# [Collection Interface](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)

Used to pass collections around and manipulate them where maximum generality is desired.

|  |  |
| --- | --- |
| Type | Method and Description |
| boolean | [add](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#add-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html) e)  add element if needed |
| boolean | [addAll](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#addAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<? extends [E](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)> c)  Adds all elements in collection |
| void | [clear](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#clear--)()  Removes all of the elements |
| boolean | [contains](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#contains-java.lang.Object-)([Object](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) o)  if this collection contains the element o. |
| boolean | [containsAll](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#containsAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<?> coll)  if contains all of the elements in coll |
| boolean | [isEmpty](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#isEmpty--)()  if this collection contains no elements. |
| [Iterator](https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html) <[E](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)> | [iterator](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#iterator--)()  iterator for elements |
| boolean | [remove](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) o)  Removes single instance of the element |
| boolean | [removeAll](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#removeAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<?> collect)  Removes all elements in collection |
| default boolean | [removeIf](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#removeIf-java.util.function.Predicate-)([Predicate](https://docs.oracle.com/javase/8/docs/api/java/util/function/Predicate.html)<? super [E](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)> filter)  Remove elements that match the predicate |
| boolean | [retainAll](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#retainAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<?> c)  Retains elements contained in collection. |
| int | [size](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#size--)()  Returns the number of elements |
| default [Stream](https://docs.oracle.com/javase/8/docs/api/java/util/stream/Stream.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)> | [stream](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#stream--)()  Stream for this collection |
| [Object](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html)[] | [toArray](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#toArray--)()  array containing the collection elements |
| <T> T[] | [toArray](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html#toArray-T:A-)(T[] a)  array of elements in collection; runtime type of returned array is type of specified array |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Collection | Dups | Null | Index | FIFO | LIFO | <K, V> |
| Collection | X | X |  |  |  |  |
| Sets |  | Yes, 1 |  |  |  |  |
| Lists | X | Yes, >= 1 | X |  |  |  |
| Queue | X | Yes, don’t |  | X |  |  |
| Deque | X | Yes, don’t |  | X | X |  |
| Map |  | X |  |  |  | X |

# [Collection Class](https://docs.oracle.com/javase/8/docs/api/java/util/Collections.html)

This class consists exclusively of **static** methods that operate on or return collections.

|  |  |
| --- | --- |
| Type | Method and Description |
| <T> **Queue**<T> | **asLifoQueue**(**Deque**<T> deque)  a view of a [**Deque**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) as a Lifo [**Queue**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html). |
| <T>**Enumeration**<T> | **emptyEnumeration**,**Iterator**, **List**,**ListIterator**, **Map**,**Set**  Returns a\_\_\_ with no elements |
| <T>**Enumeration**<T> | **enumeration**(**Collection**<T> c)  an enumeration over the collection |
| <T> void | **fill**([**List**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)<? super T> list, T obj)  Replaces elements of list with object |
| int | **frequency**(**Collection**<?> c, **Object** o)  # of elements equal to object. |
| int | **indexOfSubList**(**List**<?> source, **List**<?> target)  position of 1st occurrence of target list within source list, or -1 if no occurrence |
| int | **lastIndexOfSubList**(**List**<?> source, **List**<?> target)  last occurrence of target list in source, or -1 |
| <T> T | **max**([**Collection**](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<? extends T> coll)  maximum element |
| <T> T | **min**(**Collection**<? extends T> coll)  Returns the minimum elemen. |
| <T> **List**<T> | **nCopies**(int n, T o)  immutable list of n copies of the object. |
| <E> **Set**<E> | **newSetFromMap**(**Map**<E,[**Boolean**](https://docs.oracle.com/javase/8/docs/api/java/lang/Boolean.html)> map)  set backed by the specified map |
| <T> boolean | **replaceAll**(**List**<T> list, T oldVal, T newVal)  Replaces occurrences of oldValue with new |
| void | **reverse**(**List**<?> list)  Reverses order of elements in list. |
| void | **rotate**(**List**<?> list, int distance)  Rotates elements in list by distance |
| void | **shuffle**(**List**<?> list)  Randomly permutes the specified list |
| <T extends **Comparable**<? super T>>void | **sort**(**List**<T> list)  Sorts list into ascending order |
| static <T> void | **sort**(**List**<T> list, **Comparator**<? super T> c)  Sorts list by order from comparator |
| void | **swap**(**List**<?> list, int i, int j)  Swaps elements at the positions in list. |

# [Set Interface](https://docs.oracle.com/javase/8/docs/api/java/util/Set.html)

Collection that contains no duplicates and at most one null element. The Set only has Collection methods.

**Union**: setOne.addAll(setTwo);

**Intersect**: setOne.retainAll(setTwo);

**Exclude**: setOne.removeAll(setTwo)

# [List Interface](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)

An ordered collection. Has precise control over where an element is inserted, accessed and searched.

Lists allows duplicate elements including null elements

|  |  |
| --- | --- |
| Type | Method and Description |
| void | **add**(int index, [**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html) element)  Inserts element at index |
| boolean | **addAll**(int index, [**Collection**](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<? extends [**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)> c)  Insert elements at index |
| [**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html) | [**get**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#get-int-)(int index)  element at index |
| int | [**indexOf**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#indexOf-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) o)  index of 1st matched element, -1 if not found |
| int | [**lastIndexOf**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#lastIndexOf-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) o)  index of last matched element, -1 if not found |
| [**ListIterator**](https://docs.oracle.com/javase/8/docs/api/java/util/ListIterator.html)<[**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)> | [**listIterator**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#listIterator--)()  list iterator over elements |
| [**ListIterator**](https://docs.oracle.com/javase/8/docs/api/java/util/ListIterator.html)<[**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)> | [**listIterator**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#listIterator-int-)(int index)  list iterator over elements starting at index |
| [**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html) | [**remove**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#remove-int-)(int index)  Removes element at index |
| default void | [**replaceAll**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#replaceAll-java.util.function.UnaryOperator-)(**[UnaryOperator](https://docs.oracle.com/javase/8/docs/api/java/util/function/UnaryOperator.html" \o "interface in java.util.function)**<[**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)> operator)  Replaces each element with result of applying operator to element. |
| boolean | [**retainAll**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#retainAll-java.util.Collection-)([**Collection**](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<?> c)  Retains only elements contained in collection |
| [**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html) | [**set**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#set-int-E-)(int index, [**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html) element)  Replaces element at index with element. |
| default void | [**sort**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#sort-java.util.Comparator-)([**Comparator**](https://docs.oracle.com/javase/8/docs/api/java/util/Comparator.html)<? super [**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)> c)  Sorts by order induced by [**Comparator**](https://docs.oracle.com/javase/8/docs/api/java/util/Comparator.html). |
| [**List**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)<[**E**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)> | [**subList**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html#subList-int-int-)(int fromIndex, int toIndex)  list between (from: include and to] exclude |

# [Queue](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html)

Holds elements prior to processing. Adds insertion, extraction, and inspection methods. Two forms: throws exception on failure, or returns null or false.

|  |  |
| --- | --- |
| Type | Method and Description |
| Boolean | [**add**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html#add-E-)([**E**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html) e)(Throws exception)  Inserts the specified element into this queue. |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html) | [**element**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html#element--)()(Throws exception)  Retrieves, but does not remove, the head |
| Boolean | [**offer**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html#offer-E-)([**E**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html) e)(Returns special value)  Inserts the specified element into this queue. |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html) | [**peek**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html#peek--)()(Returns special value)  Retrieves does not remove head, null if empty |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html) | [**poll**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html#poll--)()(Returns special value)  Retrieves and removes head, null if empty. |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html) | [**remove**](https://docs.oracle.com/javase/8/docs/api/java/util/Queue.html#remove--)()(Throws exception)  Retrieves and removes the head |

# [Deque](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html)

Double ended queue, (“deck”). Linear collection supports insertion and removal at both ends. Extends Queue

Methods are provided to insert, remove, and examine the element at both ends of the deque. Each methods exists in two forms: one throws an exception on failure, the other returns a special value (either nullor false).

|  |  |
| --- | --- |
| Type | Method and Description |
| void | [**addFirst**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#addFirst-E-)**/**Last([**E**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) e)  Inserts the specified element at front/end |
| [Iterator](https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html)> | [**descendingIterator**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#descendingIterator--)()  iterator over elements in reverse order |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) | [**getFirst**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#getFirst--)**/**Last()  Retrieve don't remove 1st/last element |
| boolean | [**offer**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#offer-E-)([**E**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) e)  Inserts the specified element at the tail |
| boolean | [**offerFirst**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#offerFirst-E-)**/**Last([**E**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) e)  Inserts the specified element at front/end |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) | [**peekFirst**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#peekFirst--)**/**Last()  Gets, does not remove, 1st/last element, null if empty. |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) | [**pollFirst**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#pollFirst--)**/**Last()  Gets and removes 1st/last element, null if empty |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) | [**pop**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#pop--)()  Pops 1st element from the stack |
| void | [**push**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#push-E-)([**E**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) e)  Pushes element onto stack at the head. |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html) | [**removeFirst**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#removeFirst--)**/**Last()  Retrieve and remove first/last element. |
| boolean | [**removeFirstOccurrence**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#removeFirstOccurrence-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) o)  Removes 1st occurrence of element. |
| boolean | [**removeLastOccurrence**](https://docs.oracle.com/javase/8/docs/api/java/util/Deque.html#removeLastOccurrence-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) o)  Removes last occurrence of element. |

# [Map](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html)

An object that maps keys to values. A map cannot contain duplicate keys; each key can map to at most one value.

The Map interface provides three *collection views*, which allow a map's contents to be viewed as a set of keys, collection of values, or set of key-value mappings.

|  |  |
| --- | --- |
| Modifier and Type | Method and Description |
| boolean | [**containsKey**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#containsKey-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) key)  true if map contains key. |
| boolean | [**containsValue**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#containsValue-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) value)  true if map maps 1+ keys to value. |
| [**Set**](https://docs.oracle.com/javase/8/docs/api/java/util/Set.html)<**[Map.Entry](https://docs.oracle.com/javase/8/docs/api/java/util/Map.Entry.html" \o "interface in java.util)**<[**K**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html),[**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html)>> | [**entrySet**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#entrySet--)()  a [**Set**](https://docs.oracle.com/javase/8/docs/api/java/util/Set.html) view of mappings in this map. |
| default void | [**forEach**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#forEach-java.util.function.BiConsumer-)(**[BiConsumer](https://docs.oracle.com/javase/8/docs/api/java/util/function/BiConsumer.html" \o "interface in java.util.function)**<? super [**K**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html),? super [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html)> action)  Performs action for each entry in map |
| [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) | [**get**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#get-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) key)  value of key null if no mapping |
| default [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) | [**getOrDefault**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#getOrDefault-java.lang.Object-V-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) key, [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) defaultValue)  value of key if mapped, defaultValue if no mapping |
| [**Set**](https://docs.oracle.com/javase/8/docs/api/java/util/Set.html)<[**K**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html)> | [**keySet**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#keySet--)()  [**Set**](https://docs.oracle.com/javase/8/docs/api/java/util/Set.html) view of keys in map |
| [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) | [**put**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#put-K-V-)([**K**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) key, [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) value)  Associates the value with key |
| default [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) | [**putIfAbsent**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#putIfAbsent-K-V-)([**K**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) key, [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) value)  If key is not mapped associate it with value and return null, else return current value. |
| [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) | [**remove**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#remove-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) key)  Removes mapping for key from map |
| default boolean | [**remove**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#remove-java.lang.Object-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) key, [**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) value)  Removes entry for key only if is mapped to value. |
| default [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) | [**replace**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#replace-K-V-)([**K**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) key, [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) value)  Replaces entry for key only if it is mapped to some value. |
| default boolean | [**replace**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#replace-K-V-V-)([**K**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) key, [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) oldValue, [**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) newValue)  Replaces entry for key if currently mapped to oldValue. |
| [**Collection**](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html)<[**V**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html)> | [**values**](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html#values--)()  a [**Collection**](https://docs.oracle.com/javase/8/docs/api/java/util/Collection.html) view of values in map |

# Array methods

|  |  |
| --- | --- |
| Type | Method and Description (all statics) |
| <T>[**List**](https://docs.oracle.com/javase/8/docs/api/java/util/List.html)<T> | [**asList**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#asList-T...-)(T... a)  fixed-size list backed by <Type> array |
| int | [**binarySearch**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#binarySearch-long:A-int-int-long-)(<T>[] a, int from, int to, <T> key)  Searches range of array for value |
| int | [**binarySearch**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#binarySearch-long:A-long-)(<T> [] a, <T> key)  Searches for value |
| <T> T[] | [**copyOf**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#copyOf-T:A-int-)(T[] original, int newLength)  Copies array, truncatw or pad with nulls |
| <T,U> T[] | [**copyOf**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#copyOf-U:A-int-java.lang.Class-)(U[] original, int newLength, [**Class**](https://docs.oracle.com/javase/8/docs/api/java/lang/Class.html)<? extends T[]> newType)  Copies array, truncate or pad with nulls |
| <T> T[] | [**copyOfRange**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#copyOfRange-T:A-int-int-)(T[] original, int from, int to)  Copies range of array into a new array |
| <T,U> T[] | [**copyOfRange**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#copyOfRange-U:A-int-int-java.lang.Class-)(U[] original, int from, int to, [**Class**](https://docs.oracle.com/javase/8/docs/api/java/lang/Class.html)<? extends T[]> newType)  Copies range of array into a new array. |
| void | [**fill**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#fill-java.lang.Object:A-int-int-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html)[] a, int fromIndex, int toIndex, [**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) val)  Assigns Object reference to each element of range of array of Objects. |
| void | [**fill**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#fill-java.lang.Object:A-java.lang.Object-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html)[] a, [**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html) val)  Assigns Object reference to each element of array of Objects. |
| <T> void | [**setAll**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#setAll-T:A-java.util.function.IntFunction-)(T[]array, [**IntFunction**](https://docs.oracle.com/javase/8/docs/api/java/util/function/IntFunction.html)<? extends T> generator)  Set all elements of array, using generator to compute each element. |
| <T> void | [**sort**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#sort-T:A-java.util.Comparator-)(T[] a, [**Comparator**](https://docs.oracle.com/javase/8/docs/api/java/util/Comparator.html)<? super T> c)  Sorts objects according to the order induced by comparator. |
| <T> void | [**sort**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#sort-T:A-int-int-java.util.Comparator-)(T[] a, int from, int to,  [**Comparator**](https://docs.oracle.com/javase/8/docs/api/java/util/Comparator.html)<? super T> **c**)  Sorts range of objects by comparator. |
| <T> [**Stream**](https://docs.oracle.com/javase/8/docs/api/java/util/stream/Stream.html)<T> | [**stream**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#stream-T:A-)(T[] array)  a sequential [**Stream**](https://docs.oracle.com/javase/8/docs/api/java/util/stream/Stream.html) with array as source. |
| <T> [**Stream**](https://docs.oracle.com/javase/8/docs/api/java/util/stream/Stream.html)<T> | [**stream**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#stream-T:A-int-int-)(T[] array,int startIncl, int endExcl)  a sequential [**Stream**](https://docs.oracle.com/javase/8/docs/api/java/util/stream/Stream.html) with range as source. |
| [**String**](https://docs.oracle.com/javase/8/docs/api/java/lang/String.html) | [**toString**](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html#toString-java.lang.Object:A-)([**Object**](https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html)[] a)  string of the contents of array. |



# Collection Examples

* Is mapOne a Superset mapTwo:  
  mapOne.entrySet().containsAll( mapTwo.entrySet() );
* Find missing required attributes:  
  Set<K> missing = new HashSet<K> (requiredAttrs);  
  missing.removeAll (attrs);
* Find attributes not permitted  
  Set<K> illegal = new HashSet<K> (attrs);  
  illegal.removeAll (permittedAttrs);
* Keys in common between the attrs map and the permittedAttrs  
  Set<KeyType>commonKeys = new HashSet<KeyType> (attrs.keySet ());  
  commonKeys.retainAll (permitted.keySet ());