

```
1  #include<iostream>
2  #include<string>
3  #include<iomanip>
4  using namespace std;
5
6  int RandomNumber(int From, int To)
7  {
8      //Function to generate a random number
9      int randNum = rand() % (To - From + 1) + From;
10     return randNum;
11 }
12 void FillMatrixWithRandomNumbers(int arr[3][3], short Rows, short Cols)
13 {
14     for (short i = 0; i < Rows; i++)
15     {
16         for (short j = 0; j < Cols; j++)
17         {
18             arr[i][j] = RandomNumber(1, 100);
19         }
20     }
21 }
22
23 void PrintMatrix(int arr[3][3], short Rows, short Cols)
24 {
25
26     for (short i = 0; i < Rows; i++)
27     {
28         for (short j = 0; j < Cols; j++)
29         {
30             cout << setw(3) << arr[i][j] << "    ";
31         }
32         cout << "\n";
33     }
34 }
35
36 int ColSum(int arr[3][3], short ColNumber, short Rows)
37 {
38     int Sum = 0;
39
40     for (short j = 0; j <= Rows - 1; j++)
41     {
42         Sum += arr[j][ColNumber];
43     }
44     return Sum;
45 }
46
47 void SumEachColSum(int arr[3][3], int arrSum[3], short Rows, short Cols)
48 {
49
50     for (short i = 0; i < Cols; i++)
51     {
52         arrSum[i] = ColSum(arr, i, Rows);
53     }
```

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54 }
55
56 void PrinEachColSum(int arrSum[3],short Cols)
57 {
58     cout << "\nThe the following are the sum of each Col in the matrix:\n";
59     for (short i = 0; i < Cols; i++)
60     {
61         cout << " Col " << i + 1 << " Sum = " << arrSum[i] << endl;
62     }
63 }
64
65 int main()
66 { //Seeds the random number generator in C++, called only once
67     srand((unsigned)time(NULL));
68     int arr[3][3];
69     int arrSum[3] = { 0 };
70
71     FillMatrixWithRandomNumbers(arr, 3, 3);
72
73     cout << "\nThe following is a 3x3 random matrix:\n";
74     PrintMatrix(arr, 3, 3);
75
76     SumEachColSum(arr, arrSum, 3, 3);
77     PrinEachColSum(arrSum, 3);
78
79     system("pause>0");
80 }
```