//Objective: Create Magic Square

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//libraries

#include <fstream> //for file input

#include <iostream> //for input and output

#include <string> //for using string built in functions

using namespace std;

int main()

{

//Data

const int WIDTH = 3;

const int HEIGHT = 3;

int magicSquare [3][3];

int sumColumn = 0;

int sumRow = 0;

int diagonal = 0;

//Enter data for magic square

cout << "Enter numbers of magic square (left to right, top to bottom): " << endl;

//Add to array

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

{

for(int b = 0; b < WIDTH ; b++)

{

cout << "Row " << i << ", Column " << b << ": ";

cin >> magicSquare[i][b];

cin.ignore(1000,10);

}

}

//Check if it's a magic square (columns, rows)

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

{

sumRow = 0;

sumColumn = 0;

for(int b = 0; b < WIDTH ; b++)

{

sumColumn += magicSquare[i][b];

sumRow += magicSquare[b][i];

}

if(sumRow != sumColumn)

{

cout << "This is NOT a magic square";

break;

}

}

//Check if diagonal is the same

diagonal = magicSquare[0][0] + magicSquare[1][1] + magicSquare[2][2];

//Last check

if(sumRow == diagonal)

{

cout << "This is a magic square";

}

else if (sumColumn == sumRow)

{

cout << "This is NOT a magic square";

}

}