



Before You Begin

This section contains information you should review before using this book. Any updates to the information presented here will be posted at:

<http://www.pearsonglobal editions.com/deitel>

In addition, we provide Dive-Into[®] videos (which will be available in time for Autumn 2014 classes) that demonstrate the instructions in this Before You Begin section.

Font and Naming Conventions

We use fonts to distinguish between on-screen components (such as menu names and menu items) and Java code or commands. Our convention is to emphasize on-screen components in a sans-serif bold **Helvetica** font (for example, **File** menu) and to emphasize Java code and commands in a sans-serif **Lucida** font (for example, `System.out.println()`).

Software Used in the Book

All the software you'll need for this book is available free for download from the web. With the exception of the examples that are specific to Java SE 8, all of the examples were tested with the Java SE 7 and Java SE 8 Java Standard Edition Development Kits (JDKs).

Java Standard Edition Development Kit 7 (JDK 7)

JDK 7 for Windows, OS X and Linux platforms is available from:

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

Java Standard Edition Development Kit (JDK) 8

At the time of this publication, the near-final version of JDK 8 for Windows, OS X and Linux platforms was available from:

<https://jdk8.java.net/download.html>

Once JDK 8 is released as final, it will be available from:

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

JDK Installation Instructions

After downloading the JDK installer, be sure to carefully follow the JDK installation instructions for your platform at:

<http://docs.oracle.com/javase/7/docs/webnotes/install/index.html>

Though these instructions are for JDK 7, they also apply to JDK 8—you'll need to update the JDK version number in any version-specific instructions.

Setting the PATH Environment Variable

The PATH environment variable on your computer designates which directories the computer searches when looking for applications, such as the applications that enable you to compile and run your Java applications (called `javac` and `java`, respectively). *Carefully follow the installation instructions for Java on your platform to ensure that you set the PATH environment variable correctly.* The steps for setting environment variables differ by operating system and sometimes by operating system version (e.g., Windows 7 vs. Windows 8). Instructions for various platforms are listed at:

<http://www.java.com/en/download/help/path.xml>

If you do not set the PATH variable correctly on Windows and some Linux installations, when you use the JDK's tools, you'll receive a message like:

```
'java' is not recognized as an internal or external command,
operable program or batch file.
```

In this case, go back to the installation instructions for setting the PATH and recheck your steps. If you've downloaded a newer version of the JDK, you may need to change the name of the JDK's installation directory in the PATH variable.

*JDK Installation Directory and the **bin** Subdirectory*

The JDK's installation directory varies by platform. The directories listed below are for Oracle's JDK 7 update 51:

- 32-bit JDK on Windows:
C:\Program Files (x86)\Java\jdk1.7.0_51
- 64-bit JDK on Windows:
C:\Program Files\Java\jdk1.7.0_51
- Mac OS X:
/Library/Java/JavaVirtualMachines/jdk1.7.0_51.jdk/Contents/Home
- Ubuntu Linux:
/usr/lib/jvm/java-7-oracle

Depending on your platform, the JDK installation folder's name might differ if you're using a different update of JDK 7 or using JDK 8. For Linux, the install location depends on the installer you use and possibly the version of Linux that you use. We used Ubuntu Linux. The PATH environment variable must point to the JDK installation directory's **bin** subdirectory.

When setting the PATH, be sure to use the proper JDK-installation-directory name for the specific version of the JDK you installed—as newer JDK releases become available, the JDK-installation-directory name changes to include an *update version number*. For example, at the time of this writing, the most recent JDK 7 release was update 51. For this version, the JDK-installation-directory name ends with "_51".

Setting the CLASSPATH Environment Variable

If you attempt to run a Java program and receive a message like

```
Exception in thread "main" java.lang.NoClassDefFoundError: YourClass
```

then your system has a CLASSPATH environment variable that must be modified. To fix the preceding error, follow the steps in setting the PATH environment variable, to locate the CLASSPATH variable, then edit the variable's value to include the local directory—typically represented as a dot (.). On Windows add

```
.;
```

at the beginning of the CLASSPATH's value (with no spaces before or after these characters). On other platforms, replace the semicolon with the appropriate path separator characters—typically a colon (:).

Setting the JAVA_HOME Environment Variable

The Java DB database software that you'll use in Chapter 24 and several online chapters requires you to set the JAVA_HOME environment variable to your JDK's installation directory. The same steps you used to set the PATH may also be used to set other environment variables, such as JAVA_HOME.

Java Integrated Development Environments (IDEs)

There are many Java integrated development environments that you can use for Java programming. For this reason, we used only the JDK command-line tools for most of the book's examples. We provide Dive-Into[®] videos (which will be available in time for Fall 2014 classes) that show how to download, install and use three popular IDEs—NetBeans, Eclipse and IntelliJ IDEA. We use NetBeans in Chapter 25 and several of the book's online chapters.

NetBeans Downloads

You can download the JDK/NetBeans bundle from:

```
http://www.oracle.com/technetwork/java/javase/downloads/index.html
```

The NetBeans version that's bundled with the JDK is for Java SE development. The online JavaServer Faces (JSF) chapters and web services chapter use the Java Enterprise Edition (Java EE) version of NetBeans, which you can download from:

```
https://netbeans.org/downloads/
```

This version supports both Java SE and Java EE development.

Eclipse Downloads

You can download the Eclipse IDE from:

```
https://www.eclipse.org/downloads/
```

For Java SE development choose the Eclipse IDE for Java Developers. For Java Enterprise Edition (Java EE) development (such as JSF and web services), choose the Eclipse IDE for Java EE Developers—this version supports both Java SE and Java EE development.

IntelliJ IDEA Community Edition Downloads

You can download the free IntelliJ IDEA Community Edition from:

```
http://www.jetbrains.com/idea/download/index.html
```

The free version supports only Java SE development.

Obtaining the Code Examples

The examples for *Java How to Program, 10/e* are available for download at

```
http://www.pearsonglobaleditions.com/deitel
```

When you download the ZIP archive file, write down the location where you choose to save it on your computer.

Extract the contents of `examples.zip` using a ZIP extraction tool such as 7-Zip (www.7-zip.org), WinZip (www.winzip.com) or the built-in capabilities of your operating system. Instructions throughout the book assume that the examples are located at:

- `C:\examples` on Windows
- your user account home folder's `examples` subfolder on Linux
- your Documents folders `examples` subfolder on Mac OS X

Java's Nimbus Look-and-Feel

Java comes bundled with a cross-platform look-and-feel known as Nimbus. For programs with Swing graphical user interfaces (e.g., Chapters 12 and 22), we configured our test computers to use Nimbus as the default look-and-feel.

To set Nimbus as the default for all Java applications, you must create a text file named `swing.properties` in the `lib` folder of both your JDK installation folder and your JRE installation folder. Place the following line of code in the file:

```
swing.defaultlaf=com.sun.java.swing.plaf.nimbus.NimbusLookAndFeel
```

For more information on locating these folders visit <http://docs.oracle.com/javase/7/docs/webnotes/install/index.html>. [Note: In addition to the standalone JRE, there's a JRE nested in your JDK's installation folder. If you're using an IDE that depends on the JDK (e.g., NetBeans), you may also need to place the `swing.properties` file in the nested `jre` folder's `lib` folder.]

You're now ready to begin your Java studies with *Java How to Program, 10/e*. We hope you enjoy the book!