

Arrays:

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- * Java array is an object which contains elements of a similar data type
- * Additionally, the elements of an array are stored in a contiguous memory location
- * It is a data structure where we store similar elements
- * We can store only a fixed set of elements in a java array.

Advantage / Disadvantage of Arrays:

Advantages:

- * Code Optimization: It makes the code optimized, we can retrieve or sort the data efficiently
- * Random Access: We can get any data located at an index position.

Disadvantages:

Size limit: We can store only the fixed size of elements in the array. It doesn't grow its size at runtime

Types of Arrays

Single Dimensional Array

Multi Dimensional Array

Single Dimensional Array:

Syntax to Declare An array in Java

1. `dataType[] arr;`
2. `dataType [] arr;`
3. `dataType arr[];`

Instantiation of an Array in Java

1. `ArrayRefVar = new dataType[size];`

Heap memory \rightarrow New
`a = new int[5];`

Multi Dimensional Array:

Syntax to Declare Multidimensional Array in Java

1. `dataType[][] arrayRefVar;`
2. `dataType' [][] arrayRefVar;`
3. `dataType arrayRefVar[][];`
4. `dataType []arrayRefVar[];`

Ex: to instantiate Multidimensional Array

1. `int[][] arr = new int[3][3];`