m - 1] << " ";
    }

    // Print bottom row (excluding the bottom-right
    // corner already printed)
    if (n > 1) {
        for (int j = m - 2; j >= 0; j--) {
            cout << mat[n - 1][j] << " ";
        }
    }

    // Print left column (excluding the top-left and
    // bottom-left corners already printed)
    if (m > 1) {
        for (int i = n - 2; i > 0; i--) {
            cout << mat[i][0] << " ";
        }
    }
}

int main() {
    vector<vector<int>> mat = {
        {1, 2, 3, 4, 5},
        {6, 7, 8, 9, 10},
        {11, 12, 13, 14, 15},
        {16, 17, 18, 19, 20},
        {21, 22, 23, 24, 25}
    };

    printBoundary(mat);
    cout << endl;

    return 0;
}
```

Input Matrix (5x5):

```
[
  [ 1, 2, 3, 4, 5 ],
  [ 6, 7, 8, 9, 10 ],
  [11, 12, 13, 14, 15 ],
  [16, 17, 18, 19, 20 ],
  [21, 22, 23, 24, 25 ]
]
```

Step-by-step Dry Run Table:

Step	Indices	Printed Values
Top row	mat[0][0 to 4]	1 2 3 4 5
Right column	mat[1 to 4][4]	10 15 20 25
Bottom row	mat[4][3 to 0]	24 23 22 21
Left column	mat[3 to 1][0]	16 11 6

Dry Run Table

Phase	Loop Variable(s)	Value Printed
Top Row	j = 0 to 4	1 2 3 4 5
Right Col	i = 1 to 4	10 15 20 25
Bottom Row	j = 3 to 0 (reverse)	24 23 22 21
Left Col	i = 3 to 1 (reverse)	16 11 6

✓ Final Output:

1 2 3 4 5 10 15 20 25 24 23 22 21 16 11 6

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