ShreeSoft INFORMATICS

Array in C Language

Need of Array:

Suppose if we want to read and print student details like rollno, name, marks, percentage for 1 student then we need 4 variables roll no of type int, name of type string, marks of int and percentage of type float. But if we want to read and print 100 student details then we need 400 variable (4 x 100 = 400) which is impossible to declare and handle 400 variable in program. So we can solve this problem by using concept array.

Definition: An array is a list of element where all the elements are of same datatype.

Operations on Array

1. Create list of element
2. Print list of element
3. Traversing list
4. Insert element in to list
5. Delete element from list
6. Search element from list
7. Sorting list etc.

Types of Array

1) One Dimensional Array
2) Two or Multidimensional Array

One Dimensional Array:

One dimensional array is single list of element where all the element are of same datatype.

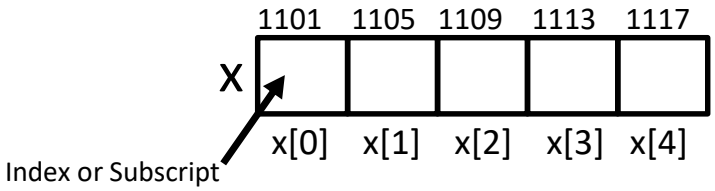
Syntax:

Datatype arrayname [size];

Where

Datatype represent the type of value stored in array
arrayname represent the name of array.
size represent the number of element in an array.

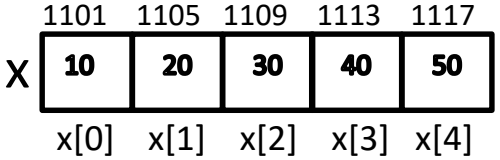
Example: int x[5];



Initialization of One Dimensional Array:

1) At the time of declaration of Array

Example: int x[5]={10,20,30,40,50};

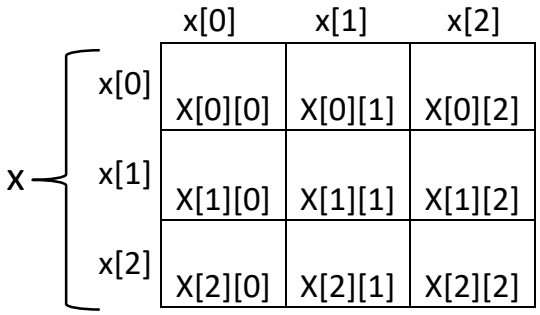


2) After the declaration of Array
   Example: int x[5];
   x[0]=10;
   x[1]=20;
   x[2]=30;
   x[3]=40;
   x[4]=50;

Two or Multi-Dimensional Array

Two dimensional array is multi list of element where all the element are of same datatype.
Syntax: datatype arrayname[size1][size2];
Where
size1 – it represent the number of rows. i.e. number of list in array
size2 – it represent the number of column in each row. i.e. number of element in each list.
Example:

int x[3][3];



Initialization of One Dimensional Array:

1) At the time of declaration of Array

   Example: int x[3][3]={{10,20,30},{40,50,60},{70,80,90}};

2) After the declaration of Array
   Example: int x[5];
   x[0][0]=10;
   x[0][1]=20;
   x[0][2]=30;
   x[1][0]=40;
   x[1][1]=50;
   x[1][2]=60;
   x[2][0]=70;
   x[2][1]=80;
   x[2][2]=90;

OR

```
Int I, j, k=10;
for(i=0;i<3;i++)
{
        for(j=0;j<3;j++)
        {
                x[i][j]=k;
                k++;
        }
}
```