**Topic 3 : Working with Arrays.**

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**Array is a indexed collection of homogeneous data types.**

**It is fixed in size.**

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**The most standard way to declare an array is :**

**int[] i;**

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**Limitations of Array can be overcome by using Collections.**

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**We cannot set the size of the array while declaration.**

**int[5] a; //CE.**

**int[] a;**

**We compulsorily have to set the seize of the array while initialization.**

**int[] a = new int[]; //CE.**

**int[] a = new int[5];**

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**Which of the following are valid?**

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1. **Int[] a,b; //a = 1 , b = 1.**
2. **Int[] a[],b; //a = 2 , b = 1.**
3. **Int[] []a , b; //a = 2 , b = 2.**

**Compiler will not see blank space.**

1. **Int[] []a , []b; //CE.**

**We can use [] before variable only for the first one.**

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**Array construction :**

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**Every array in java is an Object.**

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**Following is the list of implementation classes :**

**(Using variableName. .getClass().getName())**

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**[B 🡪 byte[].**

**[S 🡪 short[].**

**[I 🡪 int[].**

**[[I 🡪 int[][].**

**[L 🡪 long[].**

**[F 🡪 float[].**

**[D 🡪 double[].**

**[C 🡪 char[].**

**[Z 🡪 Boolean[].**

**[L.java.lang.String 🡪 String[].**

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**Important rules :**

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1. **Int[] x = new int[];**

**We have to allocate space at the time of initialization itself.**

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1. **Int[] x = new int[0];**

**Compiles and even runs fine. We just can’t add any elements to it. For example in the main, the length of args is 0.**

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1. **Int[] x = new int[-3];**

**Compiles fine as it follows the syntax. But it will give an error , negative array index on runtime.**

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1. **Int[] x = new int[2147364847];**

**Compiles fine but will most likely get an error while running (MemoryOutOfBond). That will be a system problem not a java problem.**

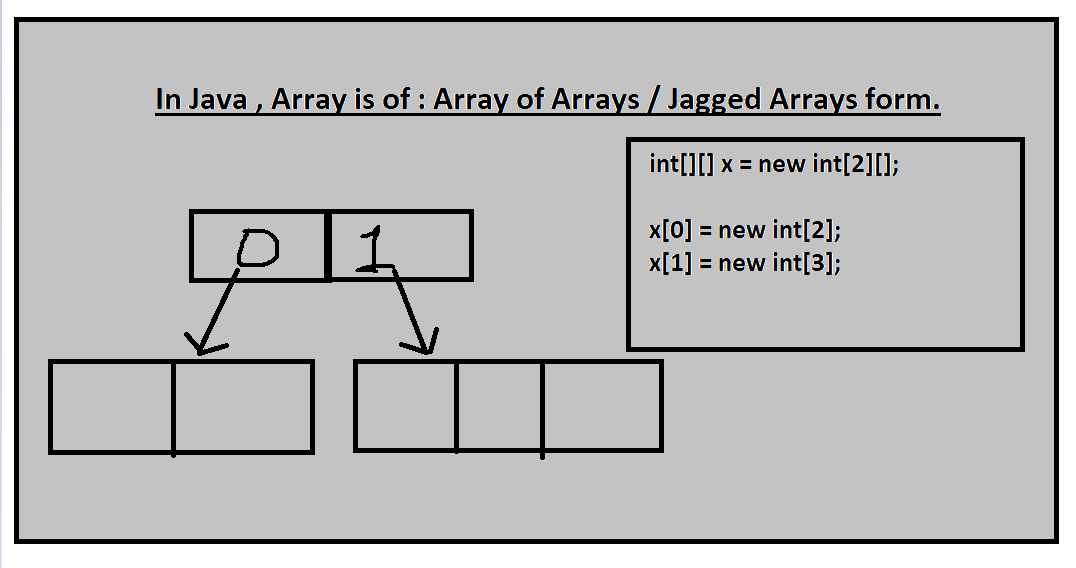
1. **Int[] x = new int[‘a’];**

**We can use byte short char int instead of int as they’ll just implicitly convert into int by the compiler.**

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**Multi dimensional Array :**

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