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[Skip navigation links](#1fob9te)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/QueueUtils.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* [Prev Class](http://docs.google.com/org/apache/commons/collections4/Put.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/ResettableIterator.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/QueueUtils.html)
* [No Frames](http://docs.google.com/QueueUtils.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#3znysh7) |
* Constr |
* [Method](#2et92p0)
* Detail:
* [Field](#3dy6vkm) |
* Constr |
* [Method](#4d34og8)

org.apache.commons.collections4

## Class QueueUtils

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + org.apache.commons.collections4.QueueUtils
* public class QueueUtils  
  extends [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)  
  Provides utility methods and decorators for [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true) instances.Since: 4.0

### Field SummaryFields

|  |  |
| --- | --- |
| * + Modifier and Type | * + Field and Description |
| * + static [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true) | * + [EMPTY\_QUEUE](http://docs.google.com/org/apache/commons/collections4/QueueUtils.html#EMPTY_QUEUE) An empty unmodifiable queue. |

### Method SummaryAll Methods Static Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> | * + [emptyQueue](http://docs.google.com/org/apache/commons/collections4/QueueUtils.html#emptyQueue--)() Get an empty Queue. |
| * + static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> | * + [predicatedQueue](http://docs.google.com/org/apache/commons/collections4/QueueUtils.html#predicatedQueue-java.util.Queue-org.apache.commons.collections4.Predicate-)([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super E> predicate) Returns a predicated (validating) queue backed by the given queue. |
| * + static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> | * + [synchronizedQueue](http://docs.google.com/org/apache/commons/collections4/QueueUtils.html#synchronizedQueue-java.util.Queue-)([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue) Returns a synchronized (thread-safe) queue backed by the given queue. |
| * + static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> | * + [transformingQueue](http://docs.google.com/org/apache/commons/collections4/QueueUtils.html#transformingQueue-java.util.Queue-org.apache.commons.collections4.Transformer-)([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Returns a transformed queue backed by the given queue. |
| * + static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> | * + [unmodifiableQueue](http://docs.google.com/org/apache/commons/collections4/QueueUtils.html#unmodifiableQueue-java.util.Queue-)([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<? extends E> queue) Returns an unmodifiable queue backed by the given queue. |

### 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--), [equals](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#equals-java.lang.Object-), [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--), [hashCode](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#hashCode--), [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--), [toString](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#toString--), [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-)

### Field Detail

#### EMPTY\_QUEUE public static final [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true) EMPTY\_QUEUE An empty unmodifiable queue.

### Method Detail

#### synchronizedQueue public static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> synchronizedQueue([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue) Returns a synchronized (thread-safe) queue backed by the given queue. In order to guarantee serial access, it is critical that all access to the backing queue is accomplished through the returned queue. It is imperative that the user manually synchronize on the returned queue when iterating over it: Queue queue = QueueUtils.synchronizedQueue(new CircularFifoQueue()); ... synchronized(queue) { Iterator i = queue.iterator(); // Must be in synchronized block while (i.hasNext()) foo(i.next()); } } Failure to follow this advice may result in non-deterministic behavior.Type Parameters: E - the element type Parameters: queue - the queue to synchronize, must not be null Returns: a synchronized queue backed by that queue Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the queue is null Since: 4.2

#### unmodifiableQueue public static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> unmodifiableQueue([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<? extends E> queue) Returns an unmodifiable queue backed by the given queue.Type Parameters: E - the type of the elements in the queue Parameters: queue - the queue to make unmodifiable, must not be null Returns: an unmodifiable queue backed by that queue Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the queue is null

#### predicatedQueue public static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> predicatedQueue([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super E> predicate) Returns a predicated (validating) queue backed by the given queue. Only objects that pass the test in the given predicate can be added to the queue. Trying to add an invalid object results in an IllegalArgumentException. It is important not to use the original queue after invoking this method, as it is a backdoor for adding invalid objects.Type Parameters: E - the type of the elements in the queue Parameters: queue - the queue to predicate, must not be null predicate - the predicate used to evaluate new elements, must not be null Returns: a predicated queue Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the queue or predicate is null

#### transformingQueue public static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> transformingQueue([Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> queue, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Returns a transformed queue backed by the given queue. Each object is passed through the transformer as it is added to the Queue. It is important not to use the original queue after invoking this method, as it is a backdoor for adding untransformed objects. Existing entries in the specified queue will not be transformed. If you want that behaviour, see [TransformedQueue.transformedQueue(java.util.Queue<E>, org.apache.commons.collections4.Transformer<? super E, ? extends E>)](http://docs.google.com/org/apache/commons/collections4/queue/TransformedQueue.html#transformedQueue-java.util.Queue-org.apache.commons.collections4.Transformer-).Type Parameters: E - the type of the elements in the queue Parameters: queue - the queue to predicate, must not be null transformer - the transformer for the queue, must not be null Returns: a transformed queue backed by the given queue Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the queue or transformer is null

#### emptyQueue public static <E> [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)<E> emptyQueue() Get an empty Queue.Type Parameters: E - the type of the elements in the queue Returns: an empty [Queue](https://docs.oracle.com/javase/7/docs/api/java/util/Queue.html?is-external=true)

[Skip navigation links](#44sinio)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/QueueUtils.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* [Prev Class](http://docs.google.com/org/apache/commons/collections4/Put.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/ResettableIterator.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/QueueUtils.html)
* [No Frames](http://docs.google.com/QueueUtils.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#3znysh7) |
* Constr |
* [Method](#2et92p0)
* Detail:
* [Field](#3dy6vkm) |
* Constr |
* [Method](#4d34og8)

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