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Introduction – Setup

This student workbook will teach you Java by use of hands-on exercises that will enable to become intimately familiar with the language. While the exercises use the Eclipse workbench for the purpose of Java development, the focus is to teach you Java, versus all the intricacies of Eclipse.

Eclipse

Eclipse is the open-source project created by IBM and is available for free downloads at www.eclipse.org. It is the basis of Integrated Development Environment (IDE) toolsets, which IBM and others use to create application development tools. It comes complete with a rich set of tools for Java application development, and it is these tools that we leverage in this workbook.

This workbook is based on Eclipse 2.1.0, although any subsequent edition of Eclipse should also work, although there may be some differences in the user interface.

Eclipse is the basis of many IBM products, including WebSphere Studio Site Developer and WebSphere Studio Application Developer. For iSeries programmers, Eclipse is the basis of WebSphere Development Studio Client; for zSeries programmers, it is the basis of WebSphere Studio Enterprise Developer. If you have these products, then you might be able simply to use the Java tools within them. However, these must be at their 5.1 or higher release, as the 4.0 and 5.0 releases of these products included Eclipse 1.0 and 2.0, respectively, versus the 2.1.0 version used in this workbook.

Java Development Kit

Not included with this book is the Java Development Kit (JDK) for Java. You need this to compile and run your Java programs. For classroom students, if your instructor has installed it, it will exist in directory `c:\jdk1.3.0` (or perhaps something higher, such as `jdk1.4.0`) on your `c:` drive (say). This directory's `bin` subdirectory must also be in the `PATH` environment variable.

To test whether you have it installed and your `PATH` statement is correct, go to an MS-DOS command prompt and type **java -version**. You should see something like this:

```
C:\>java -version
java version "1.3.0"
```

Otherwise you will have to download it from the Internet at www.java.sun.com/products. Follow the instructions there to install it. Be sure to update your `PATH` environment variable to point to the `c:\jdk1.3.0\bin` subdirectory.

Also, be sure to download and install the JDK documentation as well, which is a separate download. This documentation should end up in the `docs` subdirectory off `jdk1.3.0`. To ensure that the documentation goes to the appropriate directory, when unzipping it target the output to the `c:\` root directory (whatever drive you installed the JDK in). “Magically” the results will go into the correct subdirectory (if the default of “Use Folder Names” is still selected in the WinZip Classic extract options).

You should also ensure that the `CLASSPATH` environment variable exists and has in it, at a minimum, the current directory (`.`):

```
C:\>echo %CLASSPATH%
.;c:\wdsc\java;
```

On Windows NT/2000, go to **Start → Settings → Control Panel** and double click on the **System** icon. Then select the **Environment** tab and add or update the **CLASSPATH** setting: Insert **;** (dot and semicolon) at the beginning of the classpath if it is not there already. This is essential for Java to find files in your current directory, which our exercises all depend on.

On Windows XP, go to **Start → Control Panel** and double click on the **System** icon. Then select the **Advanced** tab, then the **Environment Variables** button. Add or edit the **CLASSPATH** system variable: Insert **;** (dot and semicolon) at the beginning of the classpath if it is not there already.

On Windows 95/98, edit C:\AUTOEXEC.BAT, search for SET CLASSPATH= and edit that line.

Installing Software for the Course

To do the exercises in this workbook, you must first install the Eclipse workbench supplied with the CD.

If you wish to use an existing Eclipse-based product, such as WebSphere Development Studio Client, WebSphere Studio Site Developer, or WebSphere Studio Application Developer, then copy the contents of the `plugins` directory on the CD to the `plugins` subdirectory of your existing product. If that product is running, shut it down first.

To install the full Eclipse workbench as supplied on the CD, simply insert the CD and then copy the entire Java For RPG and COBOL Programmers Course root directory from the CD to one of your disk drives.

You cannot run the workbench from the CD directly!

It is possible to have on your workstation both the Eclipse workbench supplied with this book and an Eclipse-based product such as WebSphere Development Studio Client, and in fact this is recommended.

Preparing Eclipse Workbench for the Course

After installing the workbench or the plugins, you must prepare for the exercises by running the Import wizard within the workbench to set up the Java projects needed for the exercises in each chapter. To do this:

1. Start the workbench. For the supplied Eclipse workbench, double click on the `eclipse.exe` file within the `Eclipse2.1.0` subdirectory. If using an existing product, use its action in the Start menu.
2. Select the **File → Import** menu item. Select **Java For RPG and COBOL Programmers Course** from the list, click the **Next** button, and then click the **Finish** button. This import will take a few minutes, but need be done only once. It loads the source for every chapter. Alternatively, you can load the source for each chapter as you do it.

Where Are the Answers?

The source-code answers to the hands-on exercises are included on the CD. For each exercise, you can see the results by doing **File → Import**, selecting **Java For RPG and COBOL Programmers Course Answers**, and on the next page selecting the exercise number. This will import the answers into a project which you can explore.

The answers to the questions and multiple choice questions are available at the publisher's Web site: www.mcpressonline.com/j4rc.

Enjoy the course!