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org.apache.commons.collections4.bag

## Class AbstractMapBag<E>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + org.apache.commons.collections4.bag.AbstractMapBag<E>
* Type Parameters: E - the type of elements in this bag All Implemented Interfaces: [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<E>, [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<E>, [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> Direct Known Subclasses: [HashBag](http://docs.google.com/org/apache/commons/collections4/bag/HashBag.html), [TreeBag](http://docs.google.com/org/apache/commons/collections4/bag/TreeBag.html)  
    
  public abstract class AbstractMapBag<E>  
  extends [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)  
  implements [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E>  
  Abstract implementation of the [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html) interface to simplify the creation of subclass implementations.  
  Subclasses specify a Map implementation to use as the internal storage. The map will be used to map bag elements to a number; the number represents the number of occurrences of that element in the bag.Since: 3.0 (previously DefaultMapBag v2.0)

### Nested Class SummaryNested Classes

|  |  |
| --- | --- |
| * + Modifier and Type | * + Class and Description |
| * + protected static class | * + [AbstractMapBag.MutableInteger](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.MutableInteger.html) Mutable integer class for storing the data. |

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [AbstractMapBag](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#AbstractMapBag--)() Constructor needed for subclass serialisation. |
| * + protected | * + [AbstractMapBag](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#AbstractMapBag-java.util.Map-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html),[AbstractMapBag.MutableInteger](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.MutableInteger.html)> map) Constructor that assigns the specified Map as the backing store. |

### Method SummaryAll Methods Instance Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#add-E-)([E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html) object) Adds a new element to the bag, incrementing its count in the underlying map. |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#add-E-int-)([E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html) object, int nCopies) Adds a new element to the bag, incrementing its count in the map. |
| * + boolean | * + [addAll](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#addAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> coll) Invokes [add(Object)](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#add-E-) for each element in the given collection. |
| * + void | * + [clear](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#clear--)() Clears the bag by clearing the underlying map. |
| * + boolean | * + [contains](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#contains-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Determines if the bag contains the given element by checking if the underlying map contains the element as a key. |
| * + boolean | * + [containsAll](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#containsAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Determines if the bag contains the given elements. |
| * + protected void | * + [doReadObject](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#doReadObject-java.util.Map-java.io.ObjectInputStream-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html),[AbstractMapBag.MutableInteger](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.MutableInteger.html)> map, [ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) Read the map in using a custom routine. |
| * + protected void | * + [doWriteObject](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#doWriteObject-java.io.ObjectOutputStream-)([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) Write the map out using a custom routine. |
| * + boolean | * + [equals](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#equals-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Compares this Bag to another. |
| * + int | * + [getCount](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#getCount-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Returns the number of occurrence of the given element in this bag by looking up its count in the underlying map. |
| * + protected [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html),[AbstractMapBag.MutableInteger](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.MutableInteger.html)> | * + [getMap](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#getMap--)() Utility method for implementations to access the map that backs this bag. |
| * + int | * + [hashCode](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#hashCode--)() Gets a hash code for the Bag compatible with the definition of equals. |
| * + boolean | * + [isEmpty](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#isEmpty--)() Returns true if the underlying map is empty. |
| * + [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> | * + [iterator](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#iterator--)() Gets an iterator over the bag elements. |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Removes all copies of the specified object from the bag. |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#remove-java.lang.Object-int-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object, int nCopies) Removes a specified number of copies of an object from the bag. |
| * + boolean | * + [removeAll](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#removeAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Removes objects from the bag according to their count in the specified collection. |
| * + boolean | * + [retainAll](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#retainAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Remove any members of the bag that are not in the given bag, respecting cardinality. |
| * + int | * + [size](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#size--)() Returns the number of elements in this bag. |
| * + [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] | * + [toArray](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#toArray--)() Returns an array of all of this bag's elements. |
| * + <T> T[] | * + [toArray](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#toArray-T:A-)(T[] array) Returns an array of all of this bag's elements. |
| * + [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) | * + [toString](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#toString--)() Implement a toString() method suitable for debugging. |
| * + [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> | * + [uniqueSet](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#uniqueSet--)() Returns an unmodifiable view of the underlying map's key set. |

### Methods inherited from class java.lang.[**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[clone](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#clone--), [finalize](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#finalize--), [getClass](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#getClass--), [notify](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notify--), [notifyAll](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notifyAll--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-int-)

### Methods inherited from interface java.util.[**Collection**](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)[parallelStream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#parallelStream--), [removeIf](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeIf-java.util.function.Predicate-), [spliterator](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#spliterator--), [stream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#stream--)

### Methods inherited from interface java.lang.[**Iterable**](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)[forEach](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true#forEach-java.util.function.Consumer-)

### Constructor Detail

#### AbstractMapBag protected AbstractMapBag() Constructor needed for subclass serialisation.

#### AbstractMapBag protected AbstractMapBag([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html),[AbstractMapBag.MutableInteger](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.MutableInteger.html)> map) Constructor that assigns the specified Map as the backing store. The map must be empty and non-null.Parameters: map - the map to assign

### Method Detail

#### getMap protected [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html),[AbstractMapBag.MutableInteger](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.MutableInteger.html)> getMap() Utility method for implementations to access the map that backs this bag. Not intended for interactive use outside of subclasses.Returns: the map being used by the Bag

#### size public int size() Returns the number of elements in this bag.Specified by: [size](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#size--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [size](http://docs.google.com/org/apache/commons/collections4/Bag.html#size--) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Returns: current size of the bag

#### isEmpty public boolean isEmpty() Returns true if the underlying map is empty.Specified by: [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#isEmpty--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Returns: true if bag is empty

#### getCount public int getCount([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Returns the number of occurrence of the given element in this bag by looking up its count in the underlying map.Specified by: [getCount](http://docs.google.com/org/apache/commons/collections4/Bag.html#getCount-java.lang.Object-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: object - the object to search for Returns: the number of occurrences of the object, zero if not found

#### contains public boolean contains([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Determines if the bag contains the given element by checking if the underlying map contains the element as a key.Specified by: [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#contains-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: object - the object to search for Returns: true if the bag contains the given element

#### containsAll public boolean containsAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Determines if the bag contains the given elements.Specified by: [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#containsAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [containsAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#containsAll-java.util.Collection-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: coll - the collection to check against Returns: true if the Bag contains all the collection

#### iterator public [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> iterator() Gets an iterator over the bag elements. Elements present in the Bag more than once will be returned repeatedly.Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true#iterator--) in interface [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#iterator--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [iterator](http://docs.google.com/org/apache/commons/collections4/Bag.html#iterator--) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Returns: the iterator

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html) object) Adds a new element to the bag, incrementing its count in the underlying map.Specified by: [add](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#add-E-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [add](http://docs.google.com/org/apache/commons/collections4/Bag.html#add-E-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: object - the object to add Returns: true if the object was not already in the uniqueSet

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html) object, int nCopies) Adds a new element to the bag, incrementing its count in the map.Specified by: [add](http://docs.google.com/org/apache/commons/collections4/Bag.html#add-E-int-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: object - the object to search for nCopies - the number of copies to add Returns: true if the object was not already in the uniqueSet

#### addAll public boolean addAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> coll) Invokes [add(Object)](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html#add-E-) for each element in the given collection.Specified by: [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#addAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: coll - the collection to add Returns: true if this call changed the bag

#### clear public void clear() Clears the bag by clearing the underlying map.Specified by: [clear](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#clear--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)>

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Removes all copies of the specified object from the bag.Specified by: [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#remove-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [remove](http://docs.google.com/org/apache/commons/collections4/Bag.html#remove-java.lang.Object-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: object - the object to remove Returns: true if the bag changed

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object, int nCopies) Removes a specified number of copies of an object from the bag.Specified by: [remove](http://docs.google.com/org/apache/commons/collections4/Bag.html#remove-java.lang.Object-int-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: object - the object to remove nCopies - the number of copies to remove Returns: true if the bag changed

#### removeAll public boolean removeAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Removes objects from the bag according to their count in the specified collection.Specified by: [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [removeAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#removeAll-java.util.Collection-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: coll - the collection to use Returns: true if the bag changed

#### retainAll public boolean retainAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Remove any members of the bag that are not in the given bag, respecting cardinality.Specified by: [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#retainAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Specified by: [retainAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#retainAll-java.util.Collection-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Parameters: coll - the collection to retain Returns: true if this call changed the collection

#### toArray public [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] toArray() Returns an array of all of this bag's elements.Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Returns: an array of all of this bag's elements

#### toArray public <T> T[] toArray(T[] array) Returns an array of all of this bag's elements. If the input array has more elements than are in the bag, trailing elements will be set to null.Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray-T:A-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Type Parameters: T - the type of the array elements Parameters: array - the array to populate Returns: an array of all of this bag's elements Throws: [ArrayStoreException](https://docs.oracle.com/javase/7/docs/api/java/lang/ArrayStoreException.html?is-external=true) - if the runtime type of the specified array is not a supertype of the runtime type of the elements in this list [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the specified array is null

#### uniqueSet public [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> uniqueSet() Returns an unmodifiable view of the underlying map's key set.Specified by: [uniqueSet](http://docs.google.com/org/apache/commons/collections4/Bag.html#uniqueSet--) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Returns: the set of unique elements in this bag

#### doWriteObject protected void doWriteObject([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) Write the map out using a custom routine.Parameters: out - the output stream Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - any of the usual I/O related exceptions

#### doReadObject protected void doReadObject([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html),[AbstractMapBag.MutableInteger](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.MutableInteger.html)> map, [ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) throws [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true), [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) Read the map in using a custom routine.Parameters: map - the map to use in - the input stream Throws: [IOException](https://docs.oracle.com/javase/7/docs/api/java/io/IOException.html?is-external=true) - any of the usual I/O related exceptions [ClassNotFoundException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassNotFoundException.html?is-external=true) - if the stream contains an object which class can not be loaded [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the stream does not contain the correct objects

#### equals public boolean equals([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Compares this Bag to another. This Bag equals another Bag if it contains the same number of occurrences of the same elements.Specified by: [equals](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#equals-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Overrides: [equals](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#equals-java.lang.Object-) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) Parameters: object - the Bag to compare to Returns: true if equal

#### hashCode public int hashCode() Gets a hash code for the Bag compatible with the definition of equals. The hash code is defined as the sum total of a hash code for each element. The per element hash code is defined as (e==null ? 0 : e.hashCode()) ^ noOccurances). This hash code is compatible with the Set interface.Specified by: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#hashCode--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/AbstractMapBag.html)> Overrides: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#hashCode--) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) Returns: the hash code of the Bag

#### toString public [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) toString() Implement a toString() method suitable for debugging.Overrides: [toString](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#toString--) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) Returns: a debugging toString

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