59. Spiral Matrix II

Given an integer *n*, generate a square matrix filled with elements from 1 to *n*2 in spiral order.

For example, Given *n* = `3`,

You should return the following matrix:

```
[
 [ 1, 2, 3 ],
 [ 8, 9, 4 ],
 [ 7, 6, 5 ]
]
```

```
class Solution {
public:
    vector<vector<int>> generateMatrix(int n) {
        vector<vector<int> > res(n, vector<int>(n));
        int row = n, col = n, cnt = 1, x = 0, y = 0;
        while(cnt<=n*n){
            for(int i=y;i<col;i++){
                res[x][i] = cnt++;
            }
            x++;
            for(int i=x;i<row;i++){
                res[i][col-1] = cnt++;
            }
            col--;
            for(int i=col-1;i>=y;i--){
                res[row-1][i] = cnt++;
            }
            row--;
            for(int i=row-1;i>=x;i--){
                res[i][y]=cnt++;
            }
            y++;
        }
        return res;
    }
};
```