

Java Arrays – Notes Structure (Topics Only)

1. **Array Introduction**
2. **Definition of Array**
3. **Need of Array (Why Arrays?)**
4. **Array Declaration**
5. **Array Initialization**
6. **Types of Array**
 - Single Dimensional Array (1D)
 - Multi Dimensional Array (2D, 3D, ...)
 - Jagged Array
7. **Array Memory Representation**
8. **Default Values in Array**
9. **Accessing Array Elements**
10. **Traversing Array (Using for, for-each, while loops)**
11. **Array Input from User**
12. **Length Property in Array**
13. **Array Index & Out of Bound Exception**
14. **Operations on Array**
 - Insertion
 - Deletion
 - Searching
 - Sorting
 - Updating
15. **Common Algorithms using Arrays**
 - Linear Search
 - Binary Search
 - Bubble Sort
 - Selection Sort
 - Insertion Sort
16. **Array with Methods (Passing Array to Methods)**
17. **Returning Array from Method**

18. Anonymous Arrays

19. Copying Arrays

- Manual Copy
- System.arraycopy()
- Arrays.copyOf()
- clone()

20. Utility Class – java.util.Arrays

- sort()
- fill()
- equals()
- toString()
- binarySearch()

21. For-each Loop with Array

22. Multidimensional Array Operations

- Traversal
- Input & Output

23. Jagged Array Concept & Example

24. Array vs ArrayList (Difference)

25. Advantages of Arrays

26. Limitations of Arrays

27. Real-life Examples of Arrays in Java