# C_59 ⇒ Two Dimensional Arrays

## 2D Array Program 4

* Program to add two matrix in C:

```
void main()
{
 int a[100][100], b[100][100], c[100][100], i, j;
  int m, n;
  printf (" Enter number of rows: \n ");
   scanf ("%d", &m);
  printf (" Enter number of columns: \n ");
   scanf ("%d", &n);
    for(i=0; i<m; i++)
    {
      for(j=0; j<n; j++)
      {
       printf (" Enter value of a[%d][%d]: ", i, j);
        scanf ("%d, & a[i][j]);
      }
    }
   for(i=0; i<m; i++)
   {
     for(j=0; j<n; j++)
     {
       printf (" Enter value of b[%d][%d]: ", i, j);
       scanf ("%d", &b[i][j]);
     }
   for(i=0; i<m; i++)
   {
    for(j=0; j<n, j++)
```

```
        c[i][j] = a[i][j] + b[i][j];
        printf("%d\t", c[i][j]);
    }
    printf("\n");
}
getch();
}
```

O/P

Enter number of rows: 2
Enter number of Columns: 2

Enter value of a[0][0]: 1
Enter value of a[0][1]: 2
Enter value of b[0][0]: 1
Enter value of b[0][1]: 2

$$\begin{bmatrix} 1 & 2 \\ 1 & 2 \end{bmatrix} \begin{bmatrix} 1 & 2 \\ 1 & 2 \end{bmatrix}$$

$$\begin{bmatrix} 2 & 4 \\ 2 & 4 \end{bmatrix}$$

CODE 1:

```c
#include <stdio.h>
#include <stdlib.h>
#define N 100
/** 4 - 2D ARRAY PROGRAM **/
/** PRINT PROGRAM TO ADD TWO MATRICES IN C **/
/** RULE: Both matrix should have same rows and columns **/
int main()
{
  int a[N][N],b[N][N],c[N][N],i,j,m,n;
  printf("Enter number of Rows:");
  scanf("%d",&m);
  printf("Enter number of Columns:");
  scanf("%d",&n);
  for(i=0;i<m;i++)
  {
   for(j=0;j<n;j++)
   {
    printf("Enter value of a[%d][%d]:",i,j);
    scanf("%d",&a[i][j]);
   }
  }

  for(i=0;i<m;i++)
  {
   for(j=0;j<n;j++)
   {
    printf("Enter value of b[%d][%d]:",i,j);
    scanf("%d",&b[i][j]);
   }
  }
  printf("\nFirst matrix:\n");
  for(i=0;i<m;i++)
  {
   for(j=0;j<n;j++)
   {
    printf("%d\t",a[i][j]);
   }
   printf("\n");
  }
```

```
39      printf("\nSecond matrix:\n");
40      for(i=0;i<m;i++)
41      {
42       for(j=0;j<n;j++)
43       {
44        printf("%d\t",b[i][j]);
45       }
46       printf("\n");
47      }
48      printf("\nSum matrix:\n");
49      for(i=0;i<m;i++)
50      {
51       for(j=0;j<n;j++)
52       {
53        c[i][j]=a[i][j]+b[i][j];
54        printf("%d\t",c[i][j]);
55       }
56       printf("\n");
57      }
58    getch();
59    }
```

```
"D:\1. C NOTEBOOK\C LANGUAGE\C PROGR
Enter number of Rows:2
Enter number of Columns:2
Enter value of a[0][0]:1
Enter value of a[0][1]:2
Enter value of a[1][0]:3
Enter value of a[1][1]:4
Enter value of b[0][0]:1
Enter value of b[0][1]:2
Enter value of b[1][0]:3
Enter value of b[1][1]:4

First matrix:
1       2
3       4

Second matrix:
1       2
3       4

Sum matrix:
2       4
6       8
```