Array Notes:

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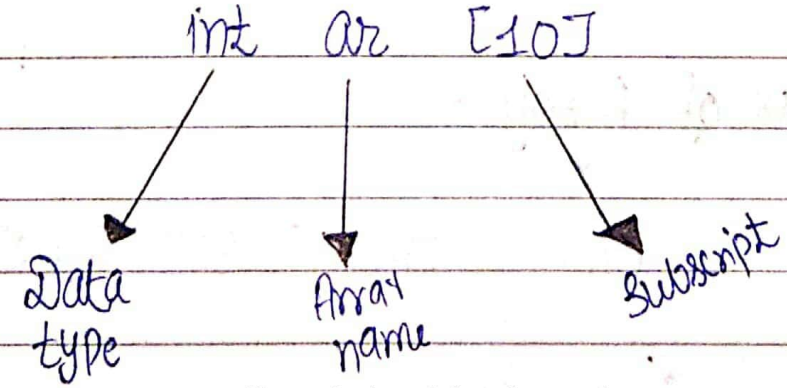
* Definition of an Array :-

- An array is a collection of items stored at contiguous memory locations.
- Array are defined as the collection of similar type of data items.
- Arrays are the derived data type in C Programming language which can store type of data such as int, char, float, etc.
- Important Terms to understand the concept of Array:
  - Element :- Each item stored in an array is called an element.
  - Index :- Each location of an element in an array has a numerical index.

→ The subscript or an index is enclosed in brackets array name.



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→ If one subscript is used, the array is known as one-dimensional array.

→ If two subscripts are used, the array is known as two-dimensiondl array

→ The array which have two or more subscripts, are also known as Multidimensional Array.

* Array Declaration:-

The elements in an array starts with 0.

→ To declare an array, we must provide following information:-

1. Data type of an array.
2. The name of the array.
3. The name of subscripts in an array.
4. The maximum value of subscript.

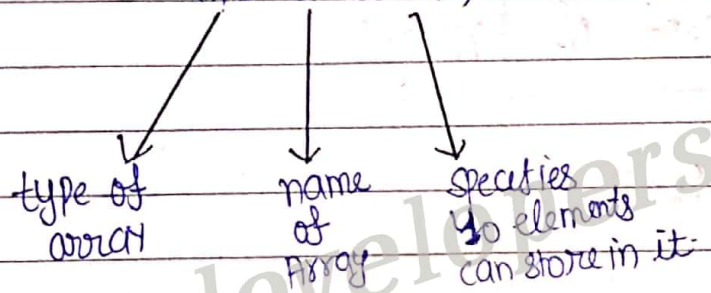
Syntax of Array:-

```
type name [sub1] [sub2] ... ;
```

→ where, "type" :- is the data type (int, char or float)
→ "name" :- is the name of the array.
→ "sub1", sub2 ..." :- are the number of subscripts arrays in an array.

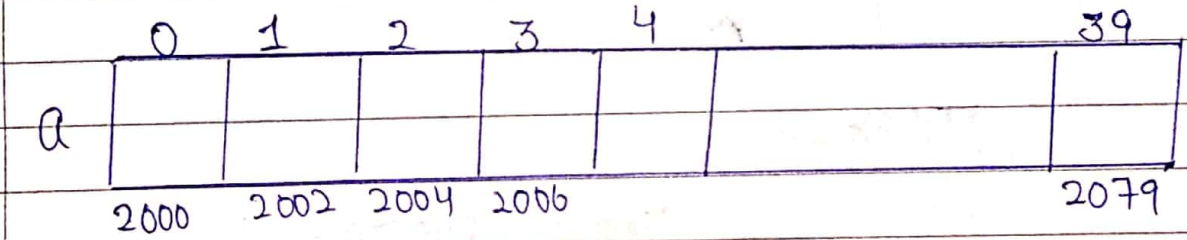
Example

int a [40];



* Array representation :- 1. One dimensional Array

int a [40];



→ One integer value requires 2 bytes of memory.

→ Array 'a', reserve a contiguous block of 80 bytes in memory.

→ 2000, 2002 --- are addresses of memory locate

→ It Starts from 0 location and ends with one less than value of subscript i.e. 39.

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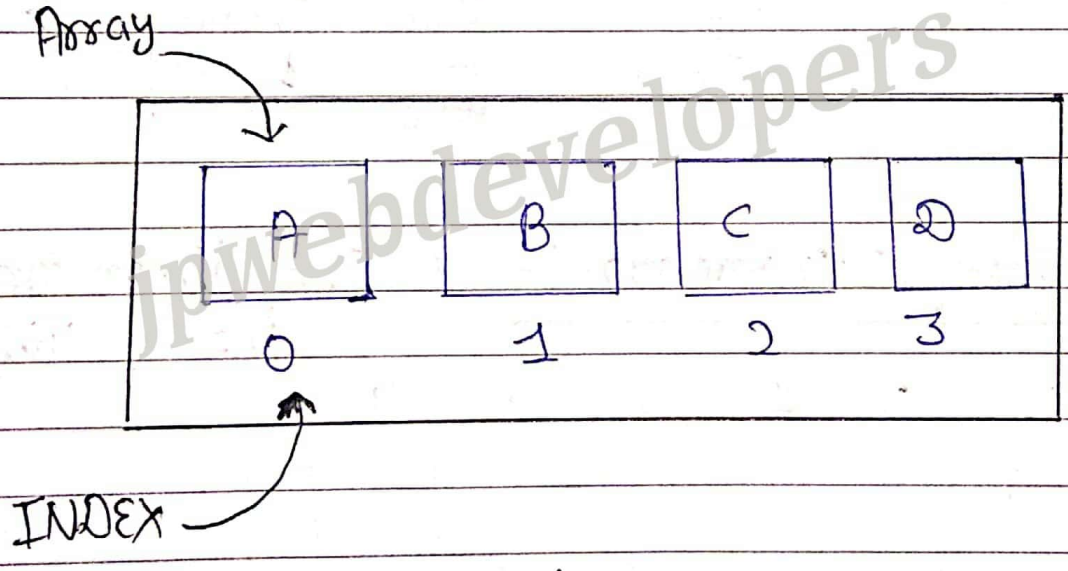
2. int a[2][3] = {10,20,30,40,50,60};

	Col 0	Col 1	Col 2
Row 0	10	20	30
Row 1	40	50	60

* Concept of Array :-



Array length = 4

first Index = 0

Last Index = 3