

Arrays

24 November 2023 09:19 AM

An array is a data structure that stores a collection of elements of the same type stored in a contiguous memory location.

Syntax

```
dataType[] variable_name = new dataType[size]
```

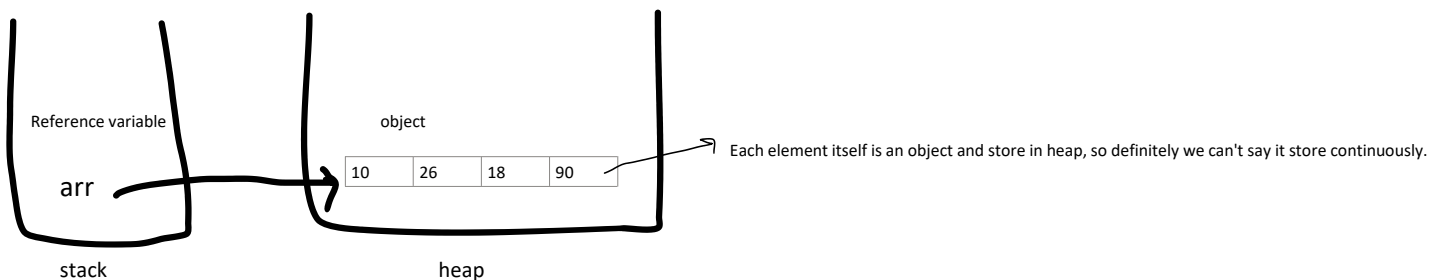
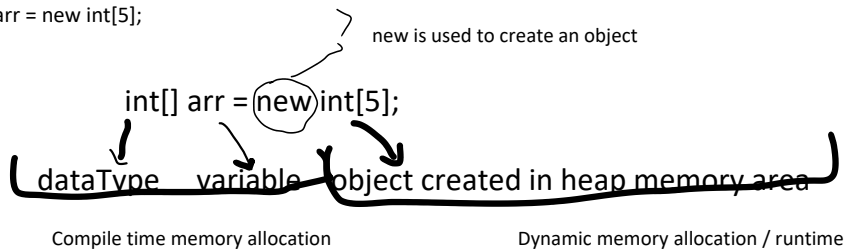
```
int[] srr = new int[5];
```

Array elements are initialized to 0 by default.

```
int[] srrsy2 = {23,14,25,46,89};
```

```
int[] arr;
```

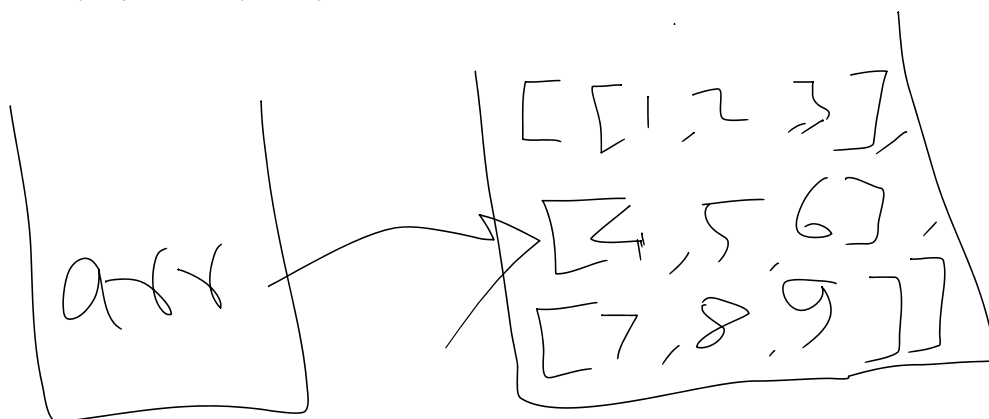
```
arr = new int[5];
```



1. Array objects are stored in the heap memory area.
2. Heap objects are not continuous as per Java Language Specification. It may or may not be.

2D Array

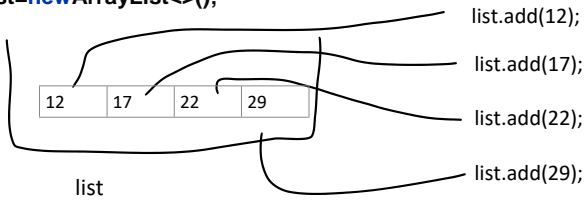
2D arrays in java are array of array





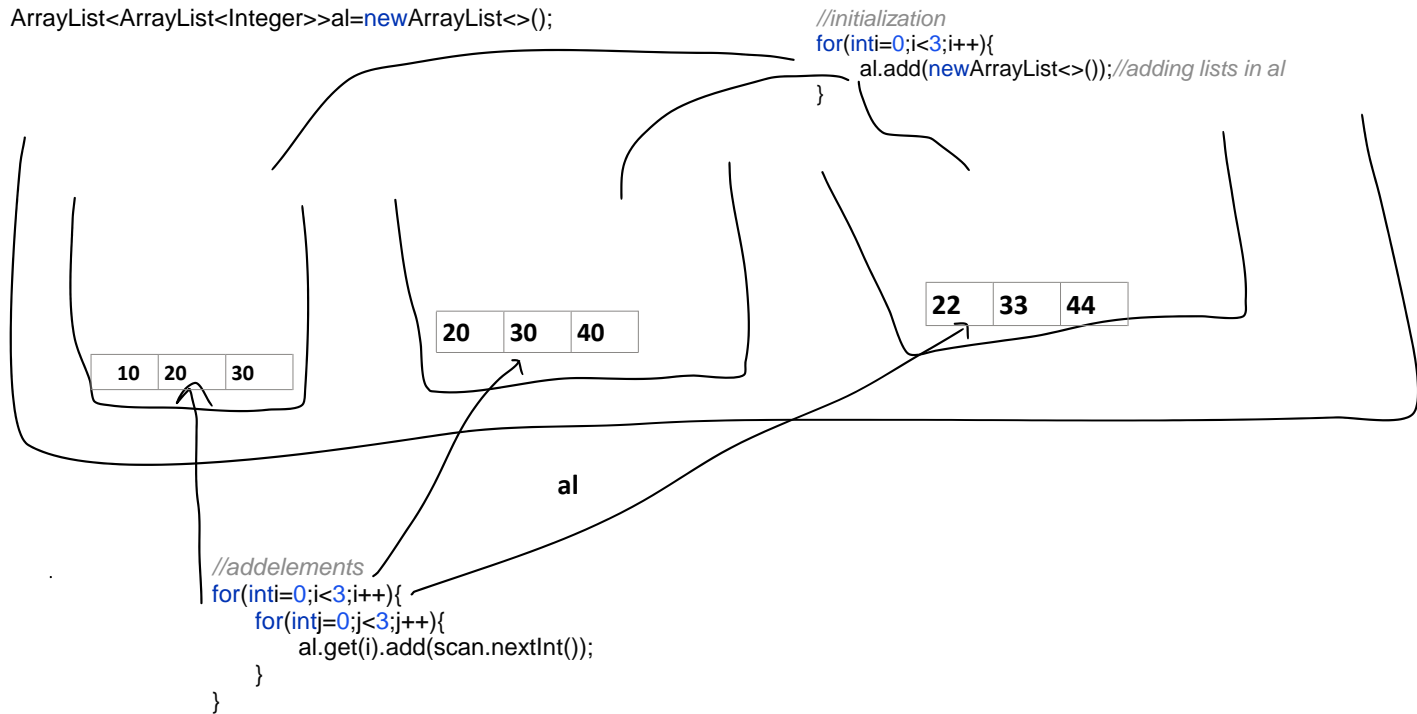
ArrayList

```
ArrayList<Integer>  
list=newArrayList<>();
```



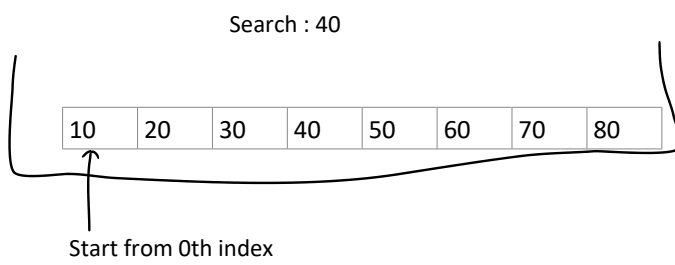
Multi-dimensional list

```
ArrayList<ArrayList<Integer>>al=newArrayList<>();
```



Linear Search

Search the element from start to end/till the element is found.



Time Complexity :

Best Case	$O(1)$
Average Case	$O(n)$
Worst Case	$O(n)$

Element found at 0th index

n : size of array