

# 605.201 Introduction to Programming Using Java

## Installing Java On Your Computer

### Determining if Java is Already Installed

It is possible that Java may already be installed on your computer. If you are using a Mac, Java is probably already installed. To check this, go to the /Applications/Utilities/ folder and launch the Java Preferences program. If it opens and shows various configuration options, Java is already installed on your computer. If Java is not installed, it should show a message stating so and provide an option to install it. If you are using a Windows computer, open a command prompt window and type `java -version` followed by the enter key. If Java is installed, information about the version that is installed will be displayed.

If Java is not already installed on your computer, please follow the instructions below.

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Installing Java on your computer should be a relatively straightforward process. If your computer is running a Windows operating system you will follow a three-step procedure to do this. If you are using a Mac, Java should already be installed on your computer, and you can skip to step 4 and install the DrJava Interactive Development Environment. For Windows users, follow these steps...in this order:

1. Download & install the JDK
2. Find out where Java is installed on your computer
3. Set your PATH environment variable
4. Install an IDE (optional)

### Downloading & Installing The JDK

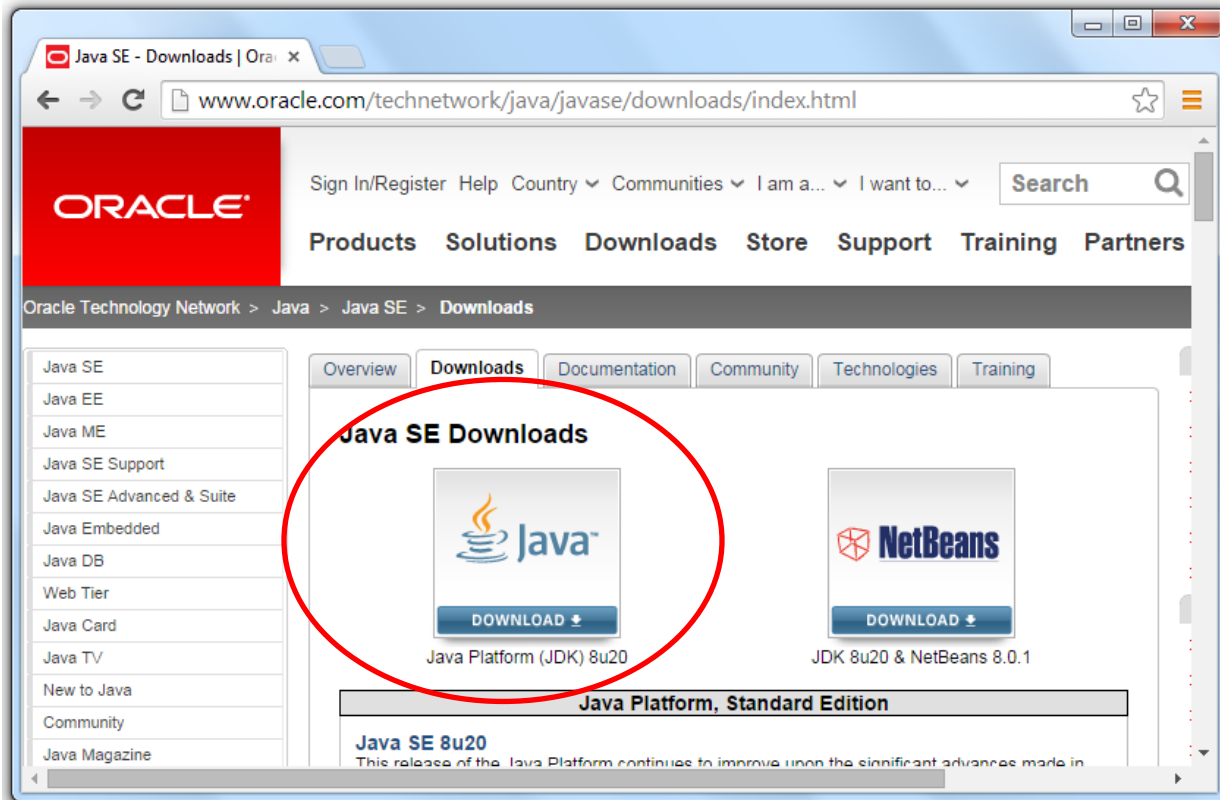
For this AP Computer Science course we will be using Java as the programming language. You must install the **Java Development Kit (JDK)** on your computer at the beginning of the course if you are using a computer running the Windows operating system or LINUX operating system. If you are using a Mac, Java should have come already installed on your computer, and you should consult the *Java Notes For Mac Users* document on the course website for more information. To install the JDK on a Windows or LINUX computer, use a web browser program and navigate to this site:

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

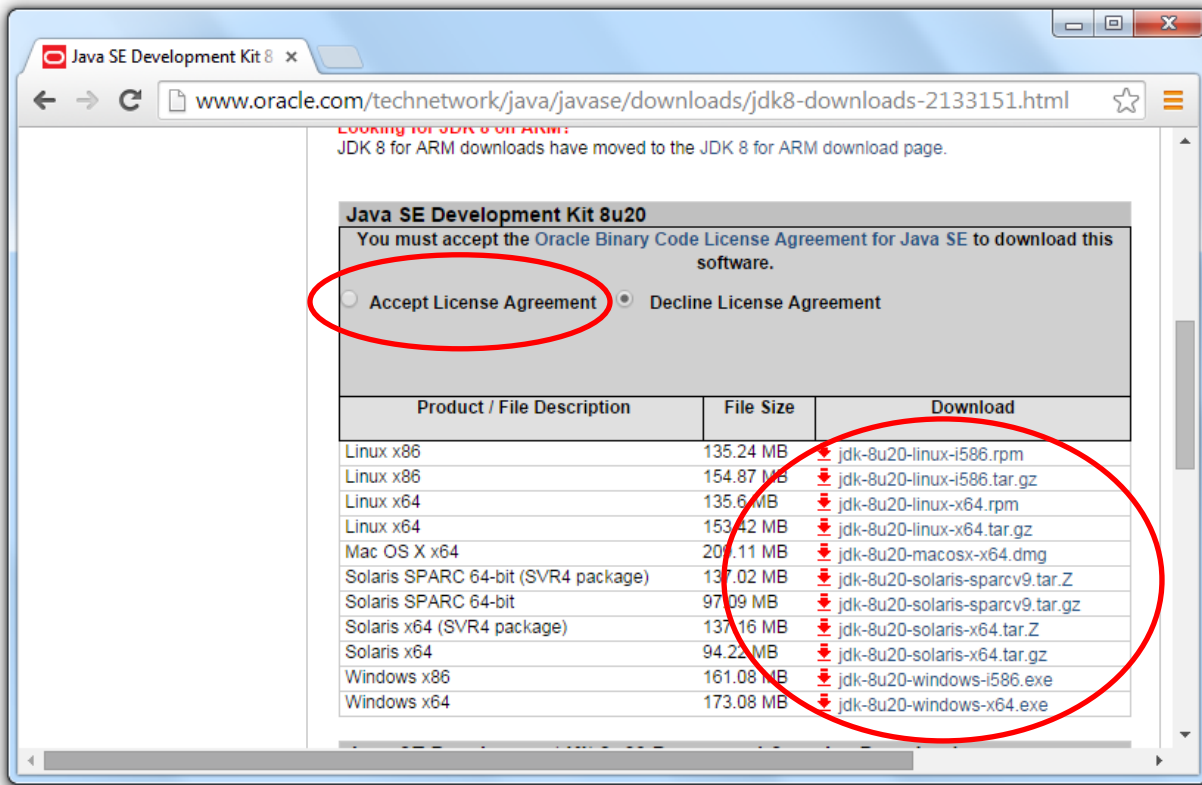
Download buttons for the most current versions of Java should be displayed as indicated below. Click on the button corresponding to Java SE.



You will then be taken to another page like the one below. Click on the “accept license agreement” button, find your operating system in the list, and click on the download link to the right of the appropriate red arrow.

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You may be asked whether to *Run* or *Save* the installation file. Select *Save* to download the file to your computer, then run the file and follow the installation instructions.

You may be asked to Register with Oracle at the end of the installation process. This is completely optional and there is no reason you have to do this.

*Please note that Oracle periodically releases new versions of Java, so what you actually see may differ a bit from what is shown in this tutorial, but the overall process should be similar, if not identical.*

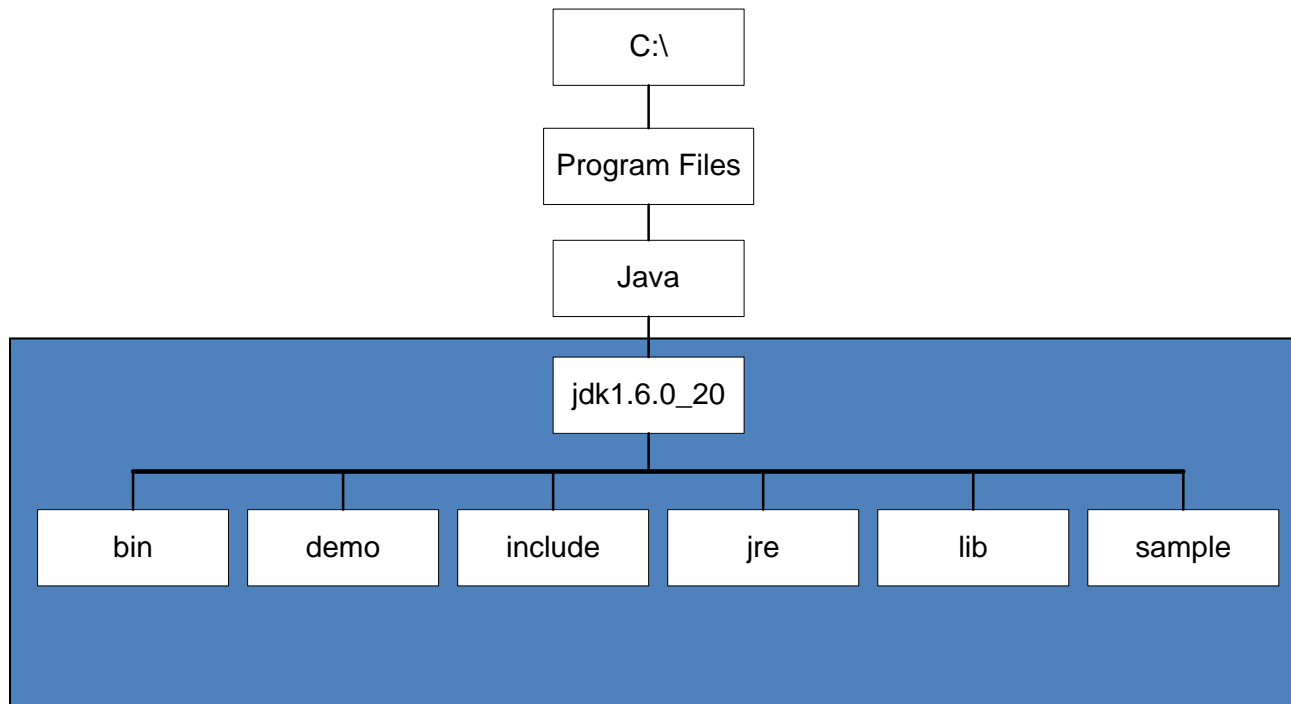
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### Finding Out Where Java Is Installed On Your Computer

When the Java download and installation process is complete, you'll need to find out where Java has been installed on your computer's file system. Sometimes the download manager will ask you to specify a directory to install Java in and sometimes it may not.

My copy of the JDK was installed in the C:\Program Files\Java\ directory on my computer. The file structure that was installed looks like this.



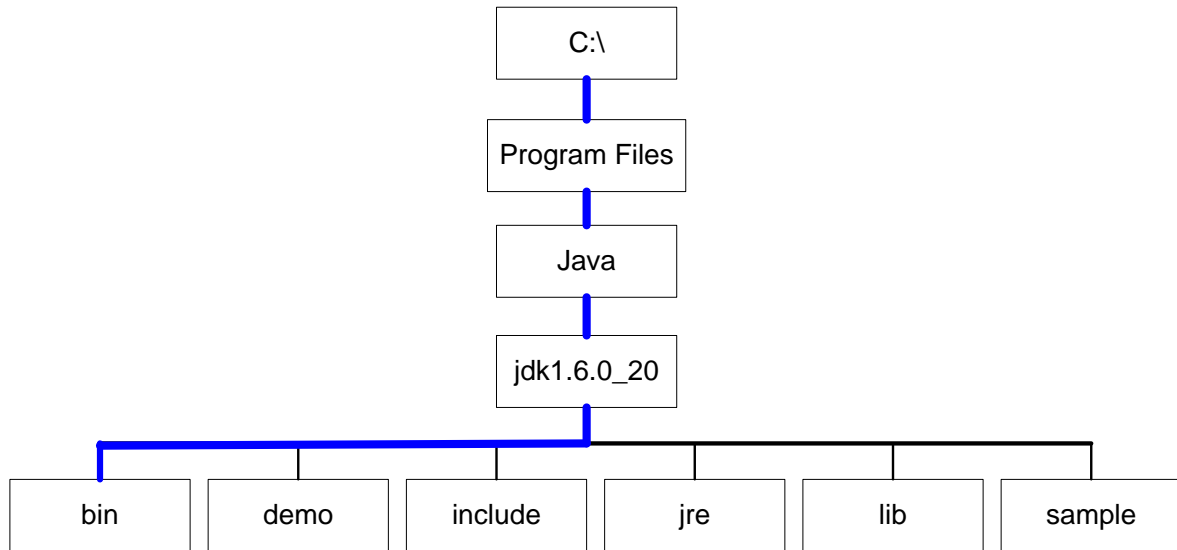
Your copy of the JDK may be installed somewhere different on your computer. You'll need to find out where, but once you do you can basically forget about it. To find out where the JDK has been installed, you can try looking in the C:\Program Files\Java directory, or from the Windows Start menu select Search and search for \*jdk\*.

It's not necessary to know what's contained in all of these subdirectories, but the Java compiler is contained in the 'bin' subdirectory and you'll need to work with that for the next step in the setup process.

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Once you find the subdirectory, write down its full path name. For my computer the full path name to the Java compiler is *C:\Program Files\Java\jdk1.6.0\_20\bin*.



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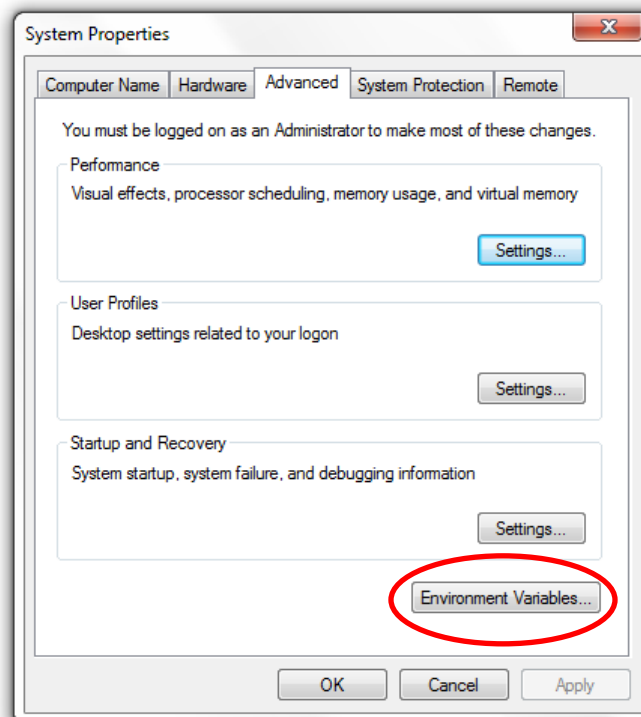
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### Setting Your PATH Environment Variable

On computers running Windows there is an environment variable named PATH. This variable tells Windows where to look on the file system for programs that are run from the Windows command line. In order for you to be able to compile Java programs from the command line you must use this variable to tell Windows where the Java compiler is located. The exact steps for setting this variable will vary a bit depending upon the version of Windows your computer is running. This document will demonstrate how to set the PATH variable for Windows 7 computers. For other versions of Windows you can use a search engine with the following search string “how to set path variable in windows XX”, by replacing the XX with the version of Windows your computer is running.

For Windows 7 the procedure is as follows:

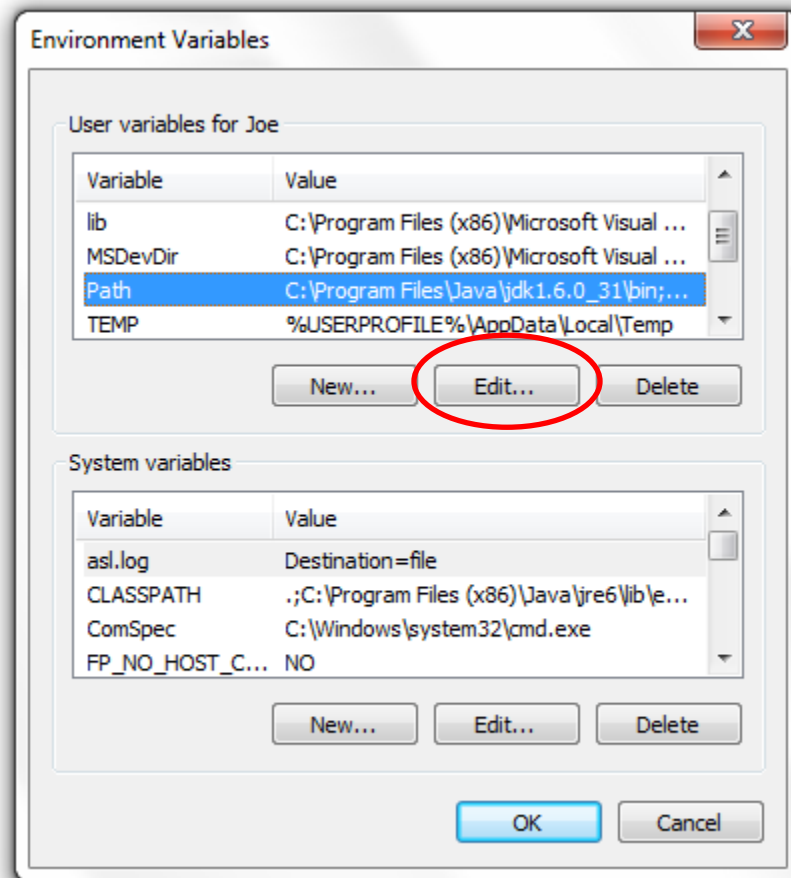
- From the Start menu, right click on *Computer* Select *Advanced System Settings* near the upper left portion of the screen
- Select the *Advanced* tab in the System Properties window, then select *Environment Variables* as illustrated below



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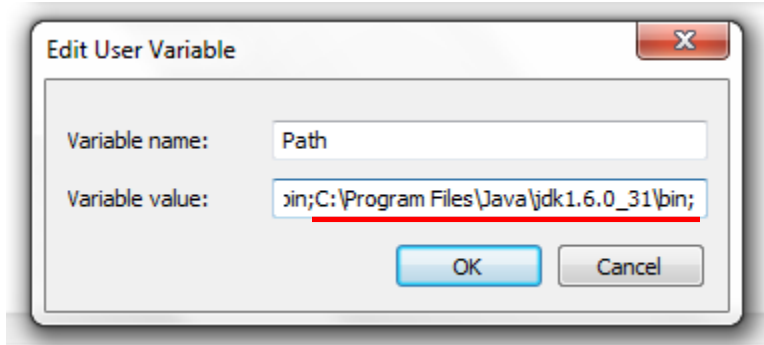
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- In the *Environment Variables* window, highlight the *Path* variable by left-clicking, then select *Edit* as illustrated below



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- In the *Edit User Variable* window, left-click anywhere in the *Variable value* box, scroll to the end, and type a semicolon (;) followed by the path name to the Java compiler on your computer.
- Click on the *OK* buttons until all the windows are closed

### Install an IDE (Optional)

An Interactive Development Environment (IDE) is a tool that makes it very easy to compile, run, and debug Java programs. There are many IDEs available. Three popular IDEs are Eclipse ([www.eclipse.org](http://www.eclipse.org)), NetBeans ([www.netbeans.org](http://www.netbeans.org)), and DrJava ([www.drjava.org](http://www.drjava.org)). They are all free, and are available for both Windows and Mac computers. Some additional IDEs are listed in the first chapter of the course textbook. Using an IDE is recommended, but is not a requirement for this AP Computer Science course, and specific IDE features will not be discussed, but many students find that using an IDE helps them save time and effort. There are also a variety of free tutorials available on the Internet, and even YouTube videos, to help you get started.

**NOTE:** *Before installing most IDEs you must have the JDK installed on your computer. Also, if you choose to use an IDE, be sure that it supports the latest version of the Java programming language.*