

Java Libraries and Built-in Methods for DSA

Java Libraries

List of Commonly Used Java Libraries for DSA

1. `java.util.Arrays`
2. `java.lang.String`
3. `java.lang.StringBuilder` / `java.lang.StringBuffer`
4. `java.util.ArrayList`
5. `java.util.HashSet` / `java.util.TreeSet`
6. `java.util.HashMap` / `java.util.TreeMap`
7. `java.util.Queue` / `java.util.Deque` / `java.util.Stack`
8. `java.util.Collections`
9. `java.lang.Math`

`java.util.Arrays`

- `sort(arr)` - Sort the array
- `toString(arr)` - Convert array to string
- `equals(arr1, arr2)` - Compare arrays
- `copyOf(arr, newLength)` - Resize array
- `copyOfRange(arr, start, end)` - Copy range
- `fill(arr, value)` - Fill with value
- `binarySearch(arr, val)` - Search in sorted array
- `asList(arr)` - Convert array to list
- `stream(arr)` - Stream for processing

`java.lang.String`

- `length()`, `charAt(i)`, `substring()`, `equals()`, `equalsIgnoreCase()`
- `contains()`, `startsWith()`, `endsWith()`, `indexOf()`, `lastIndexOf()`
- `toCharArray()`, `split()`, `replace()`, `trim()`, `toLowerCase()`, `toUpperCase()`, `concat()`

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- `valueOf(x)` - Convert to String

java.lang.StringBuilder / StringBuffer

- `append(val)`, `insert(pos, val)`, `delete(start, end)`, `deleteCharAt(index)`
- `reverse()`, `toString()`, `setCharAt(index, ch)`

java.util.ArrayList

- `add()`, `add(index, val)`, `get(index)`, `set(index, val)`, `remove(index)`, `remove(val)`
- `contains()`, `indexOf(val)`, `size()`, `isEmpty()`, `clear()`, `toArray()`

java.util.HashSet / TreeSet

- `add(val)`, `contains(val)`, `remove(val)`, `size()`, `clear()`, `isEmpty()`, `iterator()`
- `TreeSet`: `first()`, `last()`

java.util.HashMap / TreeMap

- `put(key, val)`, `get(key)`, `containsKey()`, `containsValue()`, `remove(key)`
- `keySet()`, `values()`, `entrySet()`, `size()`

java.util.Queue / Deque / Stack

- `offer(val)`, `add(val)`, `poll()`, `remove()`, `peek()`, `push(val)`, `pop()`, `isEmpty()`

java.util.Collections

- `sort(list)`, `reverse(list)`, `max(list)`, `min(list)`, `frequency(list, val)`
- `swap(list, i, j)`, `shuffle(list)`

java.lang.Math

- `max(a, b)`, `min(a, b)`, `pow(x, y)`, `sqrt(x)`, `abs(x)`, `random()`

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- `round(x)`, `ceil(x)`, `floor(x)`