



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35.

An Autonomous Institution

COURSE NAME : 23CST101 PROBLEM SOLVING AND C PROGRAMMING

I YEAR/ I SEMESTER

UNIT-III ARRAYS AND STRINGS

Topic: Array Types

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Types of Arrays in C



In c programming language, arrays are classified into **two types**. They are as follows...

1. Single Dimensional Array / One Dimensional Array
2. Multi Dimensional Array



One Dimensional Array



One Dimensional Array

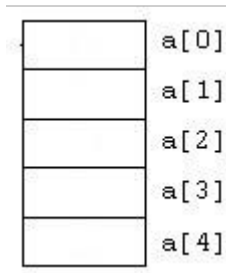
The collection of data items can be stored under a one variable name using only one subscript such a variable is called one dimensional array.

Syntax:

```
datatype arrayname[Size];
```

Example:

```
int num[5];
```





Initialization



One Dimensional array Initialization

After an array is declared its elements must be initialized .Otherwise it will contains an garbage values.

The array can be initialized by 2 stages

- ✓ At Compile time
- ✓ At Run time
- **At Compile time Initialization Syntax:**

```
datatype arrayname[Size]={list of values};
```

Example:1

```
int a[5]={1,2,4,8,16};
```

Example:2

```
float a[5]={10.2,11.2,12.2};
```

Example 3:

```
Char name[ ]={'j', 'o', 'h', 'n', '\0'};
```



➤ **At Run time Initialization**

Arrays can be explicitly initialized at run time. Usually applied for larger arrays

Example:

```
for(i=0;i<100;i=i+1)
{
    if(i<50)
    {
        sum[i]=0;
    }
    else
    {
        sum[i]=1;
    }
}
```



Thank You!