

# Java Documentation

Dr. Safwan Qasem

King Saud University

College of Computer and Information Sciences

Computer Science Department

# Java online documentation

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- Java provide a very big collection of ready-to-use classes to perform a very wide programming tasks:
  - ▣ String manipulation, Math computations, File I/O, Database access, Networking, Data transfer, ...
  - ▣ Graphical user interface building, 2D and 3D graphics, game development
  - ▣ ...
- In the scope of this course it is not possible to see all the classes and tools that may be needed by an advanced programmer.

# Java online documentation

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- In this presentation, we present the detailed on-line java documentation. A student should be able to:
  - ▣ Know what a specific, package, class or method does.
  - ▣ Search for any classes that may fit his specific programming needs.
  - ▣ Find all the available parameters and methods of a specific class.
  - ▣ Find the exact syntax of a method to be used.
  - ▣ ...

# Java technology Network

<http://www.oracle.com/technetwork/index.html>

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# Java technology Network

<http://www.oracle.com/technetwork/java/index.html>

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The screenshot shows the Oracle Java Technology Network website. At the top, there is the Oracle logo and navigation links for (Sign In/Register for Account | Help), United States, Communities, I am a..., I want to..., and a Secure Search bar. Below this is a menu with Products and Services, Downloads, Store, Support, Education, Partners, About, and Oracle Technology Network. The main content area features a large article titled "Working with the Mobile Sensor API" with a sub-headline "Learn how the Mobile Sensor API (JSR 256 for Java Platform, Micro Edition) enables Java MIDlets to talk to the physical and virtual sensors available on a device." To the right of the article is a "Software Downloads" section with "Top Downloads" (Java SE, Java EE, Java FX, Java ME, JDeveloper 11g and ADF, Enterprise Pack for Eclipse, NetBeans IDE) and "New Downloads" (LWUIT 1.4, JavaFX 1.3.1, Java SE 6 Update 21, JRockit 4.0, GlassFish Server 3.0.1). At the bottom, there are four columns: "Essential Links" (Java APIs, Technical Articles, New to Java, Java Certification & Training, Java Bug Database, Java Developer Newsletter, Events | JavaOne 2010), "Developer Spotlight" (Silicon Valley Code Camp, JavaOne Technical Keynote, Exploring the Technology Frontier with Ray Kurzweil and Java Technology Innovators), "Blogs" (RedFX: JavaFX Widget Library for GlassFish, Oracle Technology Network Live - Oracle OpenWorld, JavaOne and Oracle Develop Edition), and "Technologies" (Java SE, Java SE for Business, Java Embedded, Java EE, Java ME, Java Card, JavaFX).

# Java Documentation

<http://www.oracle.com/technetwork/java/api-141528.html>

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API Specifications - Windows Internet Explorer  
http://www.oracle.com/technetwork/java/api-141528.html

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Oracle Technology Network > Java

Java SE  
Java SE for Business  
Java Embedded  
Java EE  
Java ME  
JavaFX  
Java DB  
Web Tier  
Java Card

### API Specifications

Below is a list of technologies that have API specifications:

#### Standard Edition

- [Java SE 6](#)
- [J2SE 1.5.0](#)
- [J2SE 1.4.2](#)
- [J2SE 1.3.1](#)

#### Enterprise Edition

- [Java EE 6](#)
- [Java EE 5](#)
- [J2EE 1.4](#)
- [J2EE 1.3](#)
- [J2EE 1.2.1](#)

#### Micro Edition

- [Java ME](#)

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# Java Documentation

<http://www.oracle.com/technetwork/java/javase/documentation/api-jsp-136079.html>

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The screenshot shows a Windows Internet Explorer browser window displaying the Oracle Java SE APIs & Documentation page. The browser's address bar shows the URL: <http://www.oracle.com/technetwork/java/javase/documentation/api-jsp-136079.html>. The page features a navigation menu with tabs for Products and Services, Downloads, Store, Support, Education, Partners, and About. The main content area is titled "Java SE APIs & Documentation" and includes a sub-menu with "At a Glance", "Code", "API", "Tutorials", "Technical Articles", "White Papers", and "FAQs". The page lists documentation for Java SE APIs and JDK Programmer Guides, with links for various versions (7\*, 6, 5.0, 1.4.2, 1.4.0, 1.3.1, 1.3.0) and languages (English, Chinese, Japanese). A sidebar on the left lists navigation options like "Java SE", "Java SE for Business", "Java Embedded", "Java EE", "Java ME", "JavaFX", "Java DB", "Web Tier", and "Java Card". A right sidebar lists "Java SDKs and Tools" and "Java Resources". The bottom of the browser window shows the Windows taskbar with the system tray displaying the date and time: 1:21 AM, 10/6/2010.

# Java Documentation

## Programmer guide and tutorials

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Java SE Documentation - APIs & Documentation - Windows Internet Explorer

http://www.oracle.com/technetwork/java/javase/documentation/api-jsp-136079.html

Oracle Technology Network > Java > Java SE > Documentation

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### Java SE APIs & Documentation

At a Glance Code API **Tutorials** Technical Articles White Papers FAQs

#### Java SE APIs

This page lists the documentation for the Java Platform, Standard Edition, and the JDK. The more [general documentation page](#) provides links to the documentation for Java EE, Java ME, and other Java APIs and products. (Note the [Documentation Redistribution Policy](#).)

Core API Docs	JDK Programmer Guides
7* <a href="#">English</a>	7* <a href="#">English</a>
6 <a href="#">English, Chinese, Japanese</a>	6 <a href="#">English, Japanese</a>
5.0 <a href="#">English, Chinese, Japanese</a>	5.0 <a href="#">English, Japanese</a>
1.4.2 <a href="#">English</a>	1.4.2 <a href="#">English</a>
1.4.0 <a href="#">Japanese</a>	1.4.0 <a href="#">Japanese</a>
1.3.1 <a href="#">English</a>	1.3.1 <a href="#">English</a>
1.3.0 <a href="#">Japanese</a>	1.3.0 <a href="#">Japanese</a>

#### Non-Core APIs included in JDK

<a href="#">APT</a>	<a href="#">JAAS</a>
<a href="#">Doclet</a>	<a href="#">JDWP</a>
<a href="#">JDI</a>	<a href="#">JNLP</a>
<a href="#">JGSS</a>	<a href="#">Plugin DOM</a>
<a href="#">Management Extension</a>	<a href="#">Taglet</a>
<a href="#">Management MIB</a>	

\* JDK 7 is an Early Access release at this time. Java SE 6 is the latest shipping version.

Java SDKs and Tools

- Java SE
- Java EE and Glassfish
- Java ME
- JavaFX
- Java Card
- NetBeans IDE

Java Resources

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- APIs
- Code Samples & Apps
- Developer Training
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September 19-23, 2010



# Java Documentation

## Java API Documentation

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1.4.2 <a href="#">English</a>	1.4.2 <a href="#">English</a>
1.4.0 <a href="#">Japanese</a>	1.4.0 <a href="#">Japanese</a>
1.3.1 <a href="#">English</a>	1.3.1 <a href="#">English</a>
1.3.0 <a href="#">Japanese</a>	1.3.0 <a href="#">Japanese</a>

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# Java API Documentation

<http://download.oracle.com/javase/6/docs/api>

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Overview (Java Platform SE 6) - Windows Internet Explorer

http://download.oracle.com/javase/6/docs/api/

Overview (Java Platform SE 6)

Java™ Platform Standard Ed. 6

All Classes

Packages

- [java.applet](#)
- [java.awt](#)
- [java.awt.color](#)
- [java.awt.datatransfer](#)
- [java.awt.dnd](#)

All Classes

- [AbstractAction](#)
- [AbstractAnnotationValueVisitor6](#)
- [AbstractBorder](#)
- [AbstractButton](#)
- [AbstractCellEditor](#)
- [AbstractCollection](#)
- [AbstractColorChooserPanel](#)
- [AbstractDocument](#)
- [AbstractDocument.AttributeContext](#)
- [AbstractDocument.Content](#)
- [AbstractDocument.ElementEdit](#)
- [AbstractElementVisitor6](#)
- [AbstractExecutorService](#)
- [AbstractInterruptibleChannel](#)
- [AbstractLayoutCache](#)
- [AbstractLayoutCache.NodeDimension](#)
- [AbstractList](#)
- [AbstractListModel](#)
- [AbstractMap](#)
- [AbstractMap.SimpleEntry](#)
- [AbstractMap.SimpleImmutableEntry](#)
- [AbstractMarshallerImpl](#)
- [AbstractMethodError](#)
- [AbstractOwnableSynchronizer](#)
- [AbstractPreferences](#)
- [AbstractProcessor](#)

Overview Package Class Use **Tree** Deprecated Index Help

PREV NEXT FRAMES NO FRAMES

## Java™ Platform, Standard Edition 6

### API Specification

This document is the API specification for version 6 of the Java™ Platform, Standard Edition.

See:

- [Description](#)

### Packages

<a href="#">java.applet</a>	Provides the classes necessary to create an applet and the classes an applet uses to communicate with its applet context.
<a href="#">java.awt</a>	Contains all of the classes for creating user interfaces and for painting graphics and images.
<a href="#">java.awt.color</a>	Provides classes for color spaces.
<a href="#">java.awt.datatransfer</a>	Provides interfaces and classes for transferring data between and within applications.
<a href="#">java.awt.dnd</a>	Drag and Drop is a direct manipulation gesture found in many Graphical User Interface systems that provides a mechanism to transfer information between two entities logically associated with presentation elements in the GUI.
<a href="#">java.awt.event</a>	Provides interfaces and classes for dealing with different types of events fired by AWT

# Java Documentation

<http://download.oracle.com/javase/6/docs/api>

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**Java™ Platform, Standard Edition 6**

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# Java Documentation

<http://download.oracle.com/javase/6/docs/api>

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Overview (Java Platform SE 6) - Windows Internet Explorer  
http://download.oracle.com/javase/6/docs/api/

Overview Package Class Use **Tree** Deprecated Index Help

PREV NEXT FRAMES NO FRAMES

**Packages Names**

Java™ Platform, Standard Edition 6  
API Specification

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# Java Documentation

<http://download.oracle.com/javase/6/docs/api>

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Overview (Java Platform SE 6) - Windows Internet Explorer

http://download.oracle.com/javase/6/docs/api/

Overview (Java Platform SE 6)

Java™ Platform Standard Ed. 6

All Classes

Packages

java.applet

java.awt

java.awt.color

java.awt.datatransfer

java.awt.dnd

All Classes

AbstractAction

AbstractAnnotationValueVisitor6

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AbstractButton

AbstractCellEditor

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AbstractDocument.Content

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Overview Package Class Use Tree Deprecated Index Help

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Java™ Platform, Standard Edition 6

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Drag and Drop is a direct manipulation gesture found in many Graphical User Interface systems that provides a mechanism to transfer information between two entities logically associated with presentation elements in the GUI.

java.awt.event

Provides interfaces and classes for dealing with different types of events fired by AWT

Packages Description

1:31 AM 10/6/2010

Dr. Salwan Qasem, 2010

KSU-CCIS-CS

# Package View

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The screenshot shows a web browser window displaying the Java Platform SE 6 API documentation for the `java.awt` package. The browser's address bar shows the URL `http://download-l1nw.oracle.com/javase/6/docs/api/`. The page title is "java.awt (Java Platform SE 6) - Windows Internet Explorer".

The left sidebar contains a list of navigation links, including:

- [javax.xml.ws.soap](#)
- [javax.xml.ws.spi](#)
- [javax.xml.ws.wsaddressing](#)
- [javax.xml.xpath](#)
- [org.ietf.jgss](#)
- [org.omg.CORBA](#)
- [org.omg.CORBA\\_2\\_3](#)
- [org.omg.CORBA\\_2\\_3.portable](#)
- [org.omg.CORBA.DynAnyPackage](#)
- [org.omg.CORBA.ORBPackage](#)
- [org.omg.CORBA.portable](#)
- [MenuItem](#)
- [MenuItemUI](#)
- [MenuKeyEvent](#)
- [MenuKeyListener](#)
- [MenuListener](#)
- [MenuSelectionManager](#)
- [MenuShortcut](#)
- [MessageContext](#)
- [MessageContext.Scope](#)
- [MessageDigest](#)
- [MessageDigestSpi](#)
- [MessageFactory](#)
- [MessageFormat](#)
- [MessageFormat.Field](#)
- [MessageProp](#)
- [Messenger](#)
- [MetaEventListener](#)
- [MetalBorders](#)
- [MetalBorders.ButtonBorder](#)
- [MetalBorders.Flush3DBorder](#)
- [MetalBorders.InternalFrameBorder](#)
- [MetalBorders.MenuBarBorder](#)
- [MetalBorders.MenuItemBorder](#)
- [MetalBorders.OptionDialogBorder](#)
- [MetalBorders.PaletteBorder](#)
- [MetalBorders.PopupMenuBorder](#)
- [MetalBorders.PullerButtonBorder](#)

The main content area shows the "Package `java.awt`" page. It includes navigation tabs for "Overview", "Package" (selected), "Class", "Use", "Tree", "Deprecated", "Index", and "Help". Below the tabs, there are links for "PREV PACKAGE" and "NEXT PACKAGE", and "FRAMES" and "NO FRAMES".

The package description states: "Contains all of the classes for creating user interfaces and for painting graphics and images."

Under the "See:" section, there is a link to "Description".

The "Interface Summary" section contains the following table:

Interface	Description
<a href="#">ActiveEvent</a>	An interface for events that know how to dispatch themselves.
<a href="#">Adjustable</a>	The interface for objects which have an adjustable numeric value contained within a bounded range of values.
<a href="#">Composite</a>	The <code>Composite</code> interface, along with <a href="#">CompositeContext</a> , defines the methods to compose a draw primitive with the underlying graphics area.
<a href="#">CompositeContext</a>	The <code>CompositeContext</code> interface defines the encapsulated and optimized environment for a compositing operation.
<a href="#">ItemSelectable</a>	The interface for objects which contain a set of items for which zero or more can be selected.
<a href="#">KeyEventDispatcher</a>	A <code>KeyEventDispatcher</code> cooperates with the current <code>KeyboardFocusManager</code> in the targeting and dispatching of all <code>KeyEvents</code> .
<a href="#">KeyEventPostProcessor</a>	A <code>KeyEventPostProcessor</code> cooperates with the current <code>KeyboardFocusManager</code> in the final resolution of all unconsumed

The bottom of the browser window shows the taskbar with the Start button, Internet Explorer, and other applications. The system tray shows the date and time as 10:20 AM on 10/9/2010.

# Package View

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## □ One line description

### **Package java.awt**

Contains all of the classes for creating user interfaces and for painting graphics and images.

## □ Interface Summary

**Adjustable** The interface for objects which have an adjustable numeric value contained within a bounded range of values.

**Composite** The Composite interface, along with [CompositeContext](#), defines the methods to compose a draw primitive with the underlying graphics area.

**ItemSelectable** The interface for objects which contain a set of items for which zero or more can be selected.

**MenuContainer** The super class of all menu related containers.

.....

## □ Class Summary

**Button** This class creates a labeled button.

**Checkbox** A check box is a graphical component that can be in either an "on" (true) or "off" (false) state.

**CheckboxGroup** The CheckboxGroup class is used to group together a set of Checkbox buttons.

**CheckboxMenuItem** This class represents a check box that can be included in a menu.

**Choice** The Choice class presents a pop-up menu of choices.

**Component** A *component* is an object having a graphical representation that can be displayed on the screen and that can interact with the user.

.....

# Package View

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## □ **Enum Summary**

- **Component.BaselineResizeBehavior** Enumeration of the common ways the baseline of a component can change as the size changes.
- **Desktop.Action** Represents an action type (BROWSE, EDIT, OPEN...).
- ...

## □ **Exception Summary**

- **FontFormatException** Thrown by method createFont in the Font class to indicate that the specified font is bad.
- **IllegalComponentStateException** Signals that an AWT component is not in an appropriate state for the requested operation.
- ...

## □ **Error Summary**

- **AWTError** Thrown when a serious Abstract Window Toolkit error has occurred.

## □ **Package <package name> Description**

- Contains all of the classes for creating user interfaces and for painting graphics and images. A user interface object such as a button or a scrollbar is called, in AWT terminology, a component. The Component class is the root of all AWT components. See Component for a detailed description of properties that all AWT components share.....

## □ **Additional Specification**

- refers to some additional tutorials and documentation.



# Class View (example Class Math)

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- **Package**
  - `java.lang.Object` => `java.lang.Math`
- **Description**
  - The class `Math` contains methods for performing basic numeric operations such as the elementary exponential, logarithm, square root, and trigonometric functions.
- **Field Summary**
  - static double **E**  
The double value that is closer than any other to  $e$ , the base of the natural logarithms.
  - static double **PI**  
The double value that is closer than any other to  $\pi$ , the ratio of the circumference of a circle to its diameter.
- **Method Summary**
  - static double **abs**(double a)  
Returns the absolute value of a double value.
  - static float **abs**(float a)  
Returns the absolute value of a float value.
  - static int **abs**(int a)  
Returns the absolute value of an int value.
  - static long **abs**(long a)  
Returns the absolute value of a long value.
  - .....

# Method details `(example float abs(float a) )`

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## **abs**

```
public static float abs(float a)
```

Returns the absolute value of a float value. If the argument is not negative, the argument is returned. If the argument is negative, the negation of the argument is returned. Special cases:

- If the argument is positive zero or negative zero, the result is positive zero.
- If the argument is infinite, the result is positive infinity.
- If the argument is NaN, the result is NaN.

In other words, the result is the same as the value of the expression:

```
Float.intBitsToFloat(0x7fffffff & Float.floatToIntBits(a))
```

**Parameters:** a - the argument whose absolute value is to be determined

**Returns:** the absolute value of the argument.

# Java Code samples

<http://wikis.sun.com/display/code/Home>

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- [Code Samples](#) is a collection of code snippets exemplifying the Java programming language and other languages. Example code comes from various published documents on java.sun.com, and are also provided by the developer community. They are organized by topic.
- **Java Platform, Standard Edition (Java SE)**
  - [Language Syntax](#)
  - [Numbers and Math Operations](#)
  - [Life Cycle of An Object](#)
  - [Reading and Writing Data](#)
  - [Classes and Inheritance](#)
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