Код до 3 варіанту

using System;

namespace ConsoleAppTestFoeach

{

class Program

{

static Random rnd = new Random();

static int[,] genMatrix(int M, int N)

{

int[,] Matrix = new int[M, N];

for (int i = 0; i < M; i++)

for (int j = 0; j < N; j++)

Matrix[i, j] = rnd.Next(10);

return Matrix;

}

static void printMatrix(int[,] Matrix)

{

for (int i = 0; i < Matrix.GetLength(0); i++)

{

for (int j = 0; j < Matrix.GetLength(1); j++)

Console.Write(Matrix[i, j].ToString() + " ");

Console.WriteLine();

}

}

static void CheckIndexes(int M, int N)

{

int i, j, Count = 0;

for (int k = 0; k <= Math.Min(M, N) / 2; k++)

{

i = k;

for (j = N - k - 1; j >= k; j--)

Console.Write("(" + (1 + i) + "; " + (1 + j) + "), ");

Console.WriteLine();

Count += N - 2 \* k;

j = k;

for (i = k + 1; i < M - k - 1; i++)

Console.Write("(" + (1 + i) + "; " + (1 + j) + "), ");

Console.WriteLine();

Count += M - 2 \* k - 2;

i = M - k - 1;

if (i != k)

{

for (j = k; j < N - k; j++)

Console.Write("(" + (1 + i) + "; " + (1 + j) + "), ");

Console.WriteLine();

Count += N - 2 \* k;

}

j = N - k - 1;

if (j != k)

{

for (i = M - k - 2; i >= k + 1; i--)

Console.Write("(" + (1 + i) + "; " + (1 + j) + "), ");

Console.WriteLine();

Count += M - 2 \* k - 2;

}

if (Count == M \* N)

break;

Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

}

}

static void CheckElemMatrix(int[,] Matrix)

{

int M = Matrix.GetLength(0);

int N = Matrix.GetLength(1);

int i, j, Count = 0;

int[] Max = new int[Math.Min(M, N) / 2 + 1];

for (int k = 0; k <= Math.Min(M, N) / 2; k++)

Max[k] = int.MinValue;

for (int k = 0; k <= Math.Min(M, N) / 2; k++)

{

i = k;

for (j = N - k - 1; j >= k; j--)

Console.Write(Matrix[i, j] + " ");

Count += N - 2 \* k;

j = k;

for (i = k + 1; i < M - k - 1; i++)

Console.Write(Matrix[i, j] + " ");

Count += M - 2 \* k - 2;

i = M - k - 1;

if (i != k)

{

for (j = k; j < N - k; j++)

{

Console.Write(Matrix[i, j] + " ");

if (Max[k] < Matrix[i, j])

Max[k] = Matrix[i, j];

}

Count += N - 2 \* k;

}

j = N - k - 1;

if (j != k)

{

for (i = M - k - 2; i >= k + 1; i--)

Console.Write(Matrix[i, j] + " ");

Count += M - 2 \* k - 2;

}

if (Count == M \* N)

break;

//Console.WriteLine("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

}

Console.WriteLine("Max in rows");

foreach (int elem in Max)

if (elem != int.MinValue)

Console.Write(elem + " ");

Console.WriteLine();

}

static void Main(string[] args)

{

/\*int M = rnd.Next(5,15);

int N = rnd.Next(5,15);\*/

int N = int.Parse(Console.ReadLine());

int M = int.Parse(Console.ReadLine());

int[,] Matrix = genMatrix(M, N);

Console.WriteLine("M = " + M + "; N = " + N);

printMatrix(Matrix);

CheckIndexes(M, N);

CheckElemMatrix(Matrix);

}

}

}

Результат

