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org.apache.commons.collections4.multimap

## Class UnmodifiableMultiValuedMap<K,V>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + [org.apache.commons.collections4.multimap.AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<K,V>
    - org.apache.commons.collections4.multimap.UnmodifiableMultiValuedMap<K,V>
* Type Parameters: K - the type of key elements V - the type of value elements All Implemented Interfaces: [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true), [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<K,V>, [Unmodifiable](http://docs.google.com/org/apache/commons/collections4/Unmodifiable.html)  
    
  public final class UnmodifiableMultiValuedMap<K,V>  
  extends [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<K,V>  
  implements [Unmodifiable](http://docs.google.com/org/apache/commons/collections4/Unmodifiable.html)  
  Decorates another [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html) to ensure it can't be altered.  
  Attempts to modify it will result in an UnsupportedOperationException.Since: 4.1 See Also: [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.multimap.UnmodifiableMultiValuedMap)

### Method SummaryAll Methods Static Methods Instance Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)>> | * + [asMap](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#asMap--)() Returns a view of this multi-valued map as a Map from each distinct key to the non-empty collection of that key's associated values. |
| * + void | * + [clear](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#clear--)() Removes all of the mappings from this map (optional operation). |
| * + [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[Map.Entry](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)>> | * + [entries](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#entries--)() Returns a [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true) view of the mappings contained in this multi-valued map. |
| * + [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> | * + [get](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#get-K-)([K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) key) Returns a view collection of the values associated with the specified key. |
| * + [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> | * + [keys](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#keys--)() Returns a [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html) view of the keys contained in this multi-valued map. |
| * + [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> | * + [keySet](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#keySet--)() Returns a [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true) view of the keys contained in this multi-valued map. |
| * + [MapIterator](http://docs.google.com/org/apache/commons/collections4/MapIterator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> | * + [mapIterator](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#mapIterator--)() Obtains a MapIterator over this multi-valued map. |
| * + boolean | * + [put](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#put-K-V-)([K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) key, [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) value) Adds a key-value mapping to this multi-valued map. |
| * + boolean | * + [putAll](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#putAll-K-java.lang.Iterable-)([K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) key, [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<? extends [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> values) Adds a mapping to the specified key for all values contained in the given Iterable. |
| * + boolean | * + [putAll](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#putAll-java.util.Map-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<? extends [K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> map) Copies all mappings from the specified map to this multi-valued map (optional operation). |
| * + boolean | * + [putAll](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#putAll-org.apache.commons.collections4.MultiValuedMap-)([MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<? extends [K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> map) Copies all mappings from the specified map to this multi-valued map (optional operation). |
| * + [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> | * + [remove](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key) Removes all values associated with the specified key. |
| * + boolean | * + [removeMapping](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#removeMapping-java.lang.Object-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) item) Removes a key-value mapping from the map. |
| * + static <K,V> [UnmodifiableMultiValuedMap](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)<K,V> | * + [unmodifiableMultiValuedMap](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#unmodifiableMultiValuedMap-org.apache.commons.collections4.MultiValuedMap-)([MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<? extends K,? extends V> map) Factory method to create an unmodifiable MultiValuedMap. |
| * + [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> | * + [values](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html#values--)() Gets a [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true) view of all values contained in this multi-valued map. |

### Methods inherited from class org.apache.commons.collections4.multimap.[**AbstractMultiValuedMapDecorator**](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)[containsKey](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#containsKey-java.lang.Object-), [containsMapping](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#containsMapping-java.lang.Object-java.lang.Object-), [containsValue](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#containsValue-java.lang.Object-), [decorated](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#decorated--), [equals](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#equals-java.lang.Object-), [hashCode](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#hashCode--), [isEmpty](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#isEmpty--), [size](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#size--), [toString](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#toString--)

### 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-)

### Method Detail

#### unmodifiableMultiValuedMap public static <K,V> [UnmodifiableMultiValuedMap](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)<K,V> unmodifiableMultiValuedMap([MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<? extends K,? extends V> map) Factory method to create an unmodifiable MultiValuedMap. If the map passed in is already unmodifiable, it is returned.Type Parameters: K - the type of key elements V - the type of value elements Parameters: map - the map to decorate, may not be null Returns: an unmodifiable MultiValuedMap Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if map is null

#### remove public [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key) Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#remove-java.lang.Object-) Removes all values associated with the specified key. The returned collection *may* be modifiable, but updates will not be propagated to this multi-valued map. In case no mapping was stored for the specified key, an empty, unmodifiable collection will be returned.Specified by: [remove](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#remove-java.lang.Object-) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [remove](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#remove-java.lang.Object-) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Parameters: key - the key to remove values from Returns: the values that were removed

#### removeMapping public boolean removeMapping([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) item) Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#removeMapping-java.lang.Object-java.lang.Object-) Removes a key-value mapping from the map. The item is removed from the collection mapped to the specified key. Other values attached to that key are unaffected. If the last value for a key is removed, implementations typically return an empty collection from a subsequent get(Object).Specified by: [removeMapping](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#removeMapping-java.lang.Object-java.lang.Object-) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [removeMapping](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#removeMapping-java.lang.Object-java.lang.Object-) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Parameters: key - the key to remove from item - the item to remove Returns: true if the mapping was removed, false otherwise

#### clear public void clear() Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#clear--) Removes all of the mappings from this map (optional operation). The map will be empty after this call returns.Specified by: [clear](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#clear--) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [clear](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#clear--) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)>

#### get public [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> get([K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) key) Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#get-K-) Returns a view collection of the values associated with the specified key. This method will return an **empty** collection if [MultiValuedMap.containsKey(Object)](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#containsKey-java.lang.Object-) returns false. Changes to the returned collection will update the underlying MultiValuedMap and vice-versa.Specified by: [get](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#get-K-) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [get](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#get-K-) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Parameters: key - the key to retrieve Returns: the Collection of values, implementations should return an empty collection for no mapping

#### put public boolean put([K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) key, [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) value) Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#put-K-V-) Adds a key-value mapping to this multi-valued map. Unlike a normal Map the previous value is not replaced. Instead the new value is added to the collection stored against the key. Depending on the collection type used, duplicate key-value mappings may be allowed. The method will return true if the size of the multi-valued map has been increased because of this operation.Specified by: [put](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#put-K-V-) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [put](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#put-K-V-) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Parameters: key - the key to store against value - the value to add to the collection at the key Returns: true if the map changed as a result of this put operation, or false if the map already contained the key-value mapping and the collection type does not allow duplicate values, e.g. when using a Set

#### keySet public [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> keySet() Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#keySet--) Returns a [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true) view of the keys contained in this multi-valued map. The set is backed by the map, so changes to the map are reflected in the set, and vice-versa. If the map is modified while an iteration over the set is in progress (except through the iterator's own remove operation), the result of the iteration is undefined. The set supports element removal, which removes the corresponding mapping from the map, via the Iterator.remove, Set.remove, removeAll, retainAll, and clear operations. It does not support the add or addAll operations.Specified by: [keySet](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#keySet--) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [keySet](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#keySet--) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Returns: a set view of the keys contained in this map

#### entries public [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[Map.Entry](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)>> entries() Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#entries--) Returns a [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true) view of the mappings contained in this multi-valued map. The collection is backed by the map, so changes to the map are reflected in the collection, and vice-versa.Specified by: [entries](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#entries--) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [entries](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#entries--) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Returns: a set view of the mappings contained in this map

#### keys public [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> keys() Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#keys--) Returns a [MultiSet](http://docs.google.com/org/apache/commons/collections4/MultiSet.html) view of the keys contained in this multi-valued map. The [MultiSet.getCount(Object)](http://docs.google.com/org/apache/commons/collections4/MultiSet.html#getCount-java.lang.Object-) method of the returned multiset will give the same result a calling get(Object).size() for the same key. This multiset is backed by the map, so any changes in the map are reflected in the multiset.Specified by: [keys](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#keys--) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [keys](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#keys--) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Returns: a multiset view of the keys contained in this map

#### values public [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> values() Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#values--) Gets a [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true) view of all values contained in this multi-valued map. Implementations typically return a collection containing the combination of values from all keys.Specified by: [values](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#values--) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [values](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#values--) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Returns: a collection view of the values contained in this multi-valued map

#### asMap public [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)>> asMap() Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#asMap--) Returns a view of this multi-valued map as a Map from each distinct key to the non-empty collection of that key's associated values. Note that this.asMap().get(k) is equivalent to this.get(k) only when k is a key contained in the multi-valued map; otherwise it returns null as opposed to an empty collection. Changes to the returned map or the collections that serve as its values will update the underlying multi-valued map, and vice versa. The map does not support put or putAll, nor do its entries support [setValue](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true#setValue-V-).Specified by: [asMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#asMap--) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [asMap](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#asMap--) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Returns: a map view of the mappings in this multi-valued map

#### mapIterator public [MapIterator](http://docs.google.com/org/apache/commons/collections4/MapIterator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> mapIterator() Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#mapIterator--) Obtains a MapIterator over this multi-valued map. A map iterator is an efficient way of iterating over maps. There is no need to access the entries collection or use Map.Entry objects.Specified by: [mapIterator](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#mapIterator--) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [mapIterator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#mapIterator--) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Returns: a map iterator

#### putAll public boolean putAll([K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html) key, [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<? extends [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> values) Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#putAll-K-java.lang.Iterable-) Adds a mapping to the specified key for all values contained in the given Iterable.Specified by: [putAll](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#putAll-K-java.lang.Iterable-) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [putAll](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#putAll-K-java.lang.Iterable-) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Parameters: key - the key to store against values - the values to add to the collection at the key, may not be null Returns: true if the map changed as a result of this operation

#### putAll public boolean putAll([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<? extends [K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> map) Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#putAll-java.util.Map-) Copies all mappings from the specified map to this multi-valued map (optional operation). The effect of this call is equivalent to that of calling [put(k, v)](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#put-K-V-) on this map once for each mapping from key k to value v in the specified map. The behavior of this operation is undefined if the specified map is modified while the operation is in progress.Specified by: [putAll](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#putAll-java.util.Map-) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [putAll](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#putAll-java.util.Map-) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Parameters: map - mappings to be stored in this map, may not be null Returns: true if the map changed as a result of this operation

#### putAll public boolean putAll([MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<? extends [K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> map) Description copied from interface: [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#putAll-org.apache.commons.collections4.MultiValuedMap-) Copies all mappings from the specified map to this multi-valued map (optional operation). The effect of this call is equivalent to that of calling [put(k, v)](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#put-K-V-) on this map once for each mapping from key k to value v in the specified map. The behavior of this operation is undefined if the specified map is modified while the operation is in progress.Specified by: [putAll](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html#putAll-org.apache.commons.collections4.MultiValuedMap-) in interface [MultiValuedMap](http://docs.google.com/org/apache/commons/collections4/MultiValuedMap.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Overrides: [putAll](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html#putAll-org.apache.commons.collections4.MultiValuedMap-) in class [AbstractMultiValuedMapDecorator](http://docs.google.com/org/apache/commons/collections4/multimap/AbstractMultiValuedMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/multimap/UnmodifiableMultiValuedMap.html)> Parameters: map - mappings to be stored in this map, may not be null Returns: true if the map changed as a result of this operation

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