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org.apache.commons.collections4.multiset

## Class AbstractMultiSet<E>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + [java.util.AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<E>
    - org.apache.commons.collections4.multiset.AbstractMultiSet<E>
* Type Parameters: E - the type held in the multiset 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>, [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<E> Direct Known Subclasses: [AbstractMapMultiSet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMapMultiSet.html)  
    
  public abstract class AbstractMultiSet<E>  
  extends [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<E>  
  implements [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<E>  
  Abstract implementation of the [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html) interface to simplify the creation of subclass implementations.Since: 4.1

### Nested Class SummaryNested Classes

|  |  |
| --- | --- |
| * + Modifier and Type | * + Class and Description |
| * + protected static class | * + [AbstractMultiSet.AbstractEntry](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.AbstractEntry.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.AbstractEntry.html)> Inner class AbstractEntry. |
| * + protected static class | * + [AbstractMultiSet.EntrySet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.EntrySet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.EntrySet.html)> Inner class EntrySet. |
| * + protected static class | * + [AbstractMultiSet.UniqueSet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.UniqueSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.UniqueSet.html)> Inner class UniqueSet. |

### Nested classes/interfaces inherited from interface org.apache.commons.collections4.[**MultiSet**](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)[MultiSet.Entry](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)<[E](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)>

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [AbstractMultiSet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#AbstractMultiSet--)() Constructor needed for subclass serialisation. |

### Method SummaryAll Methods Instance Methods Abstract Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#add-E-)([E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html) object) Adds one copy of the specified object to the MultiSet. |
| * + int | * + [add](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#add-E-int-)([E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html) object, int occurrences) Adds a number of occurrences of the specified object to the MultiSet. |
| * + void | * + [clear](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#clear--)() Clears the multiset removing all elements from the entrySet. |
| * + boolean | * + [contains](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.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 multiset contains the given element. |
| * + protected [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[MultiSet.Entry](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)>> | * + [createEntrySet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#createEntrySet--)() Create a new view for the set of entries in this multiset. |
| * + protected abstract [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[MultiSet.Entry](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)>> | * + [createEntrySetIterator](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#createEntrySetIterator--)() Creates an entry set iterator. |
| * + protected [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/multiset/AbstractMultiSet.html)> | * + [createUniqueSet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#createUniqueSet--)() Create a new view for the set of unique elements in this multiset. |
| * + protected [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/multiset/AbstractMultiSet.html)> | * + [createUniqueSetIterator](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#createUniqueSetIterator--)() Creates a unique set iterator. |
| * + protected void | * + [doReadObject](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#doReadObject-java.io.ObjectInputStream-)([ObjectInputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectInputStream.html?is-external=true) in) Read the multiset in using a custom routine. |
| * + protected void | * + [doWriteObject](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#doWriteObject-java.io.ObjectOutputStream-)([ObjectOutputStream](https://docs.oracle.com/javase/7/docs/api/java/io/ObjectOutputStream.html?is-external=true) out) Write the multiset out using a custom routine. |
| * + [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[MultiSet.Entry](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)>> | * + [entrySet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#entrySet--)() Returns an unmodifiable view of the entries of this multiset. |
| * + boolean | * + [equals](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#equals-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Compares this MultiSet to another object. |
| * + int | * + [getCount](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.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 multiset by iterating over its entrySet. |
| * + int | * + [hashCode](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#hashCode--)() Gets a hash code for the MultiSet compatible with the definition of equals. |
| * + [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/multiset/AbstractMultiSet.html)> | * + [iterator](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#iterator--)() Gets an iterator over the multiset elements. |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Removes one occurrence of the given object from the MultiSet. |
| * + int | * + [remove](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#remove-java.lang.Object-int-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object, int occurrences) Removes a number of occurrences of the specified object from the MultiSet. |
| * + boolean | * + [removeAll](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#removeAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Remove all occurrences of all elements from this MultiSet represented in the given collection. |
| * + int | * + [setCount](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#setCount-E-int-)([E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html) object, int count) Sets the number of occurrences of the specified object in the MultiSet to the given count. |
| * + int | * + [size](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#size--)() Returns the number of elements in this multiset. |
| * + [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/multiset/AbstractMultiSet.html#toString--)() Implement a toString() method suitable for debugging. |
| * + protected abstract int | * + [uniqueElements](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#uniqueElements--)() Returns the number of unique elements in this multiset. |
| * + [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/multiset/AbstractMultiSet.html)> | * + [uniqueSet](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html#uniqueSet--)() Returns a view of the unique elements of this multiset. |

### Methods inherited from class java.util.[**AbstractCollection**](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)[addAll](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#addAll-java.util.Collection-), [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#containsAll-java.util.Collection-), [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#isEmpty--), [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#retainAll-java.util.Collection-), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#toArray--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#toArray-T:A-)

### 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 org.apache.commons.collections4.[**MultiSet**](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)[containsAll](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#containsAll-java.util.Collection-), [retainAll](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#retainAll-java.util.Collection-)

### Methods inherited from interface java.util.[**Collection**](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)[addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#addAll-java.util.Collection-), [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#isEmpty--), [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--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray-T:A-)

### 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

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

### Method Detail

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

#### 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 multiset by iterating over its entrySet.Specified by: [getCount](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#getCount-java.lang.Object-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: object - the object to search for Returns: the number of occurrences of the object, zero if not found

#### setCount public int setCount([E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html) object, int count) Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#setCount-E-int-) Sets the number of occurrences of the specified object in the MultiSet to the given count. If the provided count is zero, the object will be removed from the [MultiSet.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#uniqueSet--).Specified by: [setCount](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#setCount-E-int-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: object - the object to update count - the number of occurrences of the object Returns: the number of occurrences of the object before this operation, zero if the object was not contained in the multiset

#### contains public boolean contains([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Determines if the multiset contains the given element.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/multiset/AbstractMultiSet.html)> Overrides: [contains](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#contains-java.lang.Object-) in class [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: object - the object to search for Returns: true if the multiset contains the given element

#### 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/multiset/AbstractMultiSet.html)> iterator() Gets an iterator over the multiset elements. Elements present in the MultiSet 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/multiset/AbstractMultiSet.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/multiset/AbstractMultiSet.html)> Specified by: [iterator](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#iterator--) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#iterator--) in class [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Returns: the iterator

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html) object) Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#add-E-) Adds one copy of the specified object to the MultiSet. If the object is already in the [MultiSet.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#uniqueSet--) then increment its count as reported by [MultiSet.getCount(Object)](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#getCount-java.lang.Object-). Otherwise add it to the [MultiSet.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#uniqueSet--) and report its count as 1.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/multiset/AbstractMultiSet.html)> Specified by: [add](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#add-E-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Overrides: [add](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#add-E-) in class [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: object - the object to add Returns: true always, as the size of the MultiSet is increased in any case

#### add public int add([E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html) object, int occurrences) Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#add-E-int-) Adds a number of occurrences of the specified object to the MultiSet. If the object is already in the [MultiSet.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#uniqueSet--) then increment its count as reported by [MultiSet.getCount(Object)](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#getCount-java.lang.Object-). Otherwise add it to the [MultiSet.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#uniqueSet--) and report its count as occurrences.Specified by: [add](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#add-E-int-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: object - the object to add occurrences - the number of occurrences to add, may be zero, in which case no change is made to the multiset Returns: the number of occurrences of the object in the multiset before this operation; possibly zero

#### clear public void clear() Clears the multiset removing all elements from the entrySet.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/multiset/AbstractMultiSet.html)> Overrides: [clear](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#clear--) in class [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)>

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#remove-java.lang.Object-) Removes one occurrence of the given object from the MultiSet. If the number of occurrences after this operations is reduced to zero, the object will be removed from the [MultiSet.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#uniqueSet--).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/multiset/AbstractMultiSet.html)> Specified by: [remove](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#remove-java.lang.Object-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Overrides: [remove](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#remove-java.lang.Object-) in class [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: object - the object to remove Returns: true if this call changed the collection

#### remove public int remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object, int occurrences) Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#remove-java.lang.Object-int-) Removes a number of occurrences of the specified object from the MultiSet. If the number of occurrences to remove is greater than the actual number of occurrences in the multiset, the object will be removed from the multiset.Specified by: [remove](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#remove-java.lang.Object-int-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: object - the object to remove occurrences - the number of occurrences to remove, may be zero, in which case no change is made to the multiset Returns: the number of occurrences of the object in the multiset before the operation; possibly zero

#### removeAll public boolean removeAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#removeAll-java.util.Collection-) Remove all occurrences of all elements from this MultiSet represented in the given 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/multiset/AbstractMultiSet.html)> Specified by: [removeAll](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#removeAll-java.util.Collection-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Overrides: [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true#removeAll-java.util.Collection-) in class [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Parameters: coll - the collection of elements to remove Returns: true if this call changed the multiset

#### 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/multiset/AbstractMultiSet.html)> uniqueSet() Returns a view of the unique elements of this multiset.Specified by: [uniqueSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#uniqueSet--) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Returns: the set of unique elements in this multiset

#### createUniqueSet protected [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/multiset/AbstractMultiSet.html)> createUniqueSet() Create a new view for the set of unique elements in this multiset.Returns: a view of the set of unique elements

#### createUniqueSetIterator protected [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/multiset/AbstractMultiSet.html)> createUniqueSetIterator() Creates a unique set iterator. Subclasses can override this to return iterators with different properties.Returns: the uniqueSet iterator

#### entrySet public [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[MultiSet.Entry](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)>> entrySet() Returns an unmodifiable view of the entries of this multiset.Specified by: [entrySet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#entrySet--) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Returns: the set of entries in this multiset

#### createEntrySet protected [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[MultiSet.Entry](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)>> createEntrySet() Create a new view for the set of entries in this multiset.Returns: a view of the set of entries

#### uniqueElements protected abstract int uniqueElements() Returns the number of unique elements in this multiset.Returns: the number of unique elements

#### createEntrySetIterator protected abstract [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[MultiSet.Entry](http://docs.google.com/org/apache/commons/collections4/MultiSet.Entry.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)>> createEntrySetIterator() Creates an entry set iterator. Subclasses can override this to return iterators with different properties.Returns: the entrySet iterator

#### 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 multiset 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([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 multiset in using a custom routine.Parameters: 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) Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#equals-java.lang.Object-) Compares this MultiSet to another object. This MultiSet equals another object if it is also a MultiSet that 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/multiset/AbstractMultiSet.html)> Specified by: [equals](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#equals-java.lang.Object-) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.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 object to compare to Returns: true if equal

#### hashCode public int hashCode() Description copied from interface: [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#hashCode--) Gets a hash code for the MultiSet 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).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/multiset/AbstractMultiSet.html)> Specified by: [hashCode](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#hashCode--) in interface [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.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 MultiSet

#### 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/util/AbstractCollection.html?is-external=true#toString--) in class [AbstractCollection](https://docs.oracle.com/javase/7/docs/api/java/util/AbstractCollection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSet.html)> Returns: a debugging toString

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