

## IT 307 Netbeans Notes and Motivation

This doc is intended to suggest a couple of reasons why WIU has chosen Java as its core computer language. Further, if you are curious or interested in more detail about the actual software required and how to get and install it, I have given a short tutorial on the topic below.

### Why Emphasize Computer Software Development at WIU

WIU's *Batchelor of Informatics* curriculum is engineered to give you the edge in the expanding computer technology industry such as software analysis, design as well as liaison positions such as subject matter expert (SME) and business analyst.

WIU has developed multiple courses within the BS curricula that will prepare you for entry level positions in this industry if you have no prior software exposure, and higher level positions if you can combine your previous work experience with WIU classes.

### Where is the Industry Going: Bureau of Labor Statistics Occupational Outlook Handbook

**This is from the handbook for 2011-2011.**

<http://www.bls.gov/oco/ocos303.htm>

“Overall, employment of computer software engineers and computer programmers is projected to increase much faster than the average for all occupations.”

There is a caveat though, the demand for **just** programmers is projected to go down slightly but the overall prospects are very bright for the more comprehensive education that WIU will provide.

“Job prospects should be best for those with a bachelor's degree and relevant experience. Computer software engineers can generally be divided into two categories: applications engineers and systems engineers. Computer applications software engineers analyze end users' needs and design, construct, deploy, and maintain general computer applications software or specialized utility programs. These workers use different programming languages, depending on the purpose of the program and the environment in which the program runs. The programming languages most often used are C, C++, Java, and Python. Some software engineers develop packaged computer applications, but most create or adapt customized applications for business and other organizations. Some of these workers also develop databases”.

### Why Java?

From multiple perspectives, Java is an essential language to have familiarity with. From the Bureau of Labor Statistics actual data as quoted above, to the perceived importance by some 9 million Java developers, you can't go wrong in learning this language. Java's future in the enterprise is also alive and well, at least for the next 5 years or so. Given the industry demand for software professionals, familiar with Java and related languages such as C#, WIU has responded by choosing Java as its core language and built upon that.

### A Little Background: The Java Stack

‘Java’ encompasses at least three parts: the Java language, the Java libraries, and the Java Virtual

Machine *JVM*, which executes the source code programs. Taken together, these three comprise the *Java Platform*. So, when someone says ‘Java’, they are probably referring to the Java platform rather than just the language itself. Similarly, language comparisons should involve more than just the languages in isolation.

### **Java Standard Edition Development Kit (Java SE 6 jdk)**

This ‘kit’ is the distribution of the code that allows software developers to write in the Java language, call needed code from the Java library, and have the JVM execute their code. This development kit is freely downloadable for a variety of platforms such as Linux, Windows.

### **Netbeans (the Java Integrated Development Environment (IDE))**

Along with the Java language, libraries, and JVM, comes the need for manipulation support in the form of editors, Graphical Tools (GUI design), and macros(as in Excel), that automates most of the ‘plumbing level’ of coding such as compiling the source code and then running and debugging it. That automation is performed by an *Integrated Development Environment* (IDE). The easiest one to learn and use is called *Netbeans* and closely tracks the development of Java itself.

## How To Set up Your IDE

For students asking what is entailed in preparing for the Java and database courses, here is a short summary of the steps required. I strongly suggest that the student follow the procedure below even though the download site suggests 'bundles'. The bundles usually lack the necessary software for our course work. Note that since the Oracle Corp. bought Sun Microsystems, the references will be to Oracle rather than Sun.

## First - Download and Install the Java SE 6 Software

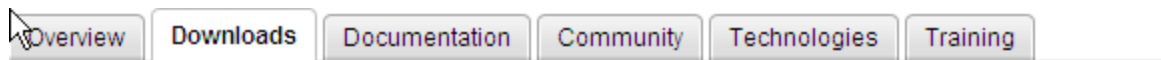
Go to <http://www.oracle.com/technetwork/java/index.html>

(Note, this is the same source for netbeans as will be described subsequently)

Consider the screen shot below: Select the Java SE (standard edition) Update 26



Select the Java Platform (jdk) Button

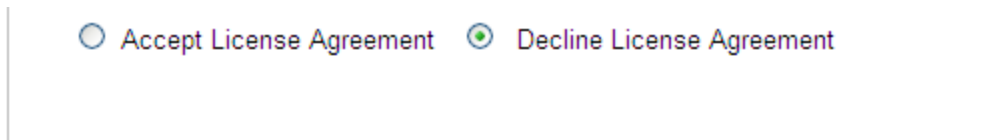


Java SE Downloads



Here are the Java SE downloads in detail:

Below, you have a menu of choices to match several operating systems. For Windows, you will want Windows x86. After downloading that file, just double click to install it (take the defaults).



Java SE Development Kit 6 Update 26		
Product / File Description	File Size	Download
Linux x86 - RPM Installer	76.93 MB	<a href="#">jdk-6u26-linux-i586-rpm.bin</a>
Linux x86 - Self Extracting Installer	81.20 MB	<a href="#">jdk-6u26-linux-i586.bin</a>
Linux Intel Itanium - RPM Installer	60.25 MB	<a href="#">jdk-6u26-linux-ia64-rpm.bin</a>
Linux Intel Itanium - Self Extracting Installer	67.92 MB	<a href="#">jdk-6u26-linux-ia64.bin</a>
Linux x64 - RPM Installer	77.15 MB	<a href="#">jdk-6u26-linux-x64-rpm.bin</a>
Linux x64 - Self Extracting Installer	81.45 MB	<a href="#">jdk-6u26-linux-x64.bin</a>
Solaris x86 - Self Extracting Binary	81.08 MB	<a href="#">jdk-6u26-solaris-i586.sh</a>
Solaris x86 - Packages - tar.Z	136.89 MB	<a href="#">jdk-6u26-solaris-i586.tar.Z</a>
Solaris SPARC - Self Extracting Binary	86.05 MB	<a href="#">jdk-6u26-solaris-sparc.sh</a>
Solaris SPARC - Packages - tar.Z	141.37 MB	<a href="#">jdk-6u26-solaris-sparc.tar.Z</a>
Solaris SPARC 64-bit - Self Extracting Binary	12.24 MB	<a href="#">jdk-6u26-solaris-sparcv9.sh</a>
Solaris SPARC 64-bit - Packages - tar.Z	15.58 MB	<a href="#">jdk-6u26-solaris-sparcv9.tar.Z</a>
Solaris x64 - Self Extracting Binary	8.50 MB	<a href="#">jdk-6u26-solaris-x64.sh</a>
Solaris x64 - Packages - tar.Z	12.24 MB	<a href="#">jdk-6u26-solaris-x64.tar.Z</a>
** Windows x86	76.81 MB	<a href="#">jdk-6u26-windows-i586.exe</a>

## Next - Download and Install the Netbeans 7.0 Software

*NOTE: You will need to install the Java jdk software first as Netbeans requires it to be installed before Netbeans will run.*

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



Select the Download Netbeans 7.0 option and consider the screen shot below. Select the far right option (the most comprehensive one 'All') since that will give you the most options in the future including web applications.

After downloading, double click to install. There are several 'customize' options that you can choose - or, you can simply take all the defaults.

NetBeans IDE 7.0 Download

6.9.1 | 7.0 | Development | Archive

Email address (optional):

IDE Language:  Platform:

Subscribe to newsletters:  Monthly  Weekly

NetBeans can contact me at this address

Note: Greyed out technologies are not supported for this platform.

**NetBeans IDE Download Bundles**

Supported technologies *	Java SE	Java EE	C/C++	PHP	All
NetBeans Platform SDK	•	•			•
Java SE	•	•			•
Java EE		•			•
Java ME					•
Java Card™ 3 Connected					•
C/C++			•		•
Groovy					•
PHP				•	•
<b>Bundled servers</b>					
GlassFish Server Open Source Edition 3.1		•			•
Apache Tomcat 7.0.11		•			•

Download buttons and sizes:

- Download (Free, 66 MB)
- Download (Free, 157 MB)
- Download (Free, 45 MB)
- Download (Free, 42 MB)
- Download (Free, 244 MB)

\* You can add or remove packs later using the IDE's Plugin Manager (Tools | Plugins).

**Important Legal Information:**


Java 6 is required for installing and running the PHP and C/C++ NetBeans Bundles. You can download the latest Java at java.com.

NetBeans Community Distributions are available under the NetBeans License.

## Finally - Download the Java Application Programming Interface (the Java Library Docs)

This will download the documents on how to use the Java library. The downloaded zip file can be referenced from within Netbeans. (Instructors should help out with this step although I do have a tutorial if anyone is interested).

Go to <http://www.oracle.com/technetwork/java/index.html> (as for the Java and Netbeans software) Select the Java SE Documentation and download it (shown below). *No need to unzip the file*, as Netbeans will read the zipped material.

 <p><b>JDK DST Timezone Update Tool - 1.3.39</b>  The tzupdater tool is provided to allow the updating of installed JDK/JRE images with more recent timezone data in order to accommodate the latest timezone changes. <a href="#">Learn more</a> ▶</p>	<p><a href="#">Download</a></p> <p><a href="#">ReadMe</a></p>
<p><b>Java SE 6 Documentation</b></p> <ul style="list-style-type: none"> <li>▪ <a href="#">Java SE 6 Documentation</a></li> <li>▪ <a href="#">Docs Installation Instructions</a></li> <li>▪ <a href="#">Oracle License</a></li> </ul>	<p><a href="#">Download</a></p>
<p><b>Java SE 6 JDK Source Code</b></p> <p>JDK 6 source code is available for those interested in exploring the details of the JDK. This includes schools, universities, companies, and individuals who want to examine the source code for personal interest or research &amp; development. The licensing does not impose restrictions upon those who wish to work on independent open-source projects.</p>	<p><a href="#">Download</a></p> <p><a href="#">Java Research License</a></p>
<p><b>Solaris SPARC and x86 Patches</b>  <small>(Access to My Oracle Support is required)</small></p>	<p><a href="#">Download</a></p>

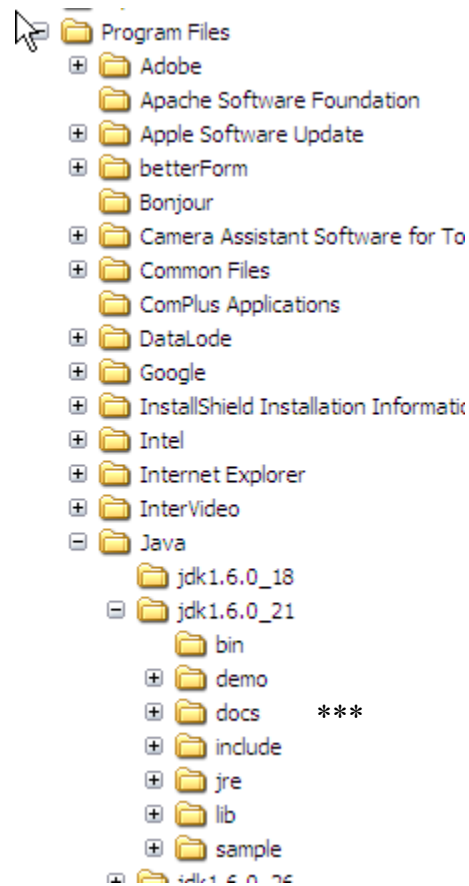
### Linking the Downloaded Documentation zip file with Netbeans

There is no need to unzip the Java SE 6 document file, just copy it to your hard disk. (I put my zip file in the folder that has the JDK distribution in it as below, shown as 'docs'. (see the three asterisks) Now go to Netbeans:

Tools> Java Platforms > (now press the Javadoc tab)

to the right of the dialog box, it allows you to *Add Zip/Folder*

Select the *Add* option and navigate to where you copied your zip file. Hit *close*, and you're done!



## Additional Software

The Firefox browser is recommended as a compatible component to Java. Within the Firefox browser, Firebug is useful in debugging JavaScript programs.

## Summary

For potential students, let them know that this BS Informatics will enable them to compete out there in industry!