| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | [**Class**](http://docs.google.com/java/lang/Cloneable.html) | **Use** | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
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| PREV   NEXT | [**FRAMES**](http://docs.google.com/index.html?java/lang//class-useCloneable.html)    [**NO FRAMES**](http://docs.google.com/Cloneable.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

**Uses of Interface**

**java.lang.Cloneable**

| Packages that use [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| [**java.awt**](#3znysh7) | Contains all of the classes for creating user interfaces and for painting graphics and images. |
| [**java.awt.datatransfer**](#2et92p0) | Provides interfaces and classes for transferring data between and within applications. |
| [**java.awt.font**](#tyjcwt) | Provides classes and interface relating to fonts. |
| [**java.awt.geom**](#3dy6vkm) | Provides the Java 2D classes for defining and performing operations on objects related to two-dimensional geometry. |
| [**java.awt.image**](#1t3h5sf) | Provides classes for creating and modifying images. |
| [**java.awt.image.renderable**](#4d34og8) | Provides classes and interfaces for producing rendering-independent images. |
| [**java.awt.print**](#2s8eyo1) | Provides classes and interfaces for a general printing API. |
| [**java.net**](#17dp8vu) | Provides the classes for implementing networking applications. |
| [**java.security**](#3rdcrjn) | Provides the classes and interfaces for the security framework. |
| [**java.security.acl**](#26in1rg) | The classes and interfaces in this package have been superseded by classes in the java.security package. |
| [**java.security.cert**](#lnxbz9) | Provides classes and interfaces for parsing and managing certificates, certificate revocation lists (CRLs), and certification paths. |
| [**java.sql**](#35nkun2) | Provides the API for accessing and processing data stored in a data source (usually a relational database) using the JavaTM programming language. |
| [**java.text**](#1ksv4uv) | Provides classes and interfaces for handling text, dates, numbers, and messages in a manner independent of natural languages. |
| [**java.util**](#44sinio) | Contains the collections framework, legacy collection classes, event model, date and time facilities, internationalization, and miscellaneous utility classes (a string tokenizer, a random-number generator, and a bit array). |
| [**java.util.concurrent**](#2jxsxqh) | Utility classes commonly useful in concurrent programming. |
| [**java.util.jar**](#z337ya) | Provides classes for reading and writing the JAR (Java ARchive) file format, which is based on the standard ZIP file format with an optional manifest file. |
| [**java.util.zip**](#3j2qqm3) | Provides classes for reading and writing the standard ZIP and GZIP file formats. |
| [**javax.activation**](#1y810tw) |  |
| [**javax.crypto**](#4i7ojhp) | Provides the classes and interfaces for cryptographic operations. |
| [**javax.management**](#2xcytpi) | Provides the core classes for the Java Management Extensions. |
| [**javax.management.modelmbean**](#1ci93xb) | Provides the definition of the ModelMBean classes. |
| [**javax.management.openmbean**](#3whwml4) | Provides the open data types and Open MBean descriptor classes. |
| [**javax.management.relation**](#2bn6wsx) | Provides the definition of the Relation Service. |
| [**javax.naming**](#qsh70q) | Provides the classes and interfaces for accessing naming services. |
| [**javax.naming.directory**](#3as4poj) | Extends the javax.naming package to provide functionality for accessing directory services. |
| [**javax.naming.ldap**](#1pxezwc) | Provides support for LDAPv3 extended operations and controls. |
| [**javax.print**](#49x2ik5) | Provides the principal classes and interfaces for the JavaTM Print Service API. |
| [**javax.print.attribute**](#2p2csry) | Provides classes and interfaces that describe the types of JavaTM Print Service attributes and how they can be collected into attribute sets. |
| [**javax.print.attribute.standard**](#147n2zr) | Package javax.print.attribute.standard contains classes for specific printing attributes. |
| [**javax.sound.midi**](#3o7alnk) | Provides interfaces and classes for I/O, sequencing, and synthesis of MIDI (Musical Instrument Digital Interface) data. |
| [**javax.sql.rowset**](#23ckvvd) | Standard interfaces and base classes for JDBC RowSet implementations. |
| [**javax.sql.rowset.serial**](#ihv636) | Provides utility classes to allow serializable mappings between SQL types and data types in the Java programming language. |
| [**javax.swing**](#32hioqz) | Provides a set of "lightweight" (all-Java language) components that, to the maximum degree possible, work the same on all platforms. |
| [**javax.swing.plaf**](#1hmsyys) | Provides one interface and many abstract classes that Swing uses to provide its pluggable look-and-feel capabilities. |
| [**javax.swing.plaf.basic**](#41mghml) | Provides user interface objects built according to the Basic look and feel. |
| [**javax.swing.plaf.metal**](#2grqrue) | Provides user interface objects built according to the Java look and feel (once codenamed *Metal*), which is the default look and feel. |
| [**javax.swing.text**](#vx1227) | Provides classes and interfaces that deal with editable and noneditable text components. |
| [**javax.swing.text.html**](#3fwokq0) | Provides the class HTMLEditorKit and supporting classes for creating HTML text editors. |
| [**javax.swing.text.rtf**](#1v1yuxt) | Provides a class (RTFEditorKit) for creating Rich-Text-Format text editors. |
| [**javax.swing.tree**](#4f1mdlm) | Provides classes and interfaces for dealing with javax.swing.JTree. |
| [**javax.xml.datatype**](#2u6wntf) | XML/Java Type Mappings. |
| [**org.ietf.jgss**](#19c6y18) | This package presents a framework that allows application developers to make use of security services like authentication, data integrity and data confidentiality from a variety of underlying security mechanisms like Kerberos, using a unified API. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.awt](http://docs.google.com/java/awt/package-summary.html) | |
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| Classes in [java.awt](http://docs.google.com/java/awt/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**BufferCapabilities**](http://docs.google.com/java/awt/BufferCapabilities.html)            Capabilities and properties of buffers. |
| class | [**Dimension**](http://docs.google.com/java/awt/Dimension.html)            The Dimension class encapsulates the width and height of a component (in integer precision) in a single object. |
| class | [**GridBagConstraints**](http://docs.google.com/java/awt/GridBagConstraints.html)            The GridBagConstraints class specifies constraints for components that are laid out using the GridBagLayout class. |
| class | [**ImageCapabilities**](http://docs.google.com/java/awt/ImageCapabilities.html)            Capabilities and properties of images. |
| class | [**Insets**](http://docs.google.com/java/awt/Insets.html)            An Insets object is a representation of the borders of a container. |
| class | [**JobAttributes**](http://docs.google.com/java/awt/JobAttributes.html)            A set of attributes which control a print job. |
| class | [**PageAttributes**](http://docs.google.com/java/awt/PageAttributes.html)            A set of attributes which control the output of a printed page. |
| class | [**Point**](http://docs.google.com/java/awt/Point.html)            A point representing a location in (x,y) coordinate space, specified in integer precision. |
| class | [**Rectangle**](http://docs.google.com/java/awt/Rectangle.html)            A Rectangle specifies an area in a coordinate space that is enclosed by the Rectangle object's upper-left point (x,y) in the coordinate space, its width, and its height. |
| class | [**RenderingHints**](http://docs.google.com/java/awt/RenderingHints.html)            The RenderingHints class defines and manages collections of keys and associated values which allow an application to provide input into the choice of algorithms used by other classes which perform rendering and image manipulation services. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.awt.datatransfer](http://docs.google.com/java/awt/datatransfer/package-summary.html) | |
| --- | --- |

| Classes in [java.awt.datatransfer](http://docs.google.com/java/awt/datatransfer/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**DataFlavor**](http://docs.google.com/java/awt/datatransfer/DataFlavor.html)            A DataFlavor provides meta information about data. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.awt.font](http://docs.google.com/java/awt/font/package-summary.html) | |
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| Classes in [java.awt.font](http://docs.google.com/java/awt/font/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**GlyphVector**](http://docs.google.com/java/awt/font/GlyphVector.html)            A GlyphVector object is a collection of glyphs containing geometric information for the placement of each glyph in a transformed coordinate space which corresponds to the device on which the GlyphVector is ultimately displayed. |
| class | [**TextLayout**](http://docs.google.com/java/awt/font/TextLayout.html)            TextLayout is an immutable graphical representation of styled character data. |
| class | [**TextMeasurer**](http://docs.google.com/java/awt/font/TextMeasurer.html)            The TextMeasurer class provides the primitive operations needed for line break: measuring up to a given advance, determining the advance of a range of characters, and generating a TextLayout for a range of characters. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.awt.geom](http://docs.google.com/java/awt/geom/package-summary.html) | |
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| Classes in [java.awt.geom](http://docs.google.com/java/awt/geom/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**AffineTransform**](http://docs.google.com/java/awt/geom/AffineTransform.html)            The AffineTransform class represents a 2D affine transform that performs a linear mapping from 2D coordinates to other 2D coordinates that preserves the "straightness" and "parallelness" of lines. |
| class | [**Arc2D**](http://docs.google.com/java/awt/geom/Arc2D.html)            Arc2D is the abstract superclass for all objects that store a 2D arc defined by a framing rectangle, start angle, angular extent (length of the arc), and a closure type (OPEN, CHORD, or PIE). |
| static class | [**Arc2D.Double**](http://docs.google.com/java/awt/geom/Arc2D.Double.html)            This class defines an arc specified in double precision. |
| static class | [**Arc2D.Float**](http://docs.google.com/java/awt/geom/Arc2D.Float.html)            This class defines an arc specified in float precision. |
| class | [**Area**](http://docs.google.com/java/awt/geom/Area.html)            An Area object stores and manipulates a resolution-independent description of an enclosed area of 2-dimensional space. |
| class | [**CubicCurve2D**](http://docs.google.com/java/awt/geom/CubicCurve2D.html)            The CubicCurve2D class defines a cubic parametric curve segment in (x,y) coordinate space. |
| static class | [**CubicCurve2D.Double**](http://docs.google.com/java/awt/geom/CubicCurve2D.Double.html)            A cubic parametric curve segment specified with double coordinates. |
| static class | [**CubicCurve2D.Float**](http://docs.google.com/java/awt/geom/CubicCurve2D.Float.html)            A cubic parametric curve segment specified with float coordinates. |
| class | [**Dimension2D**](http://docs.google.com/java/awt/geom/Dimension2D.html)            The Dimension2D class is to encapsulate a width and a height dimension. |
| class | [**Ellipse2D**](http://docs.google.com/java/awt/geom/Ellipse2D.html)            The Ellipse2D class describes an ellipse that is defined by a framing rectangle. |
| static class | [**Ellipse2D.Double**](http://docs.google.com/java/awt/geom/Ellipse2D.Double.html)            The Double class defines an ellipse specified in double precision. |
| static class | [**Ellipse2D.Float**](http://docs.google.com/java/awt/geom/Ellipse2D.Float.html)            The Float class defines an ellipse specified in float precision. |
| class | [**GeneralPath**](http://docs.google.com/java/awt/geom/GeneralPath.html)            The GeneralPath class represents a geometric path constructed from straight lines, and quadratic and cubic (Bézier) curves. |
| class | [**Line2D**](http://docs.google.com/java/awt/geom/Line2D.html)            This Line2D represents a line segment in (x,y) coordinate space. |
| static class | [**Line2D.Double**](http://docs.google.com/java/awt/geom/Line2D.Double.html)            A line segment specified with double coordinates. |
| static class | [**Line2D.Float**](http://docs.google.com/java/awt/geom/Line2D.Float.html)            A line segment specified with float coordinates. |
| class | [**Path2D**](http://docs.google.com/java/awt/geom/Path2D.html)            The Path2D class provides a simple, yet flexible shape which represents an arbitrary geometric path. |
| static class | [**Path2D.Double**](http://docs.google.com/java/awt/geom/Path2D.Double.html)            The Double class defines a geometric path with coordinates stored in double precision floating point. |
| static class | [**Path2D.Float**](http://docs.google.com/java/awt/geom/Path2D.Float.html)            The Float class defines a geometric path with coordinates stored in single precision floating point. |
| class | [**Point2D**](http://docs.google.com/java/awt/geom/Point2D.html)            The Point2D class defines a point representing a location in (x,y) coordinate space. |
| static class | [**Point2D.Double**](http://docs.google.com/java/awt/geom/Point2D.Double.html)            The Double class defines a point specified in double precision. |
| static class | [**Point2D.Float**](http://docs.google.com/java/awt/geom/Point2D.Float.html)            The Float class defines a point specified in float precision. |
| class | [**QuadCurve2D**](http://docs.google.com/java/awt/geom/QuadCurve2D.html)            The QuadCurve2D class defines a quadratic parametric curve segment in (x,y) coordinate space. |
| static class | [**QuadCurve2D.Double**](http://docs.google.com/java/awt/geom/QuadCurve2D.Double.html)            A quadratic parametric curve segment specified with double coordinates. |
| static class | [**QuadCurve2D.Float**](http://docs.google.com/java/awt/geom/QuadCurve2D.Float.html)            A quadratic parametric curve segment specified with float coordinates. |
| class | [**Rectangle2D**](http://docs.google.com/java/awt/geom/Rectangle2D.html)            The Rectangle2D class describes a rectangle defined by a location (x,y) and dimension (w x h). |
| static class | [**Rectangle2D.Double**](http://docs.google.com/java/awt/geom/Rectangle2D.Double.html)            The Double class defines a rectangle specified in double coordinates. |
| static class | [**Rectangle2D.Float**](http://docs.google.com/java/awt/geom/Rectangle2D.Float.html)            The Float class defines a rectangle specified in float coordinates. |
| class | [**RectangularShape**](http://docs.google.com/java/awt/geom/RectangularShape.html)            RectangularShape is the base class for a number of [Shape](http://docs.google.com/java/awt/Shape.html) objects whose geometry is defined by a rectangular frame. |
| class | [**RoundRectangle2D**](http://docs.google.com/java/awt/geom/RoundRectangle2D.html)            The RoundRectangle2D class defines a rectangle with rounded corners defined by a location (x,y), a dimension (w x h), and the width and height of an arc with which to round the corners. |
| static class | [**RoundRectangle2D.Double**](http://docs.google.com/java/awt/geom/RoundRectangle2D.Double.html)            The Double class defines a rectangle with rounded corners all specified in double coordinates. |
| static class | [**RoundRectangle2D.Float**](http://docs.google.com/java/awt/geom/RoundRectangle2D.Float.html)            The Float class defines a rectangle with rounded corners all specified in float coordinates. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.awt.image](http://docs.google.com/java/awt/image/package-summary.html) | |
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| Classes in [java.awt.image](http://docs.google.com/java/awt/image/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**AreaAveragingScaleFilter**](http://docs.google.com/java/awt/image/AreaAveragingScaleFilter.html)            An ImageFilter class for scaling images using a simple area averaging algorithm that produces smoother results than the nearest neighbor algorithm. |
| class | [**BufferedImageFilter**](http://docs.google.com/java/awt/image/BufferedImageFilter.html)            The BufferedImageFilter class subclasses an ImageFilter to provide a simple means of using a single-source/single-destination image operator ([BufferedImageOp](http://docs.google.com/java/awt/image/BufferedImageOp.html)) to filter a BufferedImage in the Image Producer/Consumer/Observer paradigm. |
| class | [**CropImageFilter**](http://docs.google.com/java/awt/image/CropImageFilter.html)            An ImageFilter class for cropping images. |
| class | [**ImageFilter**](http://docs.google.com/java/awt/image/ImageFilter.html)            This class implements a filter for the set of interface methods that are used to deliver data from an ImageProducer to an ImageConsumer. |
| class | [**Kernel**](http://docs.google.com/java/awt/image/Kernel.html)            The Kernel class defines a matrix that describes how a specified pixel and its surrounding pixels affect the value computed for the pixel's position in the output image of a filtering operation. |
| class | [**ReplicateScaleFilter**](http://docs.google.com/java/awt/image/ReplicateScaleFilter.html)            An ImageFilter class for scaling images using the simplest algorithm. |
| class | [**RGBImageFilter**](http://docs.google.com/java/awt/image/RGBImageFilter.html)            This class provides an easy way to create an ImageFilter which modifies the pixels of an image in the default RGB ColorModel. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.awt.image.renderable](http://docs.google.com/java/awt/image/renderable/package-summary.html) | |
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| Classes in [java.awt.image.renderable](http://docs.google.com/java/awt/image/renderable/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**ParameterBlock**](http://docs.google.com/java/awt/image/renderable/ParameterBlock.html)            A ParameterBlock encapsulates all the information about sources and parameters (Objects) required by a RenderableImageOp, or other classes that process images. |
| class | [**RenderContext**](http://docs.google.com/java/awt/image/renderable/RenderContext.html)            A RenderContext encapsulates the information needed to produce a specific rendering from a RenderableImage. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.awt.print](http://docs.google.com/java/awt/print/package-summary.html) | |
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| Classes in [java.awt.print](http://docs.google.com/java/awt/print/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**PageFormat**](http://docs.google.com/java/awt/print/PageFormat.html)            The PageFormat class describes the size and orientation of a page to be printed. |
| class | [**Paper**](http://docs.google.com/java/awt/print/Paper.html)            The Paper class describes the physical characteristics of a piece of paper. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.net](http://docs.google.com/java/net/package-summary.html) | |
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| Classes in [java.net](http://docs.google.com/java/net/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**HttpCookie**](http://docs.google.com/java/net/HttpCookie.html)            An HttpCookie object represents an http cookie, which carries state information between server and user agent. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.security](http://docs.google.com/java/security/package-summary.html) | |
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| Classes in [java.security](http://docs.google.com/java/security/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**AuthProvider**](http://docs.google.com/java/security/AuthProvider.html)            This class defines login and logout methods for a provider. |
| class | [**Provider**](http://docs.google.com/java/security/Provider.html)            This class represents a "provider" for the Java Security API, where a provider implements some or all parts of Java Security. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.security.acl](http://docs.google.com/java/security/acl/package-summary.html) | |
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| Subinterfaces of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.security.acl](http://docs.google.com/java/security/acl/package-summary.html) | |
| --- | --- |
| interface | [**AclEntry**](http://docs.google.com/java/security/acl/AclEntry.html)            This is the interface used for representing one entry in an Access Control List (ACL). |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.security.cert](http://docs.google.com/java/security/cert/package-summary.html) | |
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| Subinterfaces of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.security.cert](http://docs.google.com/java/security/cert/package-summary.html) | |
| --- | --- |
| interface | [**CertPathBuilderResult**](http://docs.google.com/java/security/cert/CertPathBuilderResult.html)            A specification of the result of a certification path builder algorithm. |
| interface | [**CertPathParameters**](http://docs.google.com/java/security/cert/CertPathParameters.html)            A specification of certification path algorithm parameters. |
| interface | [**CertPathValidatorResult**](http://docs.google.com/java/security/cert/CertPathValidatorResult.html)            A specification of the result of a certification path validator algorithm. |
| interface | [**CertSelector**](http://docs.google.com/java/security/cert/CertSelector.html)            A selector that defines a set of criteria for selecting Certificates. |
| interface | [**CertStoreParameters**](http://docs.google.com/java/security/cert/CertStoreParameters.html)            A specification of CertStore parameters. |
| interface | [**CRLSelector**](http://docs.google.com/java/security/cert/CRLSelector.html)            A selector that defines a set of criteria for selecting CRLs. |

| Classes in [java.security.cert](http://docs.google.com/java/security/cert/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**CollectionCertStoreParameters**](http://docs.google.com/java/security/cert/CollectionCertStoreParameters.html)            Parameters used as input for the Collection CertStore algorithm. |
| class | [**LDAPCertStoreParameters**](http://docs.google.com/java/security/cert/LDAPCertStoreParameters.html)            Parameters used as input for the LDAP CertStore algorithm. |
| class | [**PKIXBuilderParameters**](http://docs.google.com/java/security/cert/PKIXBuilderParameters.html)            Parameters used as input for the PKIX CertPathBuilder algorithm. |
| class | [**PKIXCertPathBuilderResult**](http://docs.google.com/java/security/cert/PKIXCertPathBuilderResult.html)            This class represents the successful result of the PKIX certification path builder algorithm. |
| class | [**PKIXCertPathChecker**](http://docs.google.com/java/security/cert/PKIXCertPathChecker.html)            An abstract class that performs one or more checks on an X509Certificate. |
| class | [**PKIXCertPathValidatorResult**](http://docs.google.com/java/security/cert/PKIXCertPathValidatorResult.html)            This class represents the successful result of the PKIX certification path validation algorithm. |
| class | [**PKIXParameters**](http://docs.google.com/java/security/cert/PKIXParameters.html)            Parameters used as input for the PKIX CertPathValidator algorithm. |
| class | [**X509CertSelector**](http://docs.google.com/java/security/cert/X509CertSelector.html)            A CertSelector that selects X509Certificates that match all specified criteria. |
| class | [**X509CRLSelector**](http://docs.google.com/java/security/cert/X509CRLSelector.html)            A CRLSelector that selects X509CRLs that match all specified criteria. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.sql](http://docs.google.com/java/sql/package-summary.html) | |
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| Classes in [java.sql](http://docs.google.com/java/sql/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**Time**](http://docs.google.com/java/sql/Time.html)            A thin wrapper around the java.util.Date class that allows the JDBC API to identify this as an SQL TIME value. |
| class | [**Timestamp**](http://docs.google.com/java/sql/Timestamp.html)            A thin wrapper around java.util.Date that allows the JDBC API to identify this as an SQL TIMESTAMP value. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.text](http://docs.google.com/java/text/package-summary.html) | |
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| Subinterfaces of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.text](http://docs.google.com/java/text/package-summary.html) | |
| --- | --- |
| interface | [**AttributedCharacterIterator**](http://docs.google.com/java/text/AttributedCharacterIterator.html)            An AttributedCharacterIterator allows iteration through both text and related attribute information. |
| interface | [**CharacterIterator**](http://docs.google.com/java/text/CharacterIterator.html)            This interface defines a protocol for bidirectional iteration over text. |

| Classes in [java.text](http://docs.google.com/java/text/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**BreakIterator**](http://docs.google.com/java/text/BreakIterator.html)            The BreakIterator class implements methods for finding the location of boundaries in text. |
| class | [**ChoiceFormat**](http://docs.google.com/java/text/ChoiceFormat.html)            A ChoiceFormat allows you to attach a format to a range of numbers. |
| class | [**Collator**](http://docs.google.com/java/text/Collator.html)            The Collator class performs locale-sensitive String comparison. |
| class | [**DateFormat**](http://docs.google.com/java/text/DateFormat.html)            DateFormat is an abstract class for date/time formatting subclasses which formats and parses dates or time in a language-independent manner. |
| class | [**DateFormatSymbols**](http://docs.google.com/java/text/DateFormatSymbols.html)            DateFormatSymbols is a public class for encapsulating localizable date-time formatting data, such as the names of the months, the names of the days of the week, and the time zone data. |
| class | [**DecimalFormat**](http://docs.google.com/java/text/DecimalFormat.html)            DecimalFormat is a concrete subclass of NumberFormat that formats decimal numbers. |
| class | [**DecimalFormatSymbols**](http://docs.google.com/java/text/DecimalFormatSymbols.html)            This class represents the set of symbols (such as the decimal separator, the grouping separator, and so on) needed by DecimalFormat to format numbers. |
| class | [**Format**](http://docs.google.com/java/text/Format.html)            Format is an abstract base class for formatting locale-sensitive information such as dates, messages, and numbers. |
| class | [**MessageFormat**](http://docs.google.com/java/text/MessageFormat.html)            MessageFormat provides a means to produce concatenated messages in a language-neutral way. |
| class | [**NumberFormat**](http://docs.google.com/java/text/NumberFormat.html)            NumberFormat is the abstract base class for all number formats. |
| class | [**RuleBasedCollator**](http://docs.google.com/java/text/RuleBasedCollator.html)            The RuleBasedCollator class is a concrete subclass of Collator that provides a simple, data-driven, table collator. |
| class | [**SimpleDateFormat**](http://docs.google.com/java/text/SimpleDateFormat.html)            SimpleDateFormat is a concrete class for formatting and parsing dates in a locale-sensitive manner. |
| class | [**StringCharacterIterator**](http://docs.google.com/java/text/StringCharacterIterator.html)            StringCharacterIterator implements the CharacterIterater protocol for a String. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.util](http://docs.google.com/java/util/package-summary.html) | |
| --- | --- |

| Classes in [java.util](http://docs.google.com/java/util/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**ArrayDeque<E>**](http://docs.google.com/java/util/ArrayDeque.html)            Resizable-array implementation of the [Deque](http://docs.google.com/java/util/Deque.html) interface. |
| class | [**ArrayList<E>**](http://docs.google.com/java/util/ArrayList.html)            Resizable-array implementation of the List interface. |
| class | [**BitSet**](http://docs.google.com/java/util/BitSet.html)            This class implements a vector of bits that grows as needed. |
| class | [**Calendar**](http://docs.google.com/java/util/Calendar.html)            The Calendar class is an abstract class that provides methods for converting between a specific instant in time and a set of [calendar fields](http://docs.google.com/java/util/Calendar.html#fields) such as YEAR, MONTH, DAY\_OF\_MONTH, HOUR, and so on, and for manipulating the calendar fields, such as getting the date of the next week. |
| class | [**Date**](http://docs.google.com/java/util/Date.html)            The class Date represents a specific instant in time, with millisecond precision. |
| class | [**EnumMap<K extends Enum<K>,V>**](http://docs.google.com/java/util/EnumMap.html)            A specialized [Map](http://docs.google.com/java/util/Map.html) implementation for use with enum type keys. |
| class | [**EnumSet<E extends Enum<E>>**](http://docs.google.com/java/util/EnumSet.html)            A specialized [Set](http://docs.google.com/java/util/Set.html) implementation for use with enum types. |
| class | [**GregorianCalendar**](http://docs.google.com/java/util/GregorianCalendar.html)            GregorianCalendar is a concrete subclass of Calendar and provides the standard calendar system used by most of the world. |
| class | [**HashMap<K,V>**](http://docs.google.com/java/util/HashMap.html)            Hash table based implementation of the Map interface. |
| class | [**HashSet<E>**](http://docs.google.com/java/util/HashSet.html)            This class implements the Set interface, backed by a hash table (actually a HashMap instance). |
| class | [**Hashtable<K,V>**](http://docs.google.com/java/util/Hashtable.html)            This class implements a hashtable, which maps keys to values. |
| class | [**IdentityHashMap<K,V>**](http://docs.google.com/java/util/IdentityHashMap.html)            This class implements the Map interface with a hash table, using reference-equality in place of object-equality when comparing keys (and values). |
| class | [**LinkedHashMap<K,V>**](http://docs.google.com/java/util/LinkedHashMap.html)            Hash table and linked list implementation of the Map interface, with predictable iteration order. |
| class | [**LinkedHashSet<E>**](http://docs.google.com/java/util/LinkedHashSet.html)            Hash table and linked list implementation of the Set interface, with predictable iteration order. |
| class | [**LinkedList<E>**](http://docs.google.com/java/util/LinkedList.html)            Linked list implementation of the List interface. |
| class | [**Locale**](http://docs.google.com/java/util/Locale.html)            A Locale object represents a specific geographical, political, or cultural region. |
| class | [**Properties**](http://docs.google.com/java/util/Properties.html)            The Properties class represents a persistent set of properties. |
| class | [**SimpleTimeZone**](http://docs.google.com/java/util/SimpleTimeZone.html)            SimpleTimeZone is a concrete subclass of TimeZone that represents a time zone for use with a Gregorian calendar. |
| class | [**Stack<E>**](http://docs.google.com/java/util/Stack.html)            The Stack class represents a last-in-first-out (LIFO) stack of objects. |
| class | [**TimeZone**](http://docs.google.com/java/util/TimeZone.html)            TimeZone represents a time zone offset, and also figures out daylight savings. |
| class | [**TreeMap<K,V>**](http://docs.google.com/java/util/TreeMap.html)            A Red-Black tree based [NavigableMap](http://docs.google.com/java/util/NavigableMap.html) implementation. |
| class | [**TreeSet<E>**](http://docs.google.com/java/util/TreeSet.html)            A [NavigableSet](http://docs.google.com/java/util/NavigableSet.html) implementation based on a [TreeMap](http://docs.google.com/java/util/TreeMap.html). |
| class | [**Vector<E>**](http://docs.google.com/java/util/Vector.html)            The Vector class implements a growable array of objects. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) | |
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| Classes in [java.util.concurrent](http://docs.google.com/java/util/concurrent/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**ConcurrentSkipListMap<K,V>**](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html)            A scalable concurrent [ConcurrentNavigableMap](http://docs.google.com/java/util/concurrent/ConcurrentNavigableMap.html) implementation. |
| class | [**ConcurrentSkipListSet<E>**](http://docs.google.com/java/util/concurrent/ConcurrentSkipListSet.html)            A scalable concurrent [NavigableSet](http://docs.google.com/java/util/NavigableSet.html) implementation based on a [ConcurrentSkipListMap](http://docs.google.com/java/util/concurrent/ConcurrentSkipListMap.html). |
| class | [**CopyOnWriteArrayList<E>**](http://docs.google.com/java/util/concurrent/CopyOnWriteArrayList.html)            A thread-safe variant of [ArrayList](http://docs.google.com/java/util/ArrayList.html) in which all mutative operations (add, set, and so on) are implemented by making a fresh copy of the underlying array. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.util.jar](http://docs.google.com/java/util/jar/package-summary.html) | |
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| Classes in [java.util.jar](http://docs.google.com/java/util/jar/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**Attributes**](http://docs.google.com/java/util/jar/Attributes.html)            The Attributes class maps Manifest attribute names to associated string values. |
| class | [**JarEntry**](http://docs.google.com/java/util/jar/JarEntry.html)            This class is used to represent a JAR file entry. |
| class | [**Manifest**](http://docs.google.com/java/util/jar/Manifest.html)            The Manifest class is used to maintain Manifest entry names and their associated Attributes. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [java.util.zip](http://docs.google.com/java/util/zip/package-summary.html) | |
| --- | --- |

| Classes in [java.util.zip](http://docs.google.com/java/util/zip/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**ZipEntry**](http://docs.google.com/java/util/zip/ZipEntry.html)            This class is used to represent a ZIP file entry. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.activation](http://docs.google.com/javax/activation/package-summary.html) | |
| --- | --- |

| Classes in [javax.activation](http://docs.google.com/javax/activation/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**ActivationDataFlavor**](http://docs.google.com/javax/activation/ActivationDataFlavor.html)            The ActivationDataFlavor class is a special subclass of java.awt.datatransfer.DataFlavor. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.crypto](http://docs.google.com/javax/crypto/package-summary.html) | |
| --- | --- |

| Classes in [javax.crypto](http://docs.google.com/javax/crypto/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**Mac**](http://docs.google.com/javax/crypto/Mac.html)            This class provides the functionality of a "Message Authentication Code" (MAC) algorithm. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.management](http://docs.google.com/javax/management/package-summary.html) | |
| --- | --- |

| Subinterfaces of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.management](http://docs.google.com/javax/management/package-summary.html) | |
| --- | --- |
| interface | [**Descriptor**](http://docs.google.com/javax/management/Descriptor.html)            Additional metadata for a JMX element. |

| Classes in [javax.management](http://docs.google.com/javax/management/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**AttributeList**](http://docs.google.com/javax/management/AttributeList.html)            Represents a list of values for attributes of an MBean. |
| class | [**ImmutableDescriptor**](http://docs.google.com/javax/management/ImmutableDescriptor.html)            An immutable descriptor. |
| class | [**MBeanAttributeInfo**](http://docs.google.com/javax/management/MBeanAttributeInfo.html)            Describes an MBean attribute exposed for management. |
| class | [**MBeanConstructorInfo**](http://docs.google.com/javax/management/MBeanConstructorInfo.html)            Describes a constructor exposed by an MBean. |
| class | [**MBeanInfo**](http://docs.google.com/javax/management/MBeanInfo.html)            Describes the management interface exposed by an MBean; that is, the set of attributes and operations which are available for management operations. |
| class | [**MBeanNotificationInfo**](http://docs.google.com/javax/management/MBeanNotificationInfo.html)            The MBeanNotificationInfo class is used to describe the characteristics of the different notification instances emitted by an MBean, for a given Java class of notification. |
| class | [**MBeanOperationInfo**](http://docs.google.com/javax/management/MBeanOperationInfo.html)            Describes a management operation exposed by an MBean. |
| class | [**MBeanParameterInfo**](http://docs.google.com/javax/management/MBeanParameterInfo.html)            Describes an argument of an operation exposed by an MBean. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.management.modelmbean](http://docs.google.com/javax/management/modelmbean/package-summary.html) | |
| --- | --- |

| Classes in [javax.management.modelmbean](http://docs.google.com/javax/management/modelmbean/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**DescriptorSupport**](http://docs.google.com/javax/management/modelmbean/DescriptorSupport.html)            This class represents the metadata set for a ModelMBean element. |
| class | [**ModelMBeanAttributeInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanAttributeInfo.html)            The ModelMBeanAttributeInfo object describes an attribute of the ModelMBean. |
| class | [**ModelMBeanConstructorInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanConstructorInfo.html)            The ModelMBeanConstructorInfo object describes a constructor of the ModelMBean. |
| class | [**ModelMBeanInfoSupport**](http://docs.google.com/javax/management/modelmbean/ModelMBeanInfoSupport.html)            This class represents the meta data for ModelMBeans. |
| class | [**ModelMBeanNotificationInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanNotificationInfo.html)            The ModelMBeanNotificationInfo object describes a notification emitted by a ModelMBean. |
| class | [**ModelMBeanOperationInfo**](http://docs.google.com/javax/management/modelmbean/ModelMBeanOperationInfo.html)            The ModelMBeanOperationInfo object describes a management operation of the ModelMBean. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.management.openmbean](http://docs.google.com/javax/management/openmbean/package-summary.html) | |
| --- | --- |

| Classes in [javax.management.openmbean](http://docs.google.com/javax/management/openmbean/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**OpenMBeanAttributeInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanAttributeInfoSupport.html)            Describes an attribute of an open MBean. |
| class | [**OpenMBeanConstructorInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanConstructorInfoSupport.html)            Describes a constructor of an Open MBean. |
| class | [**OpenMBeanInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanInfoSupport.html)            The OpenMBeanInfoSupport class describes the management information of an *open MBean*: it is a subclass of [MBeanInfo](http://docs.google.com/javax/management/MBeanInfo.html), and it implements the [OpenMBeanInfo](http://docs.google.com/javax/management/openmbean/OpenMBeanInfo.html) interface. |
| class | [**OpenMBeanOperationInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanOperationInfoSupport.html)            Describes an operation of an Open MBean. |
| class | [**OpenMBeanParameterInfoSupport**](http://docs.google.com/javax/management/openmbean/OpenMBeanParameterInfoSupport.html)            Describes a parameter used in one or more operations or constructors of an open MBean. |
| class | [**TabularDataSupport**](http://docs.google.com/javax/management/openmbean/TabularDataSupport.html)            The TabularDataSupport class is the *open data* class which implements the TabularData and the Map interfaces, and which is internally based on a hash map data structure. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.management.relation](http://docs.google.com/javax/management/relation/package-summary.html) | |
| --- | --- |

| Classes in [javax.management.relation](http://docs.google.com/javax/management/relation/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**RoleList**](http://docs.google.com/javax/management/relation/RoleList.html)            A RoleList represents a list of roles (Role objects). |
| class | [**RoleUnresolvedList**](http://docs.google.com/javax/management/relation/RoleUnresolvedList.html)            A RoleUnresolvedList represents a list of RoleUnresolved objects, representing roles not retrieved from a relation due to a problem encountered when trying to access (read or write) the roles. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.naming](http://docs.google.com/javax/naming/package-summary.html) | |
| --- | --- |

| Subinterfaces of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.naming](http://docs.google.com/javax/naming/package-summary.html) | |
| --- | --- |
| interface | [**Name**](http://docs.google.com/javax/naming/Name.html)            The Name interface represents a generic name -- an ordered sequence of components. |

| Classes in [javax.naming](http://docs.google.com/javax/naming/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**CompositeName**](http://docs.google.com/javax/naming/CompositeName.html)            This class represents a composite name -- a sequence of component names spanning multiple namespaces. |
| class | [**CompoundName**](http://docs.google.com/javax/naming/CompoundName.html)            This class represents a compound name -- a name from a hierarchical name space. |
| class | [**LinkRef**](http://docs.google.com/javax/naming/LinkRef.html)            This class represents a Reference whose contents is a name, called the link name, that is bound to an atomic name in a context. |
| class | [**Reference**](http://docs.google.com/javax/naming/Reference.html)            This class represents a reference to an object that is found outside of the naming/directory system. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.naming.directory](http://docs.google.com/javax/naming/directory/package-summary.html) | |
| --- | --- |

| Subinterfaces of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.naming.directory](http://docs.google.com/javax/naming/directory/package-summary.html) | |
| --- | --- |
| interface | [**Attribute**](http://docs.google.com/javax/naming/directory/Attribute.html)            This interface represents an attribute associated with a named object. |
| interface | [**Attributes**](http://docs.google.com/javax/naming/directory/Attributes.html)            This interface represents a collection of attributes. |

| Classes in [javax.naming.directory](http://docs.google.com/javax/naming/directory/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**BasicAttribute**](http://docs.google.com/javax/naming/directory/BasicAttribute.html)            This class provides a basic implementation of the Attribute interface. |
| class | [**BasicAttributes**](http://docs.google.com/javax/naming/directory/BasicAttributes.html)            This class provides a basic implementation of the Attributes interface. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.naming.ldap](http://docs.google.com/javax/naming/ldap/package-summary.html) | |
| --- | --- |

| Classes in [javax.naming.ldap](http://docs.google.com/javax/naming/ldap/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**LdapName**](http://docs.google.com/javax/naming/ldap/LdapName.html)            This class represents a distinguished name as specified by [RFC 2253](http://ietf.org//rfc/rfc2253.txt). |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.print](http://docs.google.com/javax/print/package-summary.html) | |
| --- | --- |

| Classes in [javax.print](http://docs.google.com/javax/print/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html)            Class DocFlavor encapsulates an object that specifies the format in which print data is supplied to a [DocPrintJob](http://docs.google.com/javax/print/DocPrintJob.html). |
| static class | [**DocFlavor.BYTE\_ARRAY**](http://docs.google.com/javax/print/DocFlavor.BYTE_ARRAY.html)            Class DocFlavor.BYTE\_ARRAY provides predefined static constant DocFlavor objects for example doc flavors using a byte array (byte[]) as the print data representation class. |
| static class | [**DocFlavor.CHAR\_ARRAY**](http://docs.google.com/javax/print/DocFlavor.CHAR_ARRAY.html)            Class DocFlavor.CHAR\_ARRAY provides predefined static constant DocFlavor objects for example doc flavors using a character array (char[]) as the print data representation class. |
| static class | [**DocFlavor.INPUT\_STREAM**](http://docs.google.com/javax/print/DocFlavor.INPUT_STREAM.html)            Class DocFlavor.INPUT\_STREAM provides predefined static constant DocFlavor objects for example doc flavors using a byte stream ([java.io.InputStream](http://docs.google.com/java/io/InputStream.html)) as the print data representation class. |
| static class | [**DocFlavor.READER**](http://docs.google.com/javax/print/DocFlavor.READER.html)            Class DocFlavor.READER provides predefined static constant DocFlavor objects for example doc flavors using a character stream ([java.io.Reader](http://docs.google.com/java/io/Reader.html)) as the print data representation class. |
| static class | [**DocFlavor.SERVICE\_FORMATTED**](http://docs.google.com/javax/print/DocFlavor.SERVICE_FORMATTED.html)            Class DocFlavor.SERVICE\_FORMATTED provides predefined static constant DocFlavor objects for example doc flavors for service formatted print data. |
| static class | [**DocFlavor.STRING**](http://docs.google.com/javax/print/DocFlavor.STRING.html)            Class DocFlavor.STRING provides predefined static constant DocFlavor objects for example doc flavors using a string ([java.lang.String](http://docs.google.com/java/lang/String.html)) as the print data representation class. |
| static class | [**DocFlavor.URL**](http://docs.google.com/javax/print/DocFlavor.URL.html)            Class DocFlavor.URL provides predefined static constant DocFlavor objects. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.print.attribute](http://docs.google.com/javax/print/attribute/package-summary.html) | |
| --- | --- |

| Classes in [javax.print.attribute](http://docs.google.com/javax/print/attribute/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**DateTimeSyntax**](http://docs.google.com/javax/print/attribute/DateTimeSyntax.html)            Class DateTimeSyntax is an abstract base class providing the common implementation of all attributes whose value is a date and time. |
| class | [**EnumSyntax**](http://docs.google.com/javax/print/attribute/EnumSyntax.html)            Class EnumSyntax is an abstract base class providing the common implementation of all "type safe enumeration" objects. |
| class | [**IntegerSyntax**](http://docs.google.com/javax/print/attribute/IntegerSyntax.html)            Class IntegerSyntax is an abstract base class providing the common implementation of all attributes with integer values. |
| class | [**ResolutionSyntax**](http://docs.google.com/javax/print/attribute/ResolutionSyntax.html)            Class ResolutionSyntax is an abstract base class providing the common implementation of all attributes denoting a printer resolution. |
| class | [**SetOfIntegerSyntax**](http://docs.google.com/javax/print/attribute/SetOfIntegerSyntax.html)            Class SetOfIntegerSyntax is an abstract base class providing the common implementation of all attributes whose value is a set of nonnegative integers. |
| class | [**Size2DSyntax**](http://docs.google.com/javax/print/attribute/Size2DSyntax.html)            Class Size2DSyntax is an abstract base class providing the common implementation of all attributes denoting a size in two dimensions. |
| class | [**TextSyntax**](http://docs.google.com/javax/print/attribute/TextSyntax.html)            Class TextSyntax is an abstract base class providing the common implementation of all attributes whose value is a string. |
| class | [**URISyntax**](http://docs.google.com/javax/print/attribute/URISyntax.html)            Class URISyntax is an abstract base class providing the common implementation of all attributes whose value is a Uniform Resource Identifier (URI). |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.print.attribute.standard](http://docs.google.com/javax/print/attribute/standard/package-summary.html) | |
| --- | --- |

| Classes in [javax.print.attribute.standard](http://docs.google.com/javax/print/attribute/standard/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
| --- | --- |
| class | [**Chromaticity**](http://docs.google.com/javax/print/attribute/standard/Chromaticity.html)            Class Chromaticity is a printing attribute class, an enumeration, that specifies monochrome or color printing. |
| class | [**ColorSupported**](http://docs.google.com/javax/print/attribute/standard/ColorSupported.html)            Class ColorSupported is a printing attribute class, an enumeration, that identifies whether the device is capable of any type of color printing at all, including highlight color as well as full process color. |
| class | [**Compression**](http://docs.google.com/javax/print/attribute/standard/Compression.html)            Class Compression is a printing attribute class, an enumeration, that specifies how print data is compressed. |
| class | [**Copies**](http://docs.google.com/javax/print/attribute/standard/Copies.html)            Class Copies is an integer valued printing attribute class that specifies the number of copies to be printed. |
| class | [**CopiesSupported**](http://docs.google.com/javax/print/attribute/standard/CopiesSupported.html)            Class CopiesSupported is a printing attribute class, a set of integers, that gives the supported values for a [Copies](http://docs.google.com/javax/print/attribute/standard/Copies.html) attribute. |
| class | [**DateTimeAtCompleted**](http://docs.google.com/javax/print/attribute/standard/DateTimeAtCompleted.html)            Class DateTimeAtCompleted is a printing attribute class, a date-time attribute, that indicates the date and time at which the Print Job completed (or was canceled or aborted). |
| class | [**DateTimeAtCreation**](http://docs.google.com/javax/print/attribute/standard/DateTimeAtCreation.html)            Class DateTimeAtCreation is a printing attribute class, a date-time attribute, that indicates the date and time at which the Print Job was created. |
| class | [**DateTimeAtProcessing**](http://docs.google.com/javax/print/attribute/standard/DateTimeAtProcessing.html)            Class DateTimeAtProcessing is a printing attribute class, a date-time attribute, that indicates the date and time at which the Print Job first began processing. |
| class | [**Destination**](http://docs.google.com/javax/print/attribute/standard/Destination.html)            Class Destination is a printing attribute class, a URI, that is used to indicate an alternate destination for the spooled printer formatted data. |
| class | [**DocumentName**](http://docs.google.com/javax/print/attribute/standard/DocumentName.html)            Class DocumentName is a printing attribute class, a text attribute, that specifies the name of a document. |
| class | [**Fidelity**](http://docs.google.com/javax/print/attribute/standard/Fidelity.html)            Class Fidelity is a printing attribute class, an enumeration, that indicates whether total fidelity to client supplied print request attributes is required. |
| class | [**Finishings**](http://docs.google.com/javax/print/attribute/standard/Finishings.html)            Class Finishings is a printing attribute class, an enumeration, that identifies whether the printer applies a finishing operation of some kind of binding to each copy of each printed document in the job. |
| class | [**JobHoldUntil**](http://docs.google.com/javax/print/attribute/standard/JobHoldUntil.html)            Class JobHoldUntil is a printing attribute class, a date-time attribute, that specifies the exact date and time at which the job must become a candidate for printing. |
| class | [**JobImpressions**](http://docs.google.com/javax/print/attribute/standard/JobImpressions.html)            Class JobImpressions is an integer valued printing attribute class that specifies the total size in number of impressions of the document(s) being submitted. |
| class | [**JobImpressionsCompleted**](http://docs.google.com/javax/print/attribute/standard/JobImpressionsCompleted.html)            Class JobImpressionsCompleted is an integer valued printing attribute class that specifies the number of impressions completed for the job so far. |
| class | [**JobImpressionsSupported**](http://docs.google.com/javax/print/attribute/standard/JobImpressionsSupported.html)            Class JobImpressionsSupported is a printing attribute class, a set of integers, that gives the supported values for a [JobImpressions](http://docs.google.com/javax/print/attribute/standard/JobImpressions.html) attribute. |
| class | [**JobKOctets**](http://docs.google.com/javax/print/attribute/standard/JobKOctets.html)            Class JobKOctets is an integer valued printing attribute class that specifies the total size of the document(s) in K octets, i.e., in units of 1024 octets requested to be processed in the job. |
| class | [**JobKOctetsProcessed**](http://docs.google.com/javax/print/attribute/standard/JobKOctetsProcessed.html)            Class JobKOctetsProcessed is an integer valued printing attribute class that specifies the total number of print data octets processed so far in K octets, i.e., in units of 1024 octets. |
| class | [**JobKOctetsSupported**](http://docs.google.com/javax/print/attribute/standard/JobKOctetsSupported.html)            Class JobKOctetsSupported is a printing attribute class, a set of integers, that gives the supported values for a [JobKOctets](http://docs.google.com/javax/print/attribute/standard/JobKOctets.html) attribute. |
| class | [**JobMediaSheets**](http://docs.google.com/javax/print/attribute/standard/JobMediaSheets.html)            Class JobMediaSheets is an integer valued printing attribute class that specifies the total number of media sheets to be produced for this job. |
| class | [**JobMediaSheetsCompleted**](http://docs.google.com/javax/print/attribute/standard/JobMediaSheetsCompleted.html)            Class JobMediaSheetsCompleted is an integer valued printing attribute class that specifies the number of media sheets which have completed marking and stacking for the entire job so far, whether those sheets have been processed on one side or on both. |
| class | [**JobMediaSheetsSupported**](http://docs.google.com/javax/print/attribute/standard/JobMediaSheetsSupported.html)            Class JobMediaSheetsSupported is a printing attribute class, a set of integers, that gives the supported values for a [JobMediaSheets](http://docs.google.com/javax/print/attribute/standard/JobMediaSheets.html) attribute. |
| class | [**JobMessageFromOperator**](http://docs.google.com/javax/print/attribute/standard/JobMessageFromOperator.html)            Class JobMessageFromOperator is a printing attribute class, a text attribute, that provides a message from an operator, system administrator, or "intelligent" process to indicate to the end user the reasons for modification or other management action taken on a job. |
| class | [**JobName**](http://docs.google.com/javax/print/attribute/standard/JobName.html)            Class JobName is a printing attribute class, a text attribute, that specifies the name of a print job. |
| class | [**JobOriginatingUserName**](http://docs.google.com/javax/print/attribute/standard/JobOriginatingUserName.html)            Class JobOriginatingUserName is a printing attribute class, a text attribute, that contains the name of the end user that submitted the print job. |
| class | [**JobPriority**](http://docs.google.com/javax/print/attribute/standard/JobPriority.html)            Class JobPriority is an integer valued printing attribute class that specifies a print job's priority. |
| class | [**JobPrioritySupported**](http://docs.google.com/javax/print/attribute/standard/JobPrioritySupported.html)            Class JobPrioritySupported is an integer valued printing attribute class that specifies whether a Print Service instance supports the [JobPriority](http://docs.google.com/javax/print/attribute/standard/JobPriority.html) attribute and the number of different job priority levels supported. |
| class | [**JobSheets**](http://docs.google.com/javax/print/attribute/standard/JobSheets.html)            Class JobSheets is a printing attribute class, an enumeration, that determines which job start and end sheets, if any, must be printed with a job. |
| class | [**JobState**](http://docs.google.com/javax/print/attribute/standard/JobState.html)            JobState is a printing attribute class, an enumeration, that identifies the current state of a print job. |
| class | [**JobStateReason**](http://docs.google.com/javax/print/attribute/standard/JobStateReason.html)            Class JobStateReason is a printing attribute class, an enumeration, that provides additional information about the job's current state, i.e., information that augments the value of the job's [JobState](http://docs.google.com/javax/print/attribute/standard/JobState.html) attribute. |
| class | [**JobStateReasons**](http://docs.google.com/javax/print/attribute/standard/JobStateReasons.html)            Class JobStateReasons is a printing attribute class, a set of enumeration values, that provides additional information about the job's current state, i.e., information that augments the value of the job's [JobState](http://docs.google.com/javax/print/attribute/standard/JobState.html) attribute. |
| class | [**Media**](http://docs.google.com/javax/print/attribute/standard/Media.html)            Class Media is a printing attribute class that specifies the medium on which to print. |
| class | [**MediaName**](http://docs.google.com/javax/print/attribute/standard/MediaName.html)            Class MediaName is a subclass of Media, a printing attribute class (an enumeration) that specifies the media for a print job as a name. |
| class | [**MediaSize**](http://docs.google.com/javax/print/attribute/standard/MediaSize.html)            Class MediaSize is a two-dimensional size valued printing attribute class that indicates the dimensions of the medium in a portrait orientation, with the X dimension running along the bottom edge and the Y dimension running along the left edge. |
| class | [**MediaSizeName**](http://docs.google.com/javax/print/attribute/standard/MediaSizeName.html)            Class MediaSizeName is a subclass of Media. |
| class | [**MediaTray**](http://docs.google.com/javax/print/attribute/standard/MediaTray.html)            Class MediaTray is a subclass of Media. |
| class | [**MultipleDocumentHandling**](http://docs.google.com/javax/print/attribute/standard/MultipleDocumentHandling.html)            Class MultipleDocumentHandling is a printing attribute class, an enumeration, that controls finishing operations and the placement of one or more print-stream pages into impressions and onto media sheets. |
| class | [**NumberOfDocuments**](http://docs.google.com/javax/print/attribute/standard/NumberOfDocuments.html)            Class NumberOfDocuments is an integer valued printing attribute that indicates the number of individual docs the printer has accepted for this job, regardless of whether the docs' print data has reached the printer or not. |
| class | [**NumberOfInterveningJobs**](http://docs.google.com/javax/print/attribute/standard/NumberOfInterveningJobs.html)            Class NumberOfInterveningJobs is an integer valued printing attribute that indicates the number of jobs that are ahead of this job in the relative chronological order of expected time to complete (i.e., the current scheduled order). |
| class | [**NumberUp**](http://docs.google.com/javax/print/attribute/standard/NumberUp.html)            Class NumberUp is an integer valued printing attribute class that specifies the number of print-stream pages to impose upon a single side of an instance of a selected medium. |
| class | [**NumberUpSupported**](http://docs.google.com/javax/print/attribute/standard/NumberUpSupported.html)            Class NumberUpSupported is a printing attribute class, a set of integers, that gives the supported values for a [NumberUp](http://docs.google.com/javax/print/attribute/standard/NumberUp.html) attribute. |
| class | [**OrientationRequested**](http://docs.google.com/javax/print/attribute/standard/OrientationRequested.html)            Class OrientationRequested is a printing attribute class, an enumeration, that indicates the desired orientation for printed print-stream pages; it does not describe the orientation of the client-supplied print-stream pages. |
| class | [**OutputDeviceAssigned**](http://docs.google.com/javax/print/attribute/standard/OutputDeviceAssigned.html)            Class OutputDeviceAssigned is a printing attribute class, a text attribute, that identifies the output device to which the service has assigned this job. |
| class | [**PageRanges**](http://docs.google.com/javax/print/attribute/standard/PageRanges.html)            Class PageRanges is a printing attribute class, a set of integers, that identifies the range(s) of print-stream pages that the Printer object uses for each copy of each document which are to be printed. |
| class | [**PagesPerMinute**](http://docs.google.com/javax/print/attribute/standard/PagesPerMinute.html)            Class PagesPerMinute is an integer valued printing attribute that indicates the nominal number of pages per minute to the nearest whole number which may be generated by this printer (e.g., simplex, black-and-white). |
| class | [**PagesPerMinuteColor**](http://docs.google.com/javax/print/attribute/standard/PagesPerMinuteColor.html)            Class PagesPerMinuteColor is an integer valued printing attribute that indicates the nominal number of pages per minute to the nearest whole number which may be generated by this printer when printing color (e.g., simplex, color). |
| class | [**PDLOverrideSupported**](http://docs.google.com/javax/print/attribute/standard/PDLOverrideSupported.html)            Class PDLOverrideSupported is a printing attribute class, an enumeration, that expresses the printer's ability to attempt to override processing instructions embedded in documents' print data with processing instructions specified as attributes outside the print data. |
| class | [**PresentationDirection**](http://docs.google.com/javax/print/attribute/standard/PresentationDirection.html)            Class PresentationDirection is a printing attribute class, an enumeration, that is used in conjunction with the [NumberUp](http://docs.google.com/javax/print/attribute/standard/NumberUp.html) attribute to indicate the layout of multiple print-stream pages to impose upon a single side of an instance of a selected medium. |
| class | [**PrinterInfo**](http://docs.google.com/javax/print/attribute/standard/PrinterInfo.html)            Class PrinterInfo is a printing attribute class, a text attribute, that provides descriptive information about a printer. |
| class | [**PrinterIsAcceptingJobs**](http://docs.google.com/javax/print/attribute/standard/PrinterIsAcceptingJobs.html)            Class PrinterIsAcceptingJobs is a printing attribute class, an enumeration, that indicates whether the printer is currently able to accept jobs. |
| class | [**PrinterLocation**](http://docs.google.com/javax/print/attribute/standard/PrinterLocation.html)            Class PrinterLocation is a printing attribute class, a text attribute, that identifies the location of the device. |
| class | [**PrinterMakeAndModel**](http://docs.google.com/javax/print/attribute/standard/PrinterMakeAndModel.html)            Class PrinterMakeAndModel is a printing attribute class, a text attribute, that the make and model of the printer. |
| class | [**PrinterMessageFromOperator**](http://docs.google.com/javax/print/attribute/standard/PrinterMessageFromOperator.html)            Class PrinterMessageFromOperator is a printing attribute class, a text attribute, that provides a message from an operator, system administrator, or "intelligent" process to indicate to the end user information about or status of the printer, such as why it is unavailable or when it is expected to be available. |
| class | [**PrinterMoreInfo**](http://docs.google.com/javax/print/attribute/standard/PrinterMoreInfo.html)            Class PrinterMoreInfo is a printing attribute class, a URI, that is used to obtain more information about this specific printer. |
| class | [**PrinterMoreInfoManufacturer**](http://docs.google.com/javax/print/attribute/standard/PrinterMoreInfoManufacturer.html)            Class PrinterMoreInfoManufacturer is a printing attribute class, a URI, that is used to obtain more information about this type of device. |
| class | [**PrinterName**](http://docs.google.com/javax/print/attribute/standard/PrinterName.html)            Class PrinterName is a printing attribute class, a text attribute, that specifies the name of a printer. |
| class | [**PrinterResolution**](http://docs.google.com/javax/print/attribute/standard/PrinterResolution.html)            Class PrinterResolution is a printing attribute class that specifies an exact resolution supported by a printer or to be used for a print job. |
| class | [**PrinterState**](http://docs.google.com/javax/print/attribute/standard/PrinterState.html)            Class PrinterState is a printing attribute class, an enumeration, that identifies the current state of a printer. |
| class | [**PrinterStateReason**](http://docs.google.com/javax/print/attribute/standard/PrinterStateReason.html)            Class PrinterStateReason is a printing attribute class, an enumeration, that provides additional information about the printer's current state, i.e., information that augments the value of the printer's [PrinterState](http://docs.google.com/javax/print/attribute/standard/PrinterState.html) attribute. |
| class | [**PrinterStateReasons**](http://docs.google.com/javax/print/attribute/standard/PrinterStateReasons.html)            Class PrinterStateReasons is a printing attribute class, a set of enumeration values, that provides additional information about the printer's current state, i.e., information that augments the value of the printer's [PrinterState](http://docs.google.com/javax/print/attribute/standard/PrinterState.html) attribute. |
| class | [**PrinterURI**](http://docs.google.com/javax/print/attribute/standard/PrinterURI.html)            Class PrinterURI is a printing attribute class, a URI, that specifies the globally unique name of a printer. |
| class | [**PrintQuality**](http://docs.google.com/javax/print/attribute/standard/PrintQuality.html)            Class PrintQuality is a printing attribute class, an enumeration, that specifies the print quality that the printer uses for the job. |
| class | [**QueuedJobCount**](http://docs.google.com/javax/print/attribute/standard/QueuedJobCount.html)            Class QueuedJobCount is an integer valued printing attribute that indicates the number of jobs in the printer whose [JobState](http://docs.google.com/javax/print/attribute/standard/JobState.html) is either PENDING, PENDING\_HELD, PROCESSING, or PROCESSING\_STOPPED. |
| class | [**ReferenceUriSchemesSupported**](http://docs.google.com/javax/print/attribute/standard/ReferenceUriSchemesSupported.html)            Class ReferenceUriSchemesSupported is a printing attribute class an enumeration, that indicates a "URI scheme," such as "http:" or "ftp:", that a printer can use to retrieve print data stored at a URI location. |
| class | [**RequestingUserName**](http://docs.google.com/javax/print/attribute/standard/RequestingUserName.html)            Class RequestingUserName is a printing attribute class, a text attribute, that specifies the name of the end user that submitted the print job. |
| class | [**Severity**](http://docs.google.com/javax/print/attribute/standard/Severity.html)            Class Severity is a printing attribute class, an enumeration, that denotes the severity of a [PrinterStateReason](http://docs.google.com/javax/print/attribute/standard/PrinterStateReason.html) attribute. |
| class | [**SheetCollate**](http://docs.google.com/javax/print/attribute/standard/SheetCollate.html)            Class SheetCollate is a printing attribute class, an enumeration, that specifies whether or not the media sheets of each copy of each printed document in a job are to be in sequence, when multiple copies of the document are specified by the [Copies](http://docs.google.com/javax/print/attribute/standard/Copies.html) attribute. |
| class | [**Sides**](http://docs.google.com/javax/print/attribute/standard/Sides.html)            Class Sides is a printing attribute class, an enumeration, that specifies how print-stream pages are to be imposed upon the sides of an instance of a selected medium, i.e., an impression. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.sound.midi](http://docs.google.com/javax/sound/midi/package-summary.html) | |
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| Classes in [javax.sound.midi](http://docs.google.com/javax/sound/midi/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**MetaMessage**](http://docs.google.com/javax/sound/midi/MetaMessage.html)            A MetaMessage is a [MidiMessage](http://docs.google.com/javax/sound/midi/MidiMessage.html) that is not meaningful to synthesizers, but that can be stored in a MIDI file and interpreted by a sequencer program. |
| class | [**MidiMessage**](http://docs.google.com/javax/sound/midi/MidiMessage.html)            MidiMessage is the base class for MIDI messages. |
| class | [**ShortMessage**](http://docs.google.com/javax/sound/midi/ShortMessage.html)            A ShortMessage contains a MIDI message that has at most two data bytes following its status byte. |
| class | [**SysexMessage**](http://docs.google.com/javax/sound/midi/SysexMessage.html)            A SysexMessage object represents a MIDI system exclusive message. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.sql.rowset](http://docs.google.com/javax/sql/rowset/package-summary.html) | |
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| Classes in [javax.sql.rowset](http://docs.google.com/javax/sql/rowset/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**BaseRowSet**](http://docs.google.com/javax/sql/rowset/BaseRowSet.html)            An abstract class providing a RowSet object with its basic functionality. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.sql.rowset.serial](http://docs.google.com/javax/sql/rowset/serial/package-summary.html) | |
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| Classes in [javax.sql.rowset.serial](http://docs.google.com/javax/sql/rowset/serial/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**SerialArray**](http://docs.google.com/javax/sql/rowset/serial/SerialArray.html)            A serialized version of an Array object, which is the mapping in the Java programming language of an SQL ARRAY value. |
| class | [**SerialBlob**](http://docs.google.com/javax/sql/rowset/serial/SerialBlob.html)            A serialized mapping in the Java programming language of an SQL BLOB value. |
| class | [**SerialClob**](http://docs.google.com/javax/sql/rowset/serial/SerialClob.html)            A serialized mapping in the Java programming language of an SQL CLOB value. |
| class | [**SerialDatalink**](http://docs.google.com/javax/sql/rowset/serial/SerialDatalink.html)            A serialized mapping in the Java programming language of an SQL DATALINK value. |
| class | [**SerialJavaObject**](http://docs.google.com/javax/sql/rowset/serial/SerialJavaObject.html)            A serializable mapping in the Java programming language of an SQL JAVA\_OBJECT value. |
| class | [**SerialRef**](http://docs.google.com/javax/sql/rowset/serial/SerialRef.html)            A serialized mapping of a Ref object, which is the mapping in the Java programming language of an SQL REF value. |
| class | [**SerialStruct**](http://docs.google.com/javax/sql/rowset/serial/SerialStruct.html)            A serialized mapping in the Java programming language of an SQL structured type. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing](http://docs.google.com/javax/swing/package-summary.html) | |
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| Classes in [javax.swing](http://docs.google.com/javax/swing/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**AbstractAction**](http://docs.google.com/javax/swing/AbstractAction.html)            This class provides default implementations for the JFC Action interface. |
| class | [**DefaultListSelectionModel**](http://docs.google.com/javax/swing/DefaultListSelectionModel.html)            Default data model for list selections. |
| class | [**GrayFilter**](http://docs.google.com/javax/swing/GrayFilter.html)            An image filter that "disables" an image by turning it into a grayscale image, and brightening the pixels in the image. |
| static class | [**JTree.DynamicUtilTreeNode**](http://docs.google.com/javax/swing/JTree.DynamicUtilTreeNode.html)            DynamicUtilTreeNode can wrap vectors/hashtables/arrays/strings and create the appropriate children tree nodes as necessary. |
| protected static class | [**JTree.EmptySelectionModel**](http://docs.google.com/javax/swing/JTree.EmptySelectionModel.html)            EmptySelectionModel is a TreeSelectionModel that does not allow anything to be selected. |
| class | [**UIDefaults**](http://docs.google.com/javax/swing/UIDefaults.html)            A table of defaults for Swing components. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing.plaf](http://docs.google.com/javax/swing/plaf/package-summary.html) | |
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| Classes in [javax.swing.plaf](http://docs.google.com/javax/swing/plaf/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**DimensionUIResource**](http://docs.google.com/javax/swing/plaf/DimensionUIResource.html) |
| class | [**InsetsUIResource**](http://docs.google.com/javax/swing/plaf/InsetsUIResource.html) |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing.plaf.basic](http://docs.google.com/javax/swing/plaf/basic/package-summary.html) | |
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| Classes in [javax.swing.plaf.basic](http://docs.google.com/javax/swing/plaf/basic/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| protected  class | [**BasicDesktopPaneUI.CloseAction**](http://docs.google.com/javax/swing/plaf/basic/BasicDesktopPaneUI.CloseAction.html)            Handles closing an internal frame. |
| protected  class | [**BasicDesktopPaneUI.MaximizeAction**](http://docs.google.com/javax/swing/plaf/basic/BasicDesktopPaneUI.MaximizeAction.html)            Handles maximizing an internal frame. |
| protected  class | [**BasicDesktopPaneUI.MinimizeAction**](http://docs.google.com/javax/swing/plaf/basic/BasicDesktopPaneUI.MinimizeAction.html)            Handles minimizing an internal frame. |
| protected  class | [**BasicDesktopPaneUI.NavigateAction**](http://docs.google.com/javax/swing/plaf/basic/BasicDesktopPaneUI.NavigateAction.html)            Handles navigating to the next internal frame. |
| protected  class | [**BasicDesktopPaneUI.OpenAction**](http://docs.google.com/javax/swing/plaf/basic/BasicDesktopPaneUI.OpenAction.html)            Handles restoring a minimized or maximized internal frame. |
| protected  class | [**BasicFileChooserUI.ApproveSelectionAction**](http://docs.google.com/javax/swing/plaf/basic/BasicFileChooserUI.ApproveSelectionAction.html)            Responds to an Open or Save request |
| protected  class | [**BasicFileChooserUI.CancelSelectionAction**](http://docs.google.com/javax/swing/plaf/basic/BasicFileChooserUI.CancelSelectionAction.html)            Responds to a cancel request. |
| protected  class | [**BasicFileChooserUI.ChangeToParentDirectoryAction**](http://docs.google.com/javax/swing/plaf/basic/BasicFileChooserUI.ChangeToParentDirectoryAction.html) |
| protected  class | [**BasicFileChooserUI.GoHomeAction**](http://docs.google.com/javax/swing/plaf/basic/BasicFileChooserUI.GoHomeAction.html)            Acts on the "home" key event or equivalent event. |
| protected  class | [**BasicFileChooserUI.NewFolderAction**](http://docs.google.com/javax/swing/plaf/basic/BasicFileChooserUI.NewFolderAction.html)            Creates a new folder. |
| protected  class | [**BasicFileChooserUI.UpdateAction**](http://docs.google.com/javax/swing/plaf/basic/BasicFileChooserUI.UpdateAction.html)            Rescans the files in the current directory |
| class | [**BasicInternalFrameTitlePane.CloseAction**](http://docs.google.com/javax/swing/plaf/basic/BasicInternalFrameTitlePane.CloseAction.html)            This class should be treated as a "protected" inner class. |
| class | [**BasicInternalFrameTitlePane.IconifyAction**](http://docs.google.com/javax/swing/plaf/basic/BasicInternalFrameTitlePane.IconifyAction.html)            This class should be treated as a "protected" inner class. |
| class | [**BasicInternalFrameTitlePane.MaximizeAction**](http://docs.google.com/javax/swing/plaf/basic/BasicInternalFrameTitlePane.MaximizeAction.html)            This class should be treated as a "protected" inner class. |
| class | [**BasicInternalFrameTitlePane.MoveAction**](http://docs.google.com/javax/swing/plaf/basic/BasicInternalFrameTitlePane.MoveAction.html)            This class should be treated as a "protected" inner class. |
| class | [**BasicInternalFrameTitlePane.RestoreAction**](http://docs.google.com/javax/swing/plaf/basic/BasicInternalFrameTitlePane.RestoreAction.html)            This class should be treated as a "protected" inner class. |
| class | [**BasicInternalFrameTitlePane.SizeAction**](http://docs.google.com/javax/swing/plaf/basic/BasicInternalFrameTitlePane.SizeAction.html)            This class should be treated as a "protected" inner class. |
| class | [**BasicSliderUI.ActionScroller**](http://docs.google.com/javax/swing/plaf/basic/BasicSliderUI.ActionScroller.html)            As of Java 2 platform v1.3 this undocumented class is no longer used. |
| static class | [**BasicTextUI.BasicCaret**](http://docs.google.com/javax/swing/plaf/basic/BasicTextUI.BasicCaret.html) |
| class | [**BasicTreeUI.TreeCancelEditingAction**](http://docs.google.com/javax/swing/plaf/basic/BasicTreeUI.TreeCancelEditingAction.html)            ActionListener that invokes cancelEditing when action performed. |
| class | [**BasicTreeUI.TreeHomeAction**](http://docs.google.com/javax/swing/plaf/basic/BasicTreeUI.TreeHomeAction.html)            TreeHomeAction is used to handle end/home actions. |
| class | [**BasicTreeUI.TreeIncrementAction**](http://docs.google.com/javax/swing/plaf/basic/BasicTreeUI.TreeIncrementAction.html)            TreeIncrementAction is used to handle up/down actions. |
| class | [**BasicTreeUI.TreePageAction**](http://docs.google.com/javax/swing/plaf/basic/BasicTreeUI.TreePageAction.html)            TreePageAction handles page up and page down events. |
| class | [**BasicTreeUI.TreeToggleAction**](http://docs.google.com/javax/swing/plaf/basic/BasicTreeUI.TreeToggleAction.html)            For the first selected row expandedness will be toggled. |
| class | [**BasicTreeUI.TreeTraverseAction**](http://docs.google.com/javax/swing/plaf/basic/BasicTreeUI.TreeTraverseAction.html)            TreeTraverseAction is the action used for left/right keys. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing.plaf.metal](http://docs.google.com/javax/swing/plaf/metal/package-summary.html) | |
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| Classes in [javax.swing.plaf.metal](http://docs.google.com/javax/swing/plaf/metal/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| protected  class | [**MetalFileChooserUI.DirectoryComboBoxAction**](http://docs.google.com/javax/swing/plaf/metal/MetalFileChooserUI.DirectoryComboBoxAction.html)            Acts when DirectoryComboBox has changed the selected item. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing.text](http://docs.google.com/javax/swing/text/package-summary.html) | |
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| Classes in [javax.swing.text](http://docs.google.com/javax/swing/text/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**DateFormatter**](http://docs.google.com/javax/swing/text/DateFormatter.html)            DateFormatter is an InternationalFormatter that does its formatting by way of an instance of java.text.DateFormat. |
| class | [**DefaultCaret**](http://docs.google.com/javax/swing/text/DefaultCaret.html)            A default implementation of Caret. |
| class | [**DefaultEditorKit**](http://docs.google.com/javax/swing/text/DefaultEditorKit.html)            This is the set of things needed by a text component to be a reasonably functioning editor for some *type* of text document. |
| static class | [**DefaultEditorKit.BeepAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.BeepAction.html)            Creates a beep. |
| static class | [**DefaultEditorKit.CopyAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.CopyAction.html)            Copies the selected region and place its contents into the system clipboard. |
| static class | [**DefaultEditorKit.CutAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.CutAction.html)            Cuts the selected region and place its contents into the system clipboard. |
| static class | [**DefaultEditorKit.DefaultKeyTypedAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.DefaultKeyTypedAction.html)            The action that is executed by default if a *key typed event* is received and there is no keymap entry. |
| static class | [**DefaultEditorKit.InsertBreakAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.InsertBreakAction.html)            Places a line/paragraph break into the document. |
| static class | [**DefaultEditorKit.InsertContentAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.InsertContentAction.html)            Places content into the associated document. |
| static class | [**DefaultEditorKit.InsertTabAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.InsertTabAction.html)            Places a tab character into the document. |
| static class | [**DefaultEditorKit.PasteAction**](http://docs.google.com/javax/swing/text/DefaultEditorKit.PasteAction.html)            Pastes the contents of the system clipboard into the selected region, or before the caret if nothing is selected. |
| class | [**DefaultFormatter**](http://docs.google.com/javax/swing/text/DefaultFormatter.html)            DefaultFormatter formats aribtrary objects. |
| class | [**EditorKit**](http://docs.google.com/javax/swing/text/EditorKit.html)            Establishes the set of things needed by a text component to be a reasonably functioning editor for some *type* of text content. |
| class | [**ElementIterator**](http://docs.google.com/javax/swing/text/ElementIterator.html)             ElementIterator, as the name suggests, iteratates over the Element tree. |
| class | [**GlyphView**](http://docs.google.com/javax/swing/text/GlyphView.html)            A GlyphView is a styled chunk of text that represents a view mapped over an element in the text model. |
| class | [**InternationalFormatter**](http://docs.google.com/javax/swing/text/InternationalFormatter.html)            InternationalFormatter extends DefaultFormatter, using an instance of java.text.Format to handle the conversion to a String, and the conversion from a String. |
| class | [**LabelView**](http://docs.google.com/javax/swing/text/LabelView.html)            A LabelView is a styled chunk of text that represents a view mapped over an element in the text model. |
| class | [**MaskFormatter**](http://docs.google.com/javax/swing/text/MaskFormatter.html)            MaskFormatter is used to format and edit strings. |
| class | [**NumberFormatter**](http://docs.google.com/javax/swing/text/NumberFormatter.html)            NumberFormatter subclasses InternationalFormatter adding special behavior for numbers. |
| class | [**Segment**](http://docs.google.com/javax/swing/text/Segment.html)            A segment of a character array representing a fragment of text. |
| class | [**SimpleAttributeSet**](http://docs.google.com/javax/swing/text/SimpleAttributeSet.html)            A straightforward implementation of MutableAttributeSet using a hash table. |
| class | [**StyledEditorKit**](http://docs.google.com/javax/swing/text/StyledEditorKit.html)            This is the set of things needed by a text component to be a reasonably functioning editor for some *type* of text document. |
| static class | [**StyledEditorKit.AlignmentAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.AlignmentAction.html)            An action to set paragraph alignment. |
| static class | [**StyledEditorKit.BoldAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.BoldAction.html)            An action to toggle the bold attribute. |
| static class | [**StyledEditorKit.FontFamilyAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.FontFamilyAction.html)            An action to set the font family in the associated JEditorPane. |
| static class | [**StyledEditorKit.FontSizeAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.FontSizeAction.html)            An action to set the font size in the associated JEditorPane. |
| static class | [**StyledEditorKit.ForegroundAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.ForegroundAction.html)            An action to set foreground color. |
| static class | [**StyledEditorKit.ItalicAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.ItalicAction.html)            An action to toggle the italic attribute. |
| static class | [**StyledEditorKit.StyledTextAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.StyledTextAction.html)            An action that assumes it's being fired on a JEditorPane with a StyledEditorKit (or subclass) installed. |
| static class | [**StyledEditorKit.UnderlineAction**](http://docs.google.com/javax/swing/text/StyledEditorKit.UnderlineAction.html)            An action to toggle the underline attribute. |
| class | [**TextAction**](http://docs.google.com/javax/swing/text/TextAction.html)            An Action implementation useful for key bindings that are shared across a number of different text components. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing.text.html](http://docs.google.com/javax/swing/text/html/package-summary.html) | |
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| Classes in [javax.swing.text.html](http://docs.google.com/javax/swing/text/html/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**HTMLEditorKit**](http://docs.google.com/javax/swing/text/html/HTMLEditorKit.html)            The Swing JEditorPane text component supports different kinds of content via a plug-in mechanism called an EditorKit. |
| static class | [**HTMLEditorKit.HTMLTextAction**](http://docs.google.com/javax/swing/text/html/HTMLEditorKit.HTMLTextAction.html)            An abstract Action providing some convenience methods that may be useful in inserting HTML into an existing document. |
| static class | [**HTMLEditorKit.InsertHTMLTextAction**](http://docs.google.com/javax/swing/text/html/HTMLEditorKit.InsertHTMLTextAction.html)            InsertHTMLTextAction can be used to insert an arbitrary string of HTML into an existing HTML document. |
| class | [**InlineView**](http://docs.google.com/javax/swing/text/html/InlineView.html)            Displays the inline element styles based upon css attributes. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing.text.rtf](http://docs.google.com/javax/swing/text/rtf/package-summary.html) | |
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| Classes in [javax.swing.text.rtf](http://docs.google.com/javax/swing/text/rtf/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**RTFEditorKit**](http://docs.google.com/javax/swing/text/rtf/RTFEditorKit.html)            This is the default implementation of RTF editing functionality. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.swing.tree](http://docs.google.com/javax/swing/tree/package-summary.html) | |
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| Classes in [javax.swing.tree](http://docs.google.com/javax/swing/tree/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**DefaultMutableTreeNode**](http://docs.google.com/javax/swing/tree/DefaultMutableTreeNode.html)            A DefaultMutableTreeNode is a general-purpose node in a tree data structure. |
| class | [**DefaultTreeSelectionModel**](http://docs.google.com/javax/swing/tree/DefaultTreeSelectionModel.html)            Default implementation of TreeSelectionModel. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [javax.xml.datatype](http://docs.google.com/javax/xml/datatype/package-summary.html) | |
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| Classes in [javax.xml.datatype](http://docs.google.com/javax/xml/datatype/package-summary.html) that implement [Cloneable](http://docs.google.com/java/lang/Cloneable.html) | |
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| class | [**XMLGregorianCalendar**](http://docs.google.com/javax/xml/datatype/XMLGregorianCalendar.html)            Representation for W3C XML Schema 1.0 date/time datatypes. |

| Uses of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [org.ietf.jgss](http://docs.google.com/org/ietf/jgss/package-summary.html) | |
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| Subinterfaces of [Cloneable](http://docs.google.com/java/lang/Cloneable.html) in [org.ietf.jgss](http://docs.google.com/org/ietf/jgss/package-summary.html) | |
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| interface | [**GSSCredential**](http://docs.google.com/org/ietf/jgss/GSSCredential.html)            This interface encapsulates the GSS-API credentials for an entity. |

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | [**Class**](http://docs.google.com/java/lang/Cloneable.html) | **Use** | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PREV   NEXT | [**FRAMES**](http://docs.google.com/index.html?java/lang//class-useCloneable.html)    [**NO FRAMES**](http://docs.google.com/Cloneable.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

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