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#include<bits/stdc++.h>

using namespace std;

typedef long long ll;
typedef pair<int, int> pii;

#define F first
#define S second

const int MAXN = 1e3 + 10;

int n, a[MAXN][MAXN];

int main(){
    ios::sync_with_stdio(false);
    cin.tie(0);
    int te; cin >> te;
    while (te--){
        cin >> n;
        int cur = 1;
        for (int sm = 0; sm <= (n-1)+(n-1); sm++){
            for (int row = 0; row < n; row++){
                int col = sm - row;
                if (0 <= col && col < n)
                    a[row][col] = cur++;
            }

            for (int i = 0; i < n; i++){
                for (int j = 0; j < n; j++)
                    cout << a[i][j] << " ";
                cout << "\n";
            }
        }
        return 0;
    }
}
```