



HIERARCHY: INHERITANCE DIAGRAMS FOR JAVA
USER MANUAL

CONTENTS

1 Introduction.....	1	4 Usage.....	4
1.1 Purpose.....	1	4.1 Display Commands.....	4
1.2 Installation.....	1	4.1.1 Keyboard Controls.....	4
2 Requirements.....	2	4.1.2 Mouse Controls.....	4
2.1 Java.....	2	4.2 Example Graphs.....	5
2.1.1 Verify.....	2	4.2.1 Example #1.....	5
3 Running.....	3	4.2.2 Example #2.....	5
3.1 Windows.....	3	4.3 Command Line Options.....	5
3.2 Unix.....	3	5 Copyright.....	6
3.3 Java.....	3	6 License.....	7

1 INTRODUCTION

This document describes how to use the Hierarchy software application.

1.1 PURPOSE

The purpose to Hierarchy is to create a visually appealing Java class inheritance hierarchy with minimal effort by software developers.

1.2 INSTALLATION

Unzipping the archive is the only installation step.

2 REQUIREMENTS

This section discusses the software requirements that must be met to run the application.

2.1 JAVA

The Java runtime environment (J2RE) or the Java software development kit (J2SDK) version 1.6 (or greater) is required to run the application.

2.1.1 VERIFY

To verify which version of Java is currently installed, complete the following steps:

1. Open a terminal window, or command shell.
2. Type:

```
java -version
```

Depending on your operating system, you should see output similar to the following:

```
java version "1.6.0_16"  
Java(TM) SE Runtime Environment (build 1.6.0_16-b01)  
Java HotSpot(TM) 64-Bit Server VM (build 14.2-b01, mixed mode)
```

The version number is highlighted in bold.

3 RUNNING

This section discusses how to run Hierarchy. In all cases, you must:

1. Open a terminal window (or command prompt).
2. Change into Hierarchy subdirectory where the Hierarchy archive was unzipped.

3.1 WINDOWS

For Microsoft Windows, execute the following command:

```
run.bat
```

3.2 UNIX

For Unix-based operating systems (e.g., MacOS or Linux), execute the following commands:

```
chmod +x run.sh  
./run.sh
```

The **chmod** command need only be run the first time to set the executable bit of the shell script.

3.3 JAVA

To run Hierarchy manually, execute the following command:

```
java -Xms64m -Xmx1024m -jar lib/hierarchy.jar
```

4 USAGE

This section describes a few example usages of the Hierarchy application.

Throughout this section `<run>` refers to executing Hierarchy as outlined in section 3.

4.1 DISPLAY COMMANDS

There are a number of ways to interact with Hierarchy. This section describes the keyboard and mouse controls for the application.

4.1.1 KEYBOARD CONTROLS

The keyboard controls for Hierarchy are listed in Table 4.1.

Key	Action
+	Zoom into the display.
-	Zoom out of the display.
Control q	Quit hierarchy.
Control s	Save the graph to a file.

Table 4.1: Application Keyboard Controls

4.1.2 MOUSE CONTROLS

The mouse controls for Hierarchy are listed in Table 4.2.

Button	Action
Left	Click and hold to drag the entire graph.
Right	Click to fit the graph to the visible area.
Right	Click and hold while moving the mouse to zoom.

Table 4.2: Application Mouse Controls

Resizing the window will automatically zoom the graph.

4.2 EXAMPLE GRAPHS

This section provides a few examples on how to create graphs using Hierarchy. The algorithm to determine how to lay out the graph is not completely deterministic. As such the graph might appear differently between runs.

4.2.1 EXAMPLE #1

Execute the following command to see the class hierarchy for `java.awt.Window`:

```
<run> -c java.awt.Window
```

4.2.2 EXAMPLE #2

Execute the following command to see a subset of the class hierarchy for `java.awt.Window`:

```
<run> -c java.awt.Window --exclude "sun.*|java.awt.Container|com.sun.*"
```

This example uses a simplified regular expression pattern to specifically exclude:

- all classes whose package namespace begins with “sun”.
- all classes whose package namespace begins with “com.sun”.
- the class “`java.awt.Container`”.

The result should appear similar to Figure 4.1:

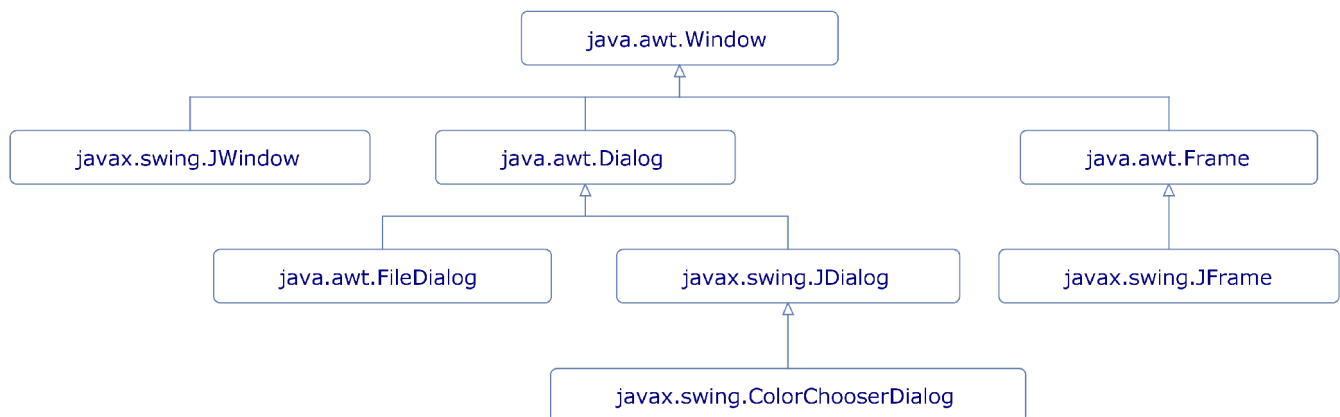


Figure 4.1: *java.awt.Window Class Hierarchy*

4.3 COMMAND LINE OPTIONS

There are a number of command line options that can be used to control various aspects of the resulting graph. Run the application without specifying any options to see an overview of the various options.

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