
Algorithms Level 3
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ProgrammingAdvices.com

```cpp
#include <iostream>
#include <string>
#include <iomanip>

using namespace std;

int RandomNumber(int From, int To)
{
     //Function to generate a random number
     int randNum = rand() % (To - From + 1) + From;
     return randNum;
}

void FillMatrixWithRandomNumbers(int arr[3][3], short Rows, short
Cols)
{
     for (short i = 0; i < Rows; i++)
     {
          for (short j = 0; j < Cols; j++)
          {
               arr[i][j] = RandomNumber(1, 10);
          }
     }
}

void PrintMatrix(int arr[3][3], short Rows, short Cols)
{

     for (short i = 0; i < Rows; i++)
     {
          for (short j = 0; j < Cols; j++)
          {
               printf(" %0*d   ", 2, arr[i][j]);
               //cout << setw(3) << arr[i][j] << "     ";
          }
          cout << "\n";
     }

}
```

```
int SumOfMatrix(int Matrix1[3][3], short Rows, short Cols)
{
	int Sum = 0;
	for (short i = 0; i < Rows; i++)
	{
		for (short j = 0; j < Cols; j++)
		{
			Sum += Matrix1[i][j];
		}
	}

	return Sum;
}

bool AreEqualMatrices(int Matrix1[3][3], int Matrix2[3][3], short
Rows, short Cols)
{
	return (SumOfMatrix(Matrix1, Rows, Cols) ==
SumOfMatrix(Matrix2, Rows, Cols));

}

int main()

{
	//Seeds the random number generator in C++, called only once
	srand((unsigned)time(NULL));

	int Matrix1[3][3], Matrix2[3][3];

	FillMatrixWithRandomNumbers(Matrix1, 3, 3);
	cout << "\nMatrix1:\n";
	PrintMatrix(Matrix1, 3, 3);

	FillMatrixWithRandomNumbers(Matrix2, 3, 3);
	cout << "\nMatrix2:\n";
	PrintMatrix(Matrix2, 3, 3);


	if (AreEqualMatrices(Matrix1, Matrix2, 3, 3))
		cout << "\nYES: both martices are equal.";
	else
		cout << "\nNo: martices are NOT equal.";

	system("pause>0");

}
```