



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

COURSE NAME : 23ITT101- PROBLEM SOLVING & C PROGRAMMING

I YEAR /I SEMESTER

Unit 3- C-ARRAYS AND STRINGS

Topic : Arrays-Two Dimensional Array



Two-Dimensional array Array Declaration



Syntax:

data_type array_name[row_size] [col_size];

Example: *int x[3][2];*

	Col 0	Col 1	Col 2
row 0	X[0][0]	X[0][1]	X[0][2]
row 1	X[1][0]	X[1][1]	X[1][2]
row 2	X[2][0]	X[2][1]	X[2][2]



Array Initialization



Syntax:

*data_type array_name[row_size]
[col_size];={variables};*

Example: *int x[3][3]={1,50,2,75,8,4,9,33,77};*

	Col 0	Col 1	Col 2
row 0	1	50 ₃	2
row 1	75	8	4
row 2	9	33	77



//program to assign values to array and to display it



```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a[3][3]={10,20,30,40,50,60,70,80,90};
    int i,j;
    clrscr();
    printf("Values in array : \n");
    for(i=0;i<3;i++)
    {
        for(j=0;j<3;j++)
        {
            printf("a[%d][%d] = %d\n",i,j,a[i][j]);
        }
    }
    getch();
}
```

OUTPUT

Values in array :

a[0][0]=10

a[0][1]=20

a[0][2]=30

a[1][0]=40

a[1][1]=50

a[1][2]=60

a[2][0]=70

a[2][1]=80

a[2][2]=90



//program to assign values to array from user and to

```
display it
#include <stdio.h>
#include <conio.h>
void main()
{
    int a[3][3],i,j;
    clrscr();
    printf("Enter 9 values in array : \n");
    for(i=0;i<3;i++)
    {
        for(j=0;j<3;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }
    printf("Values in array : \n");
    for(i=0;i<3;i++)
    {
        for(j=0;j<3;j++)
        {
            printf("a[%d][%d] = %d\n",i,j,a[i][j]);
        }
    }
}
```

```
getch();
}
```

OUTPUT

Enter 9 values in array :

10

20

30

40

50

60

70

80

90

Values in array :

a[0][0]=10

a[0][1]=20

a[0][2]=30

a[1][0]=40

a[1][1]=50

a[1][2]=60

a[2][0]=70

a[2][1]=80

a[2][2]=90





Thank You