Algorithms Level 3

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```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, 100);
        }
    }
}

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

    for (short i = 0; i < Rows; i++)
    {
        for (short j = 0; j < Cols; j++)
        {
            cout << setw(3) << arr[i][j] << "     ";
        }
        cout << "\n";
    }

}
```

```cpp
int RowSum(int arr[3][3],short RowNumber, short Cols)
{
    int Sum = 0;
    for (short j = 0; j <= Cols - 1; j++)
    {
        Sum += arr[RowNumber][j];
    }

    return Sum;
}

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

    for (short i = 0; i < Rows; i++)
    {

        arrSum[i] = RowSum(arr, i, Cols);

    }

}

void PrintRowsSumArray(int arr[3], short Rows)
{
    cout << "\nThe the following are the sum of each row in the
matrix:\n";
    for (short i = 0; i < Rows; i++)
    {

        cout << " Row " << i + 1 << " Sum = " << arr[i] << endl;

    }
}
```

```cpp
int main()

{

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

    int arr[3][3];
    int arrSum[3];

    FillMatrixWithRandomNumbers(arr, 3, 3);
    cout << "\nThe following is a 3x3 random matrix:\n";
    PrintMatrix(arr, 3, 3);

    SumMatixRowsInArry(arr, arrSum, 3,3);

    PrintRowsSumArray(arrSum, 3);

    system("pause>0");

}
```