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org.apache.commons.collections4.queue

## Class SynchronizedQueue<E>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + [org.apache.commons.collections4.collection.SynchronizedCollection](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<E>
    - org.apache.commons.collections4.queue.SynchronizedQueue<E>
* Type Parameters: E - the type of the elements in the collection All Implemented Interfaces: [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true), [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>, [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E>  
    
  public class SynchronizedQueue<E>  
  extends [SynchronizedCollection](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<E>  
  implements [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E>  
  Decorates another [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true) to synchronize its behaviour for a multi-threaded environment.  
  Methods are synchronized, then forwarded to the decorated queue. Iterators must be separately synchronized around the loop.Since: 4.2 See Also: [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.queue.SynchronizedQueue)

### Field Summary

### Fields inherited from class org.apache.commons.collections4.collection.[**SynchronizedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)[lock](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#lock)

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [SynchronizedQueue](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#SynchronizedQueue-java.util.Queue-)([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> queue) Constructor that wraps (not copies). |
| * + protected | * + [SynchronizedQueue](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#SynchronizedQueue-java.util.Queue-java.lang.Object-)([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> queue, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) lock) Constructor that wraps (not copies). |

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

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + protected [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> | * + [decorated](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#decorated--)() Gets the queue being decorated. |
| * + [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) | * + [element](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#element--)() |
| * + boolean | * + [equals](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#equals-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) |
| * + int | * + [hashCode](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#hashCode--)() |
| * + boolean | * + [offer](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#offer-E-)([E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) e) |
| * + [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) | * + [peek](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#peek--)() |
| * + [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) | * + [poll](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#poll--)() |
| * + [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) | * + [remove](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#remove--)() |
| * + static <E> [SynchronizedQueue](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)<E> | * + [synchronizedQueue](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html#synchronizedQueue-java.util.Queue-)([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue) Factory method to create a synchronized queue. |

### Methods inherited from class org.apache.commons.collections4.collection.[**SynchronizedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)[add](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#add-E-), [addAll](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#addAll-java.util.Collection-), [clear](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#clear--), [contains](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#contains-java.lang.Object-), [containsAll](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#containsAll-java.util.Collection-), [isEmpty](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#isEmpty--), [iterator](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#iterator--), [remove](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#remove-java.lang.Object-), [removeAll](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#removeAll-java.util.Collection-), [removeIf](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#removeIf-java.util.function.Predicate-), [retainAll](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#retainAll-java.util.Collection-), [size](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#size--), [synchronizedCollection](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#synchronizedCollection-java.util.Collection-), [toArray](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#toArray--), [toArray](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#toArray-T:A-), [toString](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.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-)

### Methods inherited from interface java.util.[**Queue**](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)[add](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true#add-E-)

### 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-), [clear](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#clear--), [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#contains-java.lang.Object-), [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#containsAll-java.util.Collection-), [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#isEmpty--), [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#iterator--), [parallelStream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#parallelStream--), [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#remove-java.lang.Object-), [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeAll-java.util.Collection-), [removeIf](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeIf-java.util.function.Predicate-), [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#retainAll-java.util.Collection-), [size](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#size--), [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

#### SynchronizedQueue protected SynchronizedQueue([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> queue) Constructor that wraps (not copies).Parameters: queue - the queue to decorate, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if queue is null

#### SynchronizedQueue protected SynchronizedQueue([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> queue, [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) lock) Constructor that wraps (not copies).Parameters: queue - the queue to decorate, must not be null lock - the lock to use, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if queue or lock is null

### Method Detail

#### synchronizedQueue public static <E> [SynchronizedQueue](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)<E> synchronizedQueue([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue) Factory method to create a synchronized queue.Type Parameters: E - the type of the elements in the queue Parameters: queue - the queue to decorate, must not be null Returns: a new synchronized Queue Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if queue is null

#### decorated protected [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> decorated() Gets the queue being decorated.Overrides: [decorated](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#decorated--) in class [SynchronizedCollection](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)> Returns: the decorated queue

#### element public [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) element()Specified by: [element](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true#element--) in interface [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)>

#### equals public boolean equals([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object)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/queue/SynchronizedQueue.html)> Overrides: [equals](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#equals-java.lang.Object-) in class [SynchronizedCollection](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)>

#### hashCode public int hashCode()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/queue/SynchronizedQueue.html)> Overrides: [hashCode](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html#hashCode--) in class [SynchronizedCollection](http://docs.google.com/org/apache/commons/collections4/collection/SynchronizedCollection.html)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)>

#### offer public boolean offer([E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) e)Specified by: [offer](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true#offer-E-) in interface [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)>

#### peek public [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) peek()Specified by: [peek](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true#peek--) in interface [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)>

#### poll public [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) poll()Specified by: [poll](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true#poll--) in interface [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)>

#### remove public [E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html) remove()Specified by: [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true#remove--) in interface [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/queue/SynchronizedQueue.html)>

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