

Learning Consolidation

Working With Arrays



In this sprint, you have learned to:

- What is an Array?
- Types of Array
- Memory Allocation for Array
- Jagged Array



What Is an Array?

Array Name - ageOfPlayers

Value of array	30	32	33	28	29	30	41	33	32
Index	0	1	2	3	4	5	6	7	8

- An array is a collection of items of similar data type referred by a common name (ex - ageOfPlayers)
- It contains fixed number of items of same data type.
- Individual data items in arrays are called elements.
- Each element of an array is indexed. Indexing begins at 0.
- An index is the position at which the element is stored in the array.
- Each element is accessed by its numerical index.
- Elements are stored contiguously in memory, i.e., in consecutive memory locations.

Array Declaration With Size

- `int age [] = new age[10];`
- The number 10 indicates the number of elements in the Array or size of the Array.
- Once an Array is created, its size is fixed. It cannot be changed.
 - `int size = array.length`
 - Here the size of the Array is 10 which can be determined using the `length` property.
 - Here age is called **reference** variable that will hold ten integer values.
- Note – We will discuss more about `new` keyword in next course.

Declare and Initialize an Array

- The declaration, initialization and assigning of values to an array can happen in one step.
- When the size of the array and variables of the array are already known, array literals can be used.
- Array literals are just like primitive type, where an array is declared, initialized without the new keyword.
- The number of elements determines the length of the created array.
- The age array is of size 5.

```
public static void main(String[] args) {  
    int age[] = {34, 35, 36, 37, 37};  
}
```

Array values

34	35	36	37	37
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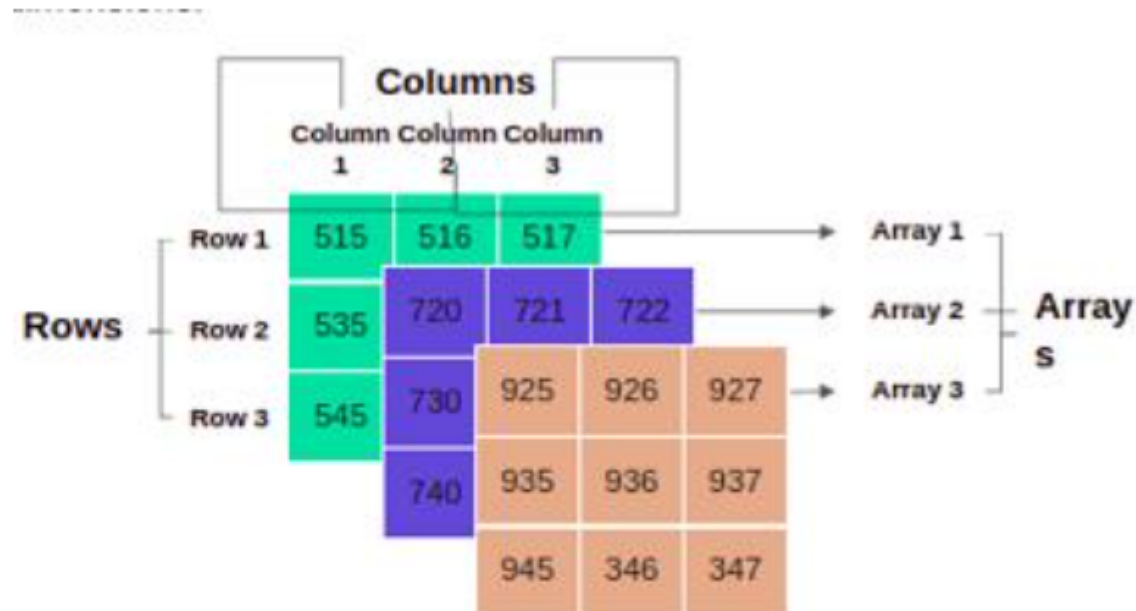
0	1	2	3	3
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Index

Types of Array

- **Multidimensional Array:**
 - A collection of elements with a multi-index value.
 - It can have multiple rows and columns.
 - It can have two or more dimensions.

Country Name	Go Id	Silver	Bronze
USA	46	28	29
CHINA	38	28	22
INDIA	29	17	19



Jagged Arrays

- A Jagged array is a multidimensional array and is also known as “Array of Arrays”.
- It is an array that further comprises of arrays of different sizes and dimensions.
- In this array, the number of elements may not be equal in each row.

