
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";
     }

}
```

```
bool AreTypicalMatrices(int Matrix1[3][3], int Matrix2[3][3],
short Rows, short Cols)
{

     for (short i = 0; i < Rows; i++)
     {
          for (short j = 0; j < Cols; j++)
          {
               if (Matrix1[i][j] != Matrix2[i][j])
               {
                    return false;
               }
          }
     }

     return true;
}

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

     system("pause>0");

}
```