org.h2.util

# Class ValueCountCollection

java.lang.Object
        org.h2.util.ValueCountCollection

**All Implemented Interfaces:**

    java.lang.Iterable, java.util.Collection

---

public class **ValueCountCollection**
extends java.lang.Object
implements java.util.Collection

Allows compact storage of intermediary selection and projection results that are necessary to be able to support certain aggregation functions. This class has two main "phases," first of which is a modification phase where data may be added or removed, and all Value added and their Count are kept track in a TreeMap for ordered retrieval later. Once the modification phase is complete, finalizeCollection() call must be made before extrapolation and array-like value retrieval is enabled. Once extrapolation is completed, this class is locked into read-only phase.

**Version:**

    2017-12-06

**Author:**

    Mike Ryu doryu@calpoly.edu

---

## Constructor Summary

**Constructors**

| Constructor and Description |
| --- |
| **ValueCountCollection**()<br>Default ValueCountCollection constructor. |

## Method Summary

**Methods**

| Modifier and Type | Method and Description |
| --- | --- |
| boolean | **add**(java.lang.Object o) |
| boolean | **addAll**(java.util.Collection c) |
| void | **clear**() |
| boolean | **contains**(java.lang.Object o) |
| boolean | **containsAll**(java.util.Collection c) |

| org.h2.value.Value | **extrapolatedGet**(int naturalIndex) |
|---|---|
| | Returns the desired item at a given array-like natural index [0, size). |
| org.h2.value.Value | **extrapolatedMode**() |
| | Returns the Value that occurs most frequently in this collection. |
| void | **finalizeCollection**() |
| | Use this method to signal the end of modification phase and finalize the content of this collection; this method MUST be called before accessing collection with extrapolatedGet(naturalIndex) or extrapolatedMode(). |
| boolean | **isEmpty**() |
| boolean | **isExtrapolateReady**() |
| | Use this method as a fail-safe check in the client methods to ensure that the extrapolation has been completed before accessing the Value members. |
| java.util.Iterator | **iterator**() |
| boolean | **remove**(java.lang.Object o) |
| boolean | **removeAll**(java.util.Collection c) |
| boolean | **retainAll**(java.util.Collection c) |
| int | **size**() |
| java.lang.Object[] | **toArray**() |
| java.lang.Object[] | **toArray**(java.lang.Object[] a) |

## Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

## Methods inherited from interface java.util.Collection

equals, hashCode

# Constructor Detail

## ValueCountCollection

```
public ValueCountCollection()
```

Default ValueCountCollection constructor. TreeMap is initialized with a default comparator for Values for ordering.

# Method Detail

## finalizeCollection

```
public void finalizeCollection()
                    throws java.lang.InterruptedException
```

Use this method to signal the end of modification phase and finalize the content of this collection; this method MUST be called before accessing collection with extrapolatedGet(naturalIndex) or extrapolatedMode(). Once this method is

called, no additional modification (addition or removal) or values will be permitted, and extrapolation to reconstruct the intermediary table for aggregation begins on a separate thread. Once this method returns, calls to extrapolatedGet(naturalIndex) and extrapolatedMode() will be permitted.

**Throws:**

> `java.lang.InterruptedException` - if the extrapolation thread was interrupted unexpectedly.

## isExtrapolateReady

`public boolean isExtrapolateReady()`

Use this method as a fail-safe check in the client methods to ensure that the extrapolation has been completed before accessing the Value members.

**Returns:**

> true if extrapolation is complete and this object is in read-only mode, false otherwise.

## extrapolatedGet

`public org.h2.value.Value extrapolatedGet(int naturalIndex)`

Returns the desired item at a given array-like natural index [0, size). IndexOutOfBoundsException gets through if the index given is negative or out of bounds.

**Parameters:**

> `naturalIndex` - array-like sequential index into this Collection.

**Returns:**

> Value at the given index, if the index is within bounds.

## extrapolatedMode

`public org.h2.value.Value extrapolatedMode()`

Returns the Value that occurs most frequently in this collection. If there is a tie, Value that was most recently encountered during the modification phase is selected.

**Returns:**

> the mode (most frequent) Value in this collection.

## size

`public int size()`

**Specified by:**

> `size` in interface `java.util.Collection`

## isEmpty

```
public boolean isEmpty()
```

**Specified by:**

isEmpty in interface `java.util.Collection`

## contains

```
public boolean contains(java.lang.Object o)
```

**Specified by:**

contains in interface `java.util.Collection`

## iterator

```
public java.util.Iterator iterator()
```

**Specified by:**

iterator in interface `java.lang.Iterable`

**Specified by:**

iterator in interface `java.util.Collection`

## add

```
public boolean add(java.lang.Object o)
```

**Specified by:**

add in interface `java.util.Collection`

## remove

```
public boolean remove(java.lang.Object o)
```

**Specified by:**

remove in interface `java.util.Collection`

## addAll

```
public boolean addAll(java.util.Collection c)
```

**Specified by:**

addAll in interface `java.util.Collection`

## clear

```
public void clear()
```

**Specified by:**

clear in interface java.util.Collection

## removeAll

```
public boolean removeAll(java.util.Collection c)
```

**Specified by:**

removeAll in interface java.util.Collection

## containsAll

```
public boolean containsAll(java.util.Collection c)
```

**Specified by:**

containsAll in interface java.util.Collection

## toArray

```
public java.lang.Object[] toArray()
```

**Specified by:**

toArray in interface java.util.Collection

## toArray

```
public java.lang.Object[] toArray(java.lang.Object[] a)
```

**Specified by:**

toArray in interface java.util.Collection

## retainAll

```
public boolean retainAll(java.util.Collection c)
```

**Specified by:**

retainAll in interface java.util.Collection