

Java Arrays :-

- Array is an object which contains elements of a similar data type.
- The elements of an array are stored in a contiguous memory location. We can store only a fixed set of elements in a Java array.
- Array in Java is index based, the first element of the array is stored at the 0th index, 2nd element is stored on 1st index and so on.
- To declare an array, define the variable type with

44	53	65	17	22	46	39	71	89
0	1	2	3	4	5	6	7	8

← Array index

Array length = 9

first index = 0

last index = 8

* Array Declaration:-

- In Java, here is how we can declare an array:-

```
datatype [] arrayRefVar;
```

- datatype it can be primitive data types like int, char, double.
- arrayRefVar is an identifier

for example:-

```
double [] mylist;
```

Here, mylist is an array that can hold values of type double.

* Array Initialization:-

- In Java, we can initialize arrays during declaration.

```
int [] age = { 12, 4, 5, 2, 5 };
```

- Here, we have created an array named age and initialized it with the curly brackets.

- In the Java array, each memory location is associated with a number. array.
- The number is known as an index.
- We can also initialize arrays in Java, using the index number.

for example:-

```
int[] age = new int [5],
//initialize array
age[0] = 12;
age[1] = 4;
age[2] = 5;
age[3] = 2;
age[4] = 5;
```

age[0]	age[1]	age[2]	age[3]	age[4]
12	4	5	2	5

Java Arrays initialization.

- first element of an array is at index 0.
- If the size of an array is n then the last element of the array will be at index $n-1$.

* Creating Arrays :-

- you can create an array by using the new operator the following syntax.
- To define the number of elements that an array can hold, we have to allocate memory for the array in Java.

```
double [] data;
```

```
data = new double [10];
```

→ array can store 10 elements. we can also say that the size or length of the array is 10.

for example :-

```
double [] data = new double [10];
```

* Access Elements of an Array :-

- Once the array is created, you can access an array element by using the name of the array followed by an index enclosed between a pair of square brackets.

Example:-

```
class Demo
```

```
{ public static void main (String [] args)
```

```
{ int [] num = new int [5];
```

```
num [0] = 5;
```

```
num [1] = 10;
```

```
num [2] = 25;
```

```
System.out.println ("num [0]:" + num [0]);
```

```
System.out.println ("num [1]:" + num [1]);
```

```
System.out.println ("num [2]:" + num [2]);
```

```
}
```

```
}
```