

Largest square formed in a matrix

找出矩阵中最大的全1子矩阵

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#include<bits/stdc++.h>

using namespace std;

typedef vector<vector<int>> vvi;
typedef vector<int> vi;

int largestSquare(vvi &matrix, int &n, int &m) {
    vvi dp(n, vi(m));
    int maxSize = INT_MIN;
    for (int i = 0; i < n; ++i) dp[i][0] = matrix[i][0];
    for (int j = 0; j < m; ++j) dp[0][j] = matrix[0][j];
    for (int i = 1; i < n; ++i) {
        for (int j = 1; j < m; ++j) {
            dp[i][j] = matrix[i][j] ? dp[i][j] = min(dp[i][j - 1], min(dp[i - 1][j], dp[i - 1][j - 1])) + 1
            : dp[i][j] = 0;
        }
    }

    for (int i = 0; i < n; ++i) {
        for (int j = 0; j < m; ++j)
            maxSize = max(maxSize, dp[i][j]);
    }
    return maxSize;
}

int main() {
    int T;
    scanf("%d", &T);
    while (T--) {
        int N, M;
        scanf("%d %d", &N, &M);
        vvi matrix(N, vector<int>(M));
        for (int i = 0; i < N; ++i) {
            for (int j = 0; j < M; ++j) {
                scanf("%d", &matrix[i][j]);
            }
        }
        printf("%d\n", largestSquare(matrix, N, M));
    }
    return 0;
}
```