

Configuration for Lab.

Bok, Jong Soon
javaexpert@nate.com

<https://github.com/swacademy/JavaSE>

Programming the First Java code

To write your first program, you need:

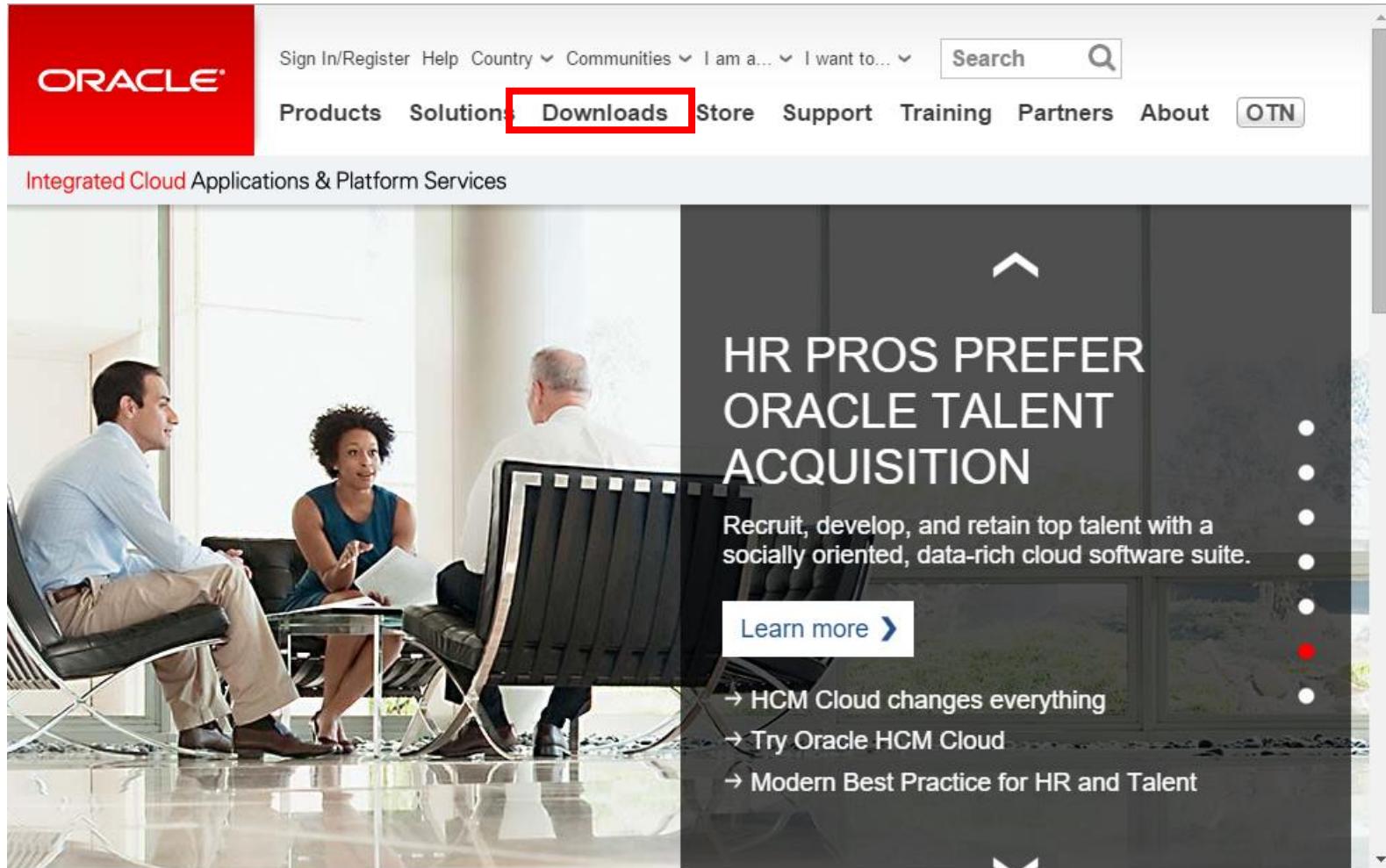
- The Java™ 8 Platform, Standard Edition.
 - Download the JDK, not the JRE.
 - Download API Specifications & Documentation.
 - Consult the [installation instructions](#).
- A Text Editor.
- IDE (Integrated Development Environment) tools
 - Option

Installation to Java 8 for Windows 10 64-bit Platform



Downloading JDK 8 Update 91 for Windows Platform

- Connect to <http://www.oracle.com/index.html>



Downloading JDK 8 Update 91 for Windows Platform

The screenshot shows the Oracle website homepage at www.oracle.com/index.html. A large hand cursor icon is positioned over the 'Java for Developers' link in the 'Popular Downloads' sidebar.

Popular Downloads

- Java for Developers
- Java for Your Computer
- Java SE
- Solaris
- MySQL
- Oracle Database
- Middleware
- Oracle Developer VMs

Products **Solutions** **Downloads** **Store** **Support** **Training** **Partners** **About** **OTN**

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- Oracle Database
- Oracle Database 11g Express Edition
- MySQL
- Oracle Berkeley DB
- Oracle Instant Client
- Oracle Application Express
- [See All...](#)

Enterprise Management

- Oracle Enterprise Manager
- Oracle Application Testing Suite
- [See All...](#)

Server and Storage Systems

- Solaris
- Linux and Oracle VM
- Firmware
- [See All...](#)

Developer Tools

- SQL Developer
- JDeveloper and ADF
- Developer Tools for Visual Studio
- Enterprise Pack for Eclipse
- NetBeans IDE
- [See All...](#)

Applications

- Oracle Fusion Applications, Oracle E-Business Suite, PeopleSoft, JD Edwards, Siebel CRM
- Agile
- AutoVue
- [See All...](#)

Downloading JDK 8 (Cont.)

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

The screenshot shows the Oracle Java SE Downloads page. On the left is a sidebar with links to various Java categories. At the top, there's a navigation bar with tabs for Overview, Downloads (which is selected), Documentation, Community, Technologies, and Training. The main content area has a title "Java SE Downloads". It features two download options: "Java Platform (JDK) 8u91 / 8u92" (highlighted with a red box and a hand cursor pointing at the "DOWNLOAD" button) and "NetBeans with JDK 8". Below these are sections for "Java SE 8u91 / 8u92" and "Platform, Standard Edition". The "Platform, Standard Edition" section includes links for "Installation Instructions", "Release Notes", "Oracle License", "Java SE Products", and "Third Party Licenses". To the right, there are links for "Java SDKs and Tools" and "Java Resources".

Downloading JDK 8 (Cont.)

www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

Oracle Technology Network > Java > Java SE > Downloads

Java SE Development Kit 8 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- Java Developer Newsletter: From your Oracle account, select **Subscriptions**, expand **Technology**, and subscribe to Java.
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

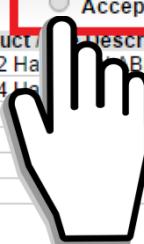
JDK 8u91 Checksum
JDK 8u92 Checksum

Java SE Development Kit 8u91

You must accept the Oracle Binary Code License Agreement for Java SE to download this software

Accept License Agreement Decline License Agreement

Product	Description	File Size	Download
Linux ARM 32 Ha	BI	77.72 MB	jdk-8u91-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Ha		74.69 MB	jdk-8u91-linux-arm64-vfp-hflt.tar.gz
Linux x86		154.74 MB	jdk-8u91-linux-i586.rpm
Linux x86		174.92 MB	jdk-8u91-linux-i586.tar.gz
Linux x64		152.74 MB	jdk-8u91-linux-x64.rpm
Linux x64		172.97 MB	jdk-8u91-linux-x64.tar.gz



Java SDKs and Tools

- [Java SE](#)
- [Java EE and Glassfish](#)
- [Java ME](#)
- [Java Card](#)
- [NetBeans IDE](#)
- [Java Mission Control](#)

Java Resources

- [Java APIs](#)
- [Technical Articles](#)
- [Demos and Videos](#)
- [Forums](#)
- [Java Magazine](#)
- [Java.net](#)
- [Developer Training](#)
- [Tutorials](#)
- [Java.com](#)

Downloading JDK 8 (Cont.)

Java SE Development Kit 8u91

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.72 MB	jdk-8u91-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	74.69 MB	jdk-8u91-linux-arm64-vfp-hflt.tar.gz
Linux x86	154.74 MB	jdk-8u91-linux-i586.rpm
Linux x86	174.92 MB	jdk-8u91-linux-i586.tar.gz
Linux x64	152.74 MB	jdk-8u91-linux-x64.rpm
Linux x64	172.97 MB	jdk-8u91-linux-x64.tar.gz
Mac OS X	227.29 MB	jdk-8u91-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.59 MB	jdk-8u91-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	98.95 MB	jdk-8u91-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140.29 MB	jdk-8u91-solaris-x64.tar.Z
Solaris x64	96.78 MB	jdk-8u91-solaris-x64.tar.gz
Windows x86	162.29 MB	jdk-8u91-windows-i586.exe
Windows x64	187.4 MB	jdk-8u91-windows-x64.exe

Java SE Development Kit 8u91

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

Accept License Agreement

Decline License Agreement



Installing JDK 8

Run X

Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: C:\Downloads\jdk-8u91-windows-x64.exe ▼

OK Cancel [Browse...](#)

User Account Control X

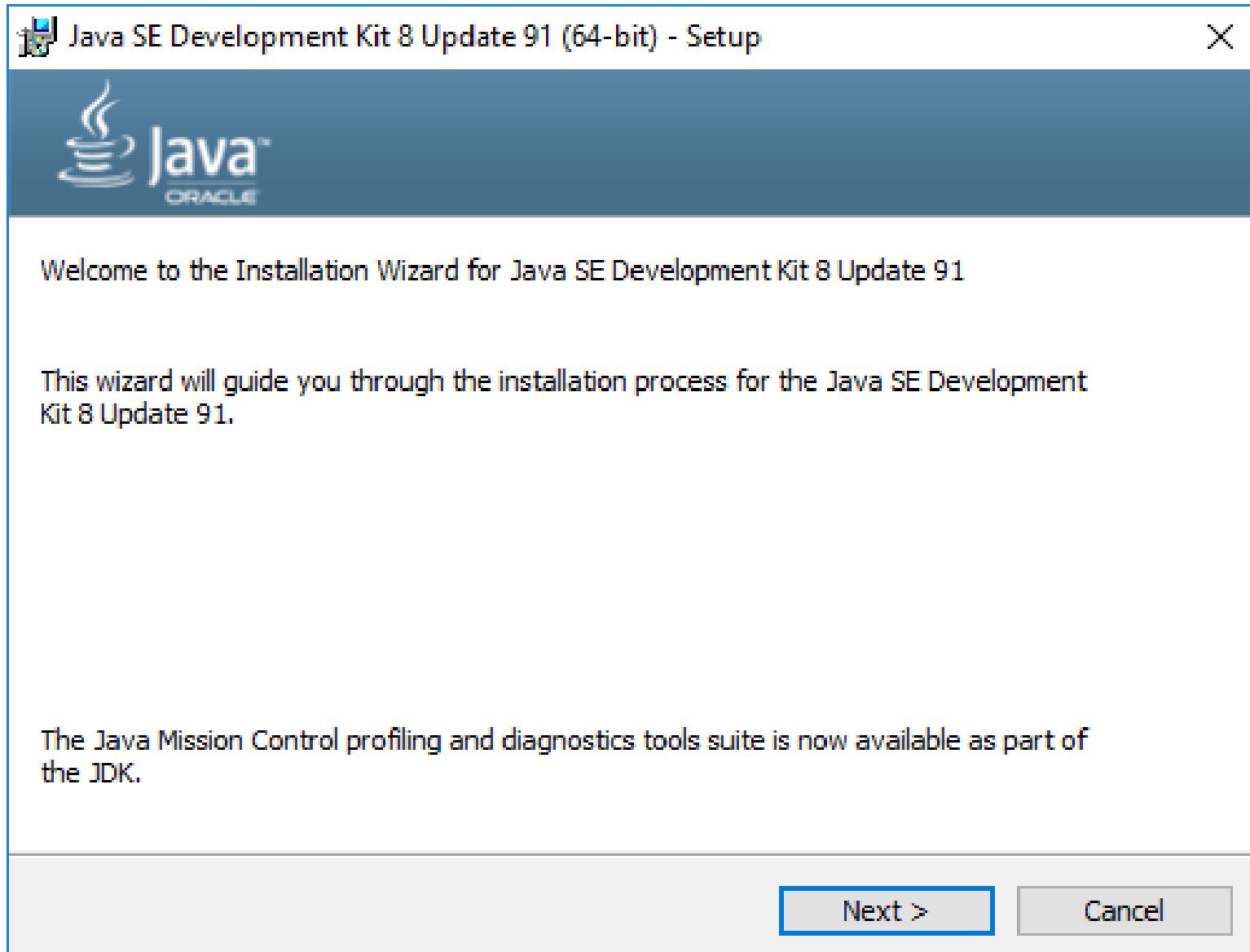
Do you want to allow this app to make changes to your PC?

 Program name: Java SE Development Kit 8 Update 91
Verified publisher: Oracle America, Inc.
File origin: Hard drive on this computer

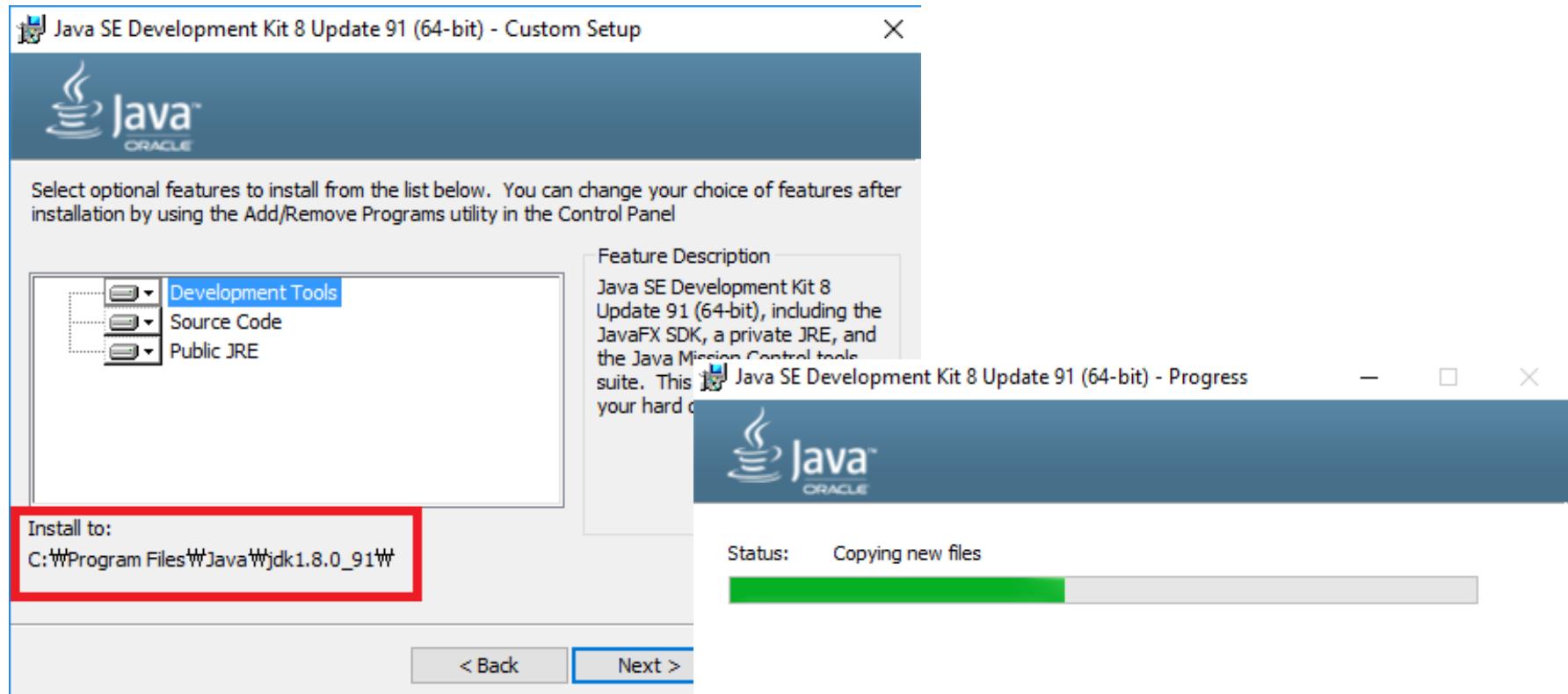
Yes No

[Show details](#) [Change when these notifications appear](#)

Installing JDK 8 (Cont.)

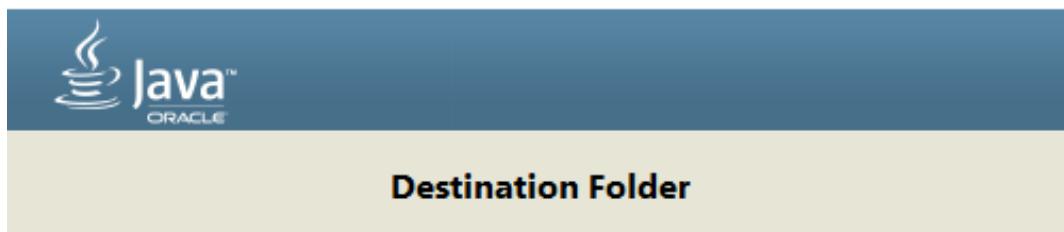


Installing JDK 8 (Cont.)



Installing JDK 8 (Cont.)

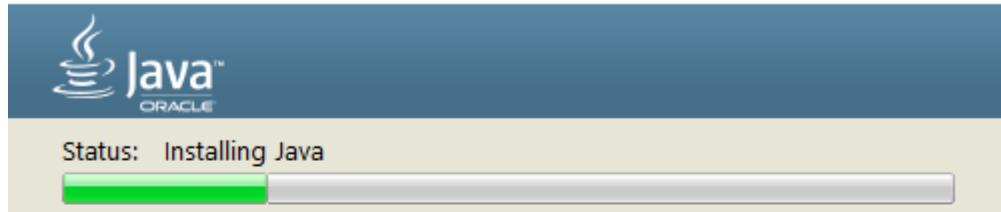
Java Setup - Destination Folder



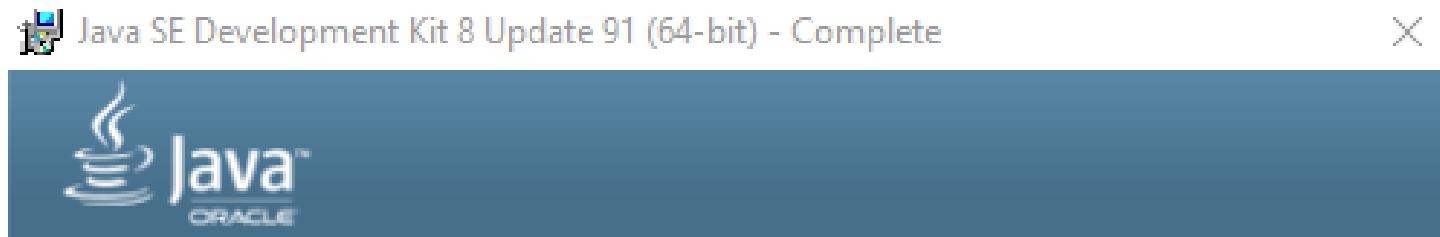
Click "Change" to install Java to a different folder.

Install to:
C:\Program Files\Java\jre1.8.0_91

Java Setup - Progress



Installing JDK 8 (Cont.)



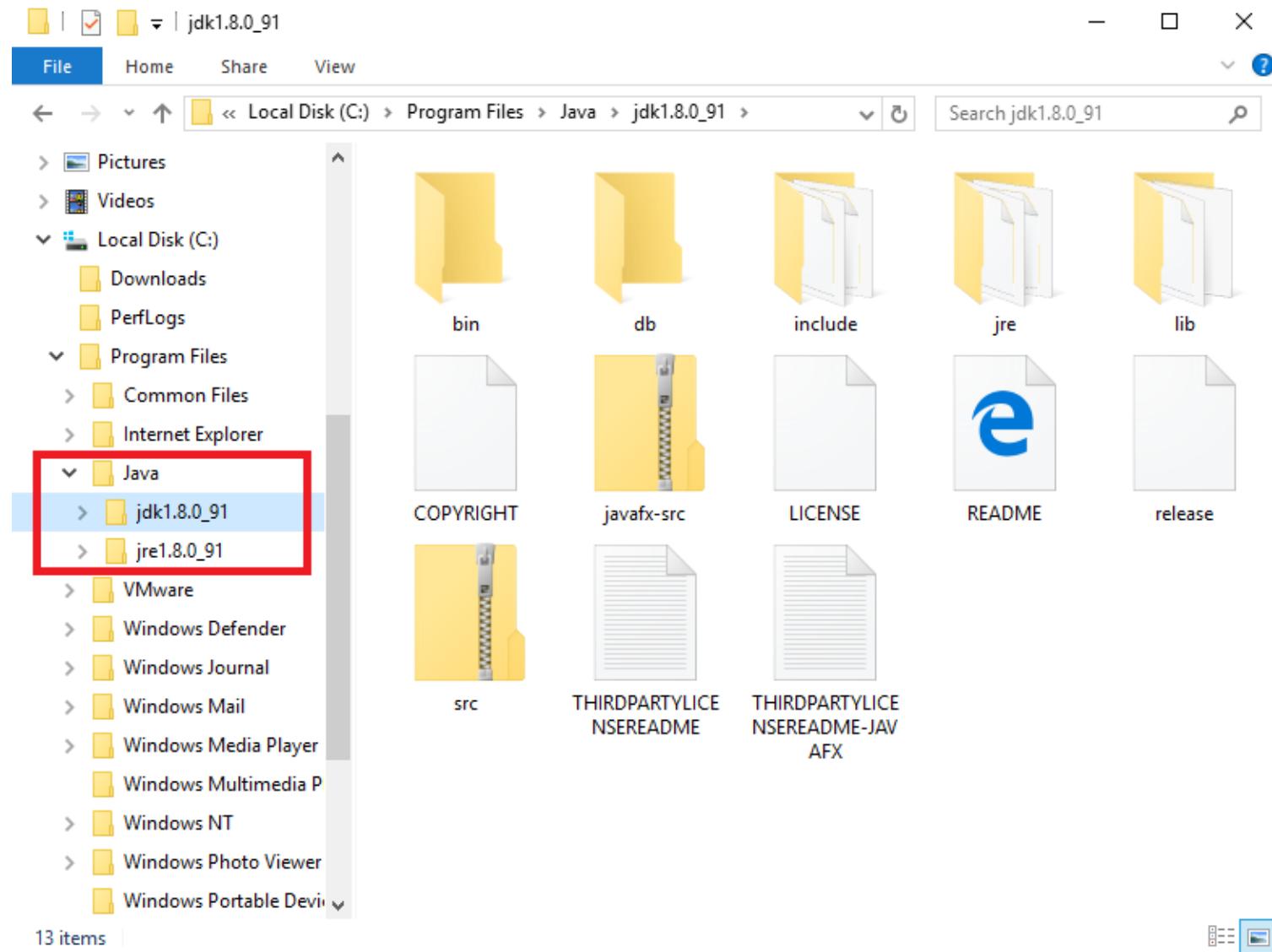
Java SE Development Kit 8 Update 91 (64-bit) Successfully Installed

Click [Next Steps](#) to access tutorials, API documentation, developer guides, release notes and more to help you get started with the JDK.

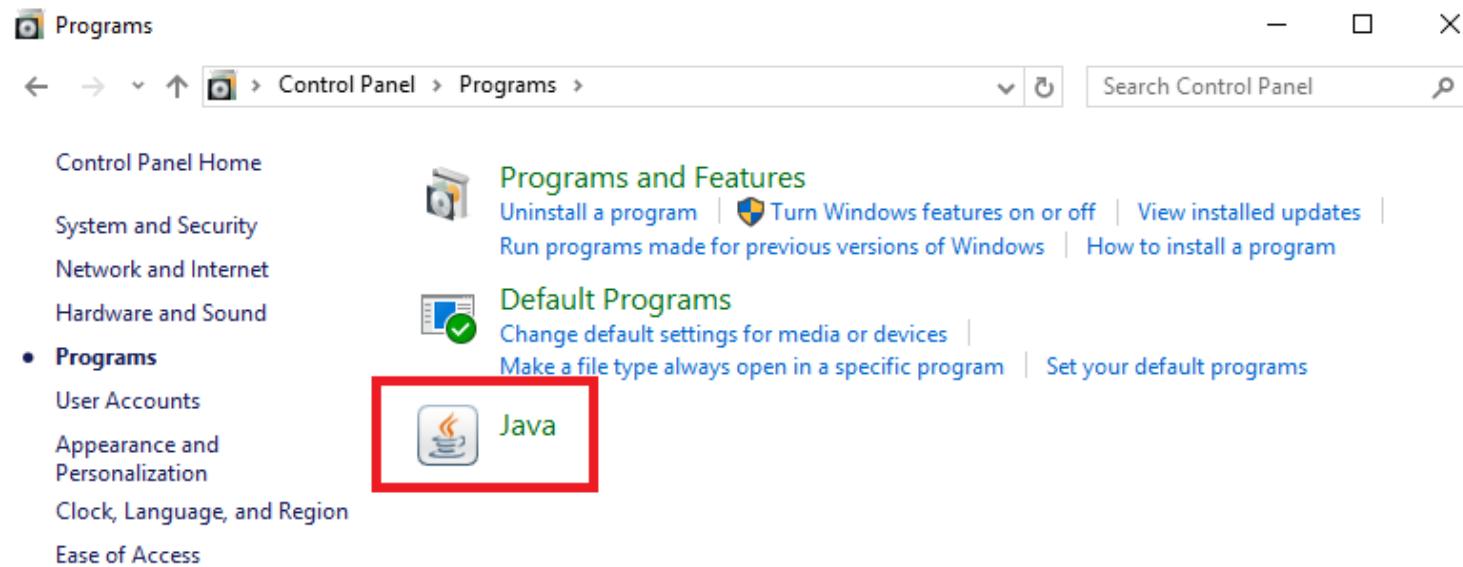
[Next Steps](#)

[Close](#)

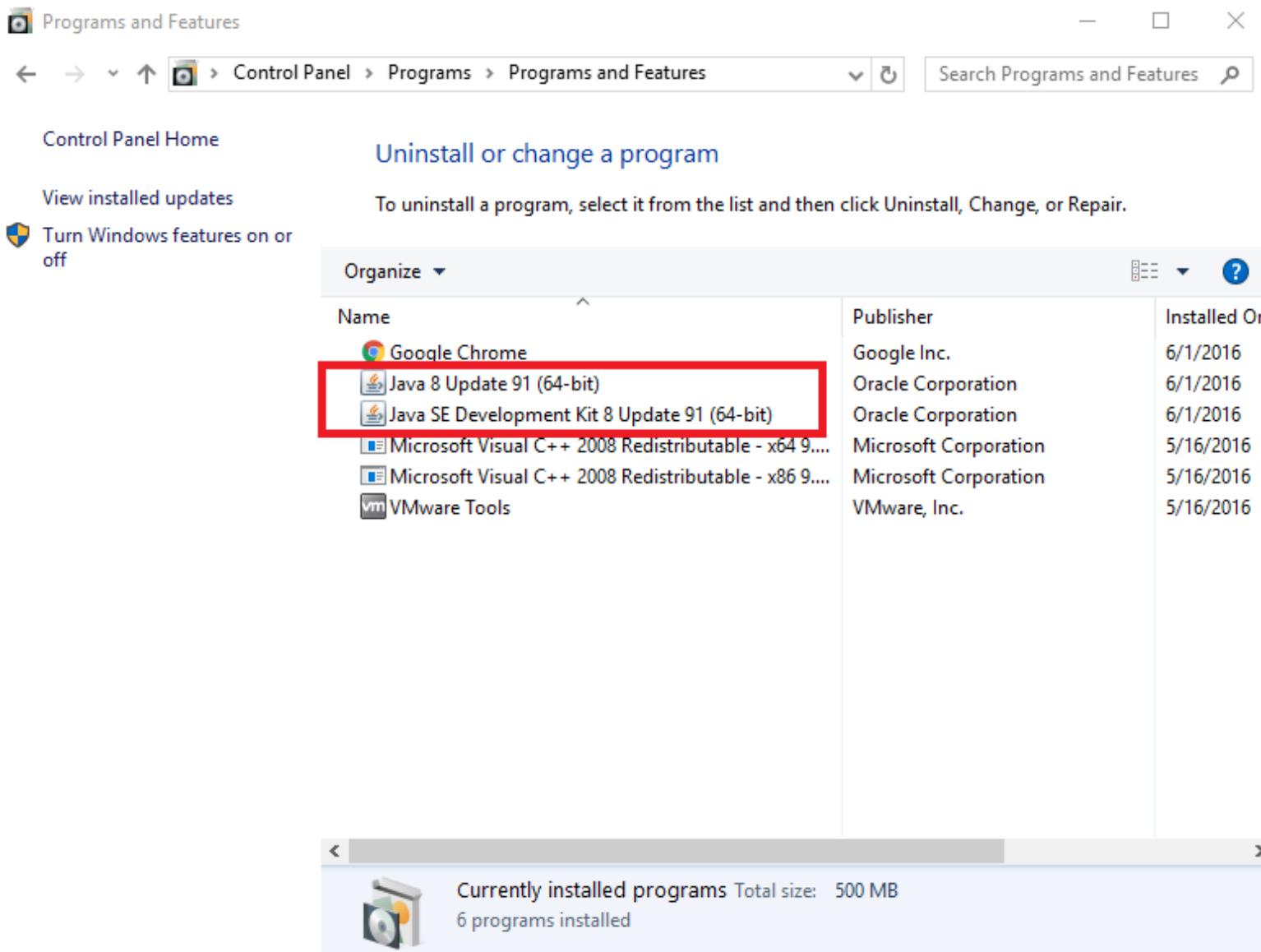
Checking Java 8



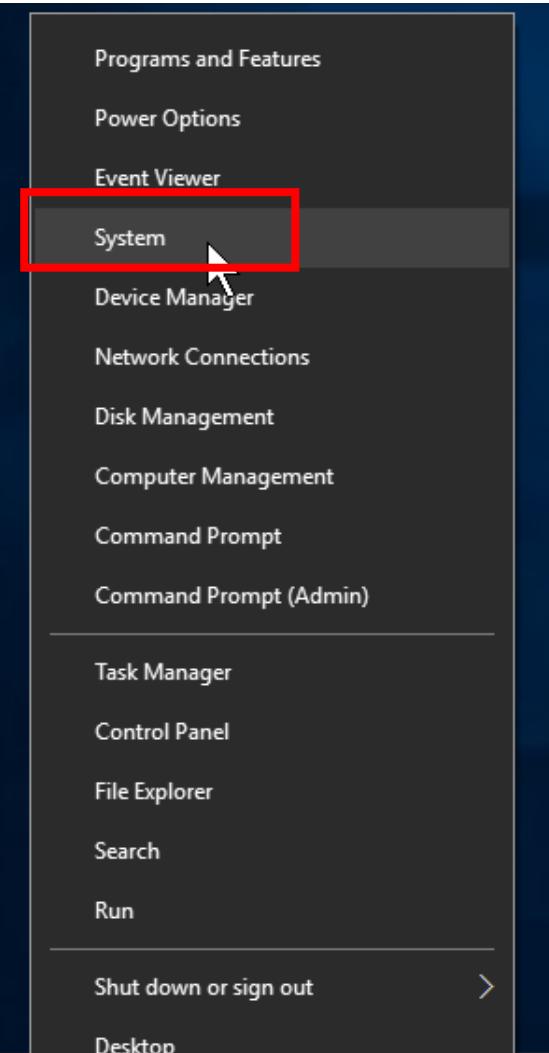
Checking Java 8 (Cont.)



Checking Java 8 (Cont.)

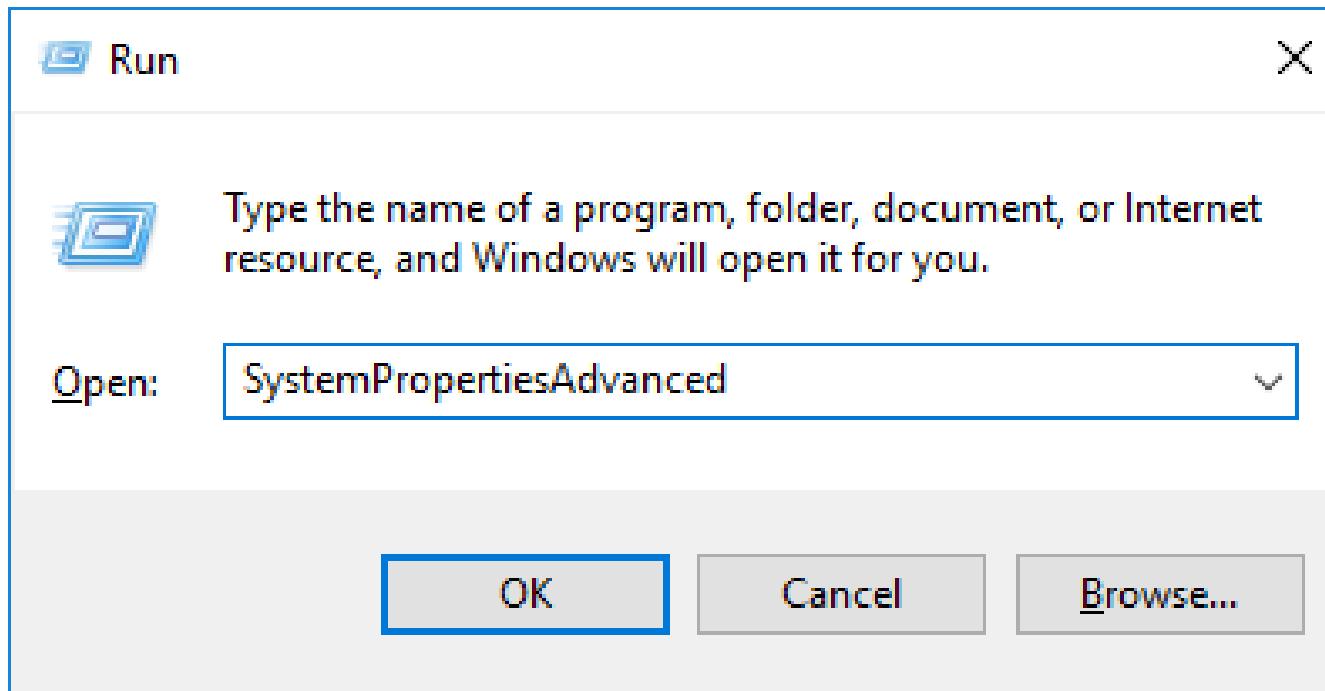


Configuring JDK Environment

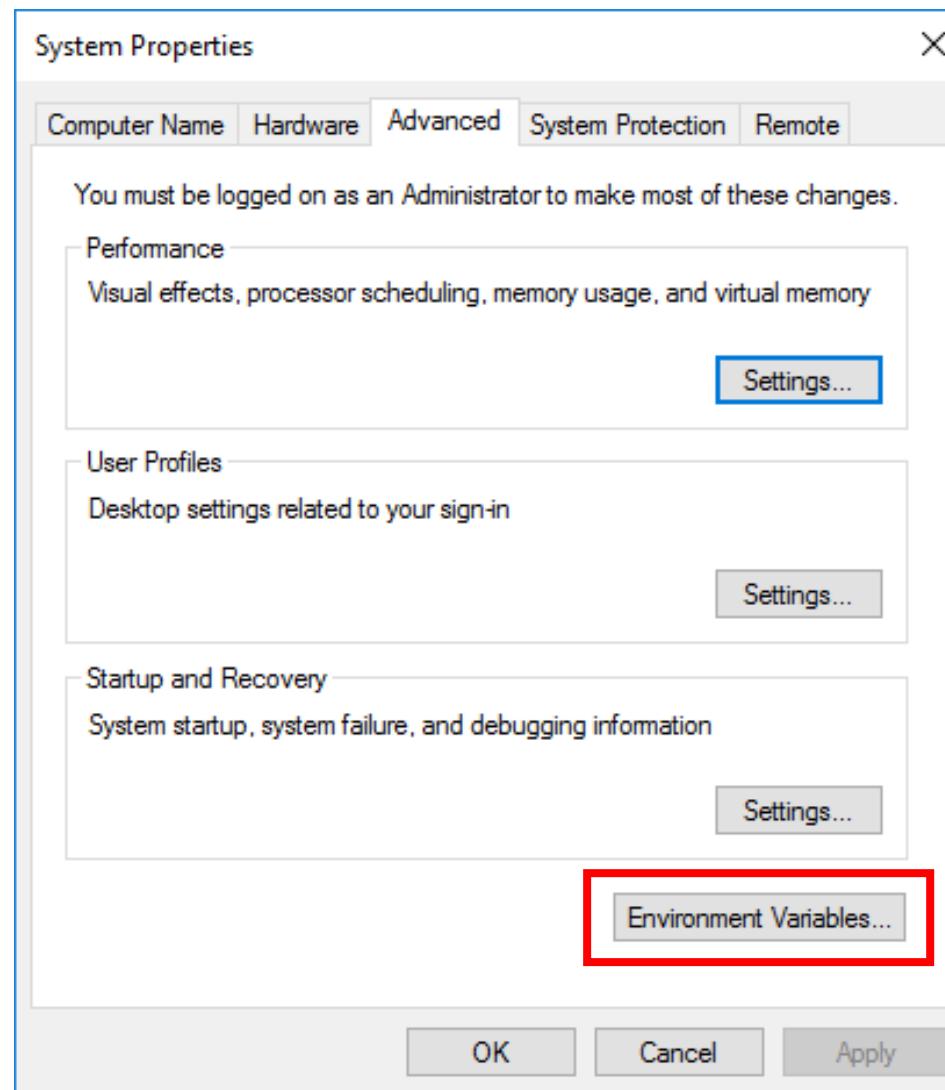


A screenshot of the Windows Control Panel System settings page. The title bar says "System". The breadcrumb navigation shows Control Panel > System and Security > System. A search bar is at the top right. The main content area has a heading "View basic information about your computer". It shows the Windows edition as "Windows 10 Enterprise Evaluation" and the copyright notice "© 2015 Microsoft Corporation. All rights reserved." To the right is the Windows 10 logo. Below this is a section titled "System" with details: Processor (Intel(R) Xeon(R) CPU E3-1231 v3 @ 3.40GHz 3.39 GHz), Installed memory (RAM) (8.00 GB), System type (64-bit Operating System, x64-based processor), and Pen and Touch (Touch Support with 8 Touch Points). Further down are sections for Computer name, domain, and workgroup settings (Computer name: DESKTOP-EOK2DPG, Full computer name: DESKTOP-EOK2DPG, Computer description: , Workgroup: WORKGROUP), Windows activation (Windows is activated, Read the Microsoft Software License Terms), and Product ID (Product ID: 00329-20000-00001-AA384). A "Change product key" button is at the bottom right. A large hand cursor icon is overlaid on the "Advanced system settings" link in the left sidebar.

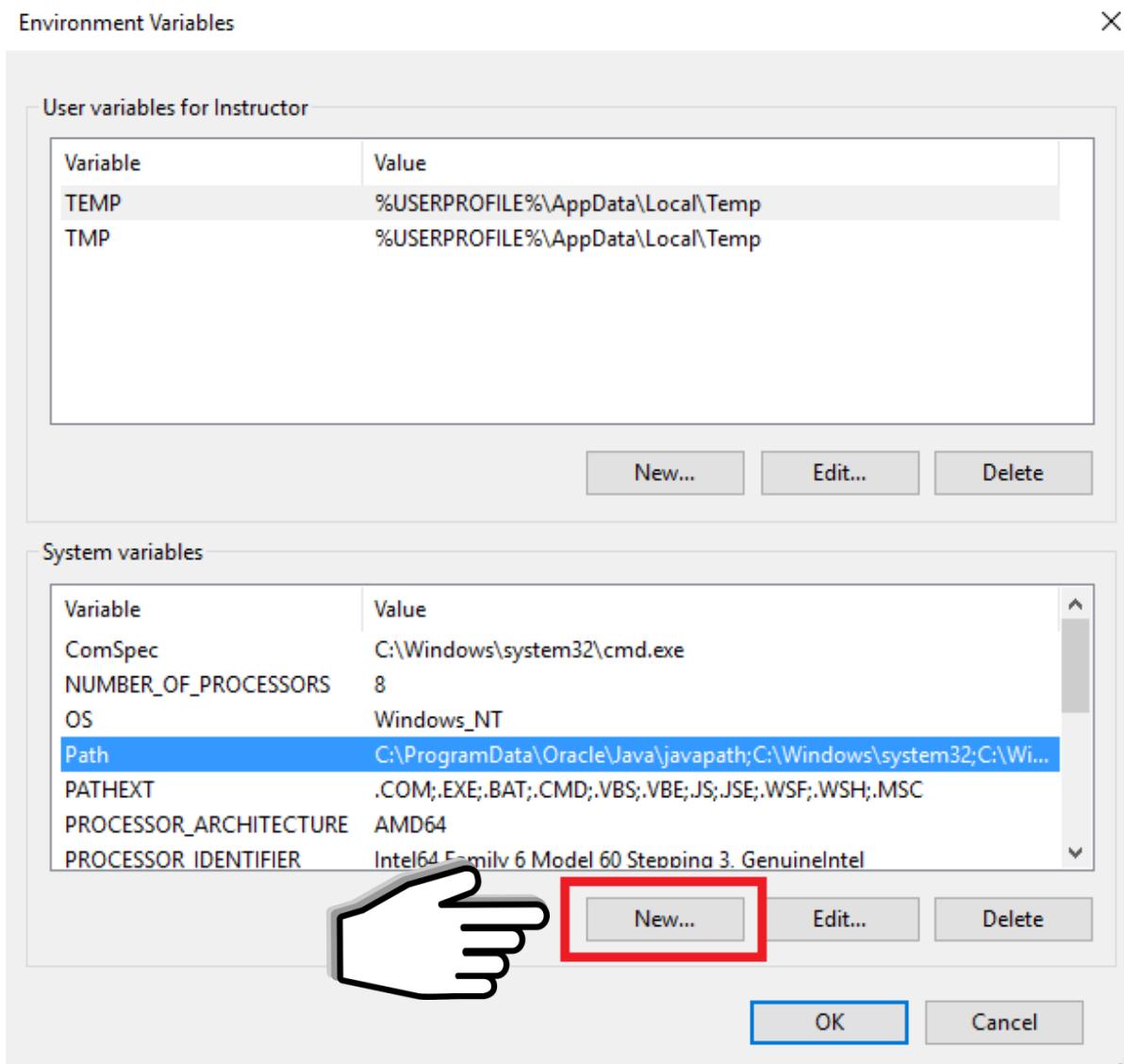
Or



Configuring JDK Environment (Cont.)



Configuring JDK Environment (Cont.)



Configuring JDK Environment (Cont.)

New System Variable

Variable name: JAVA_HOME

Variable value: C:\Program Files\Java\jdk1.8.0_91

Environment Variables

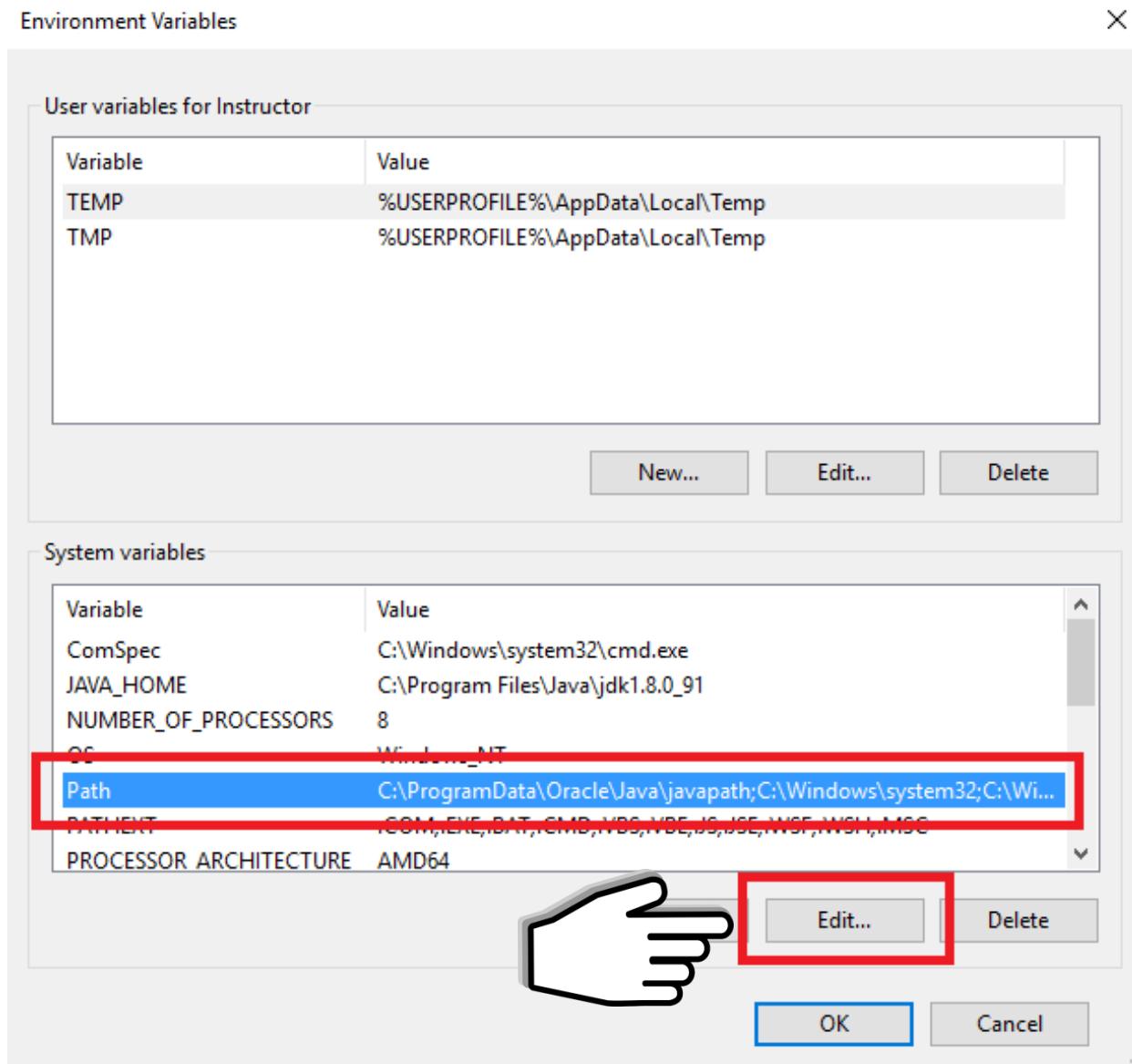
User variables for Instructor

Variable	Value
TEMP	%USERPROFILE%\AppData\Local\Temp
TMP	%USERPROFILE%\AppData\Local\Temp

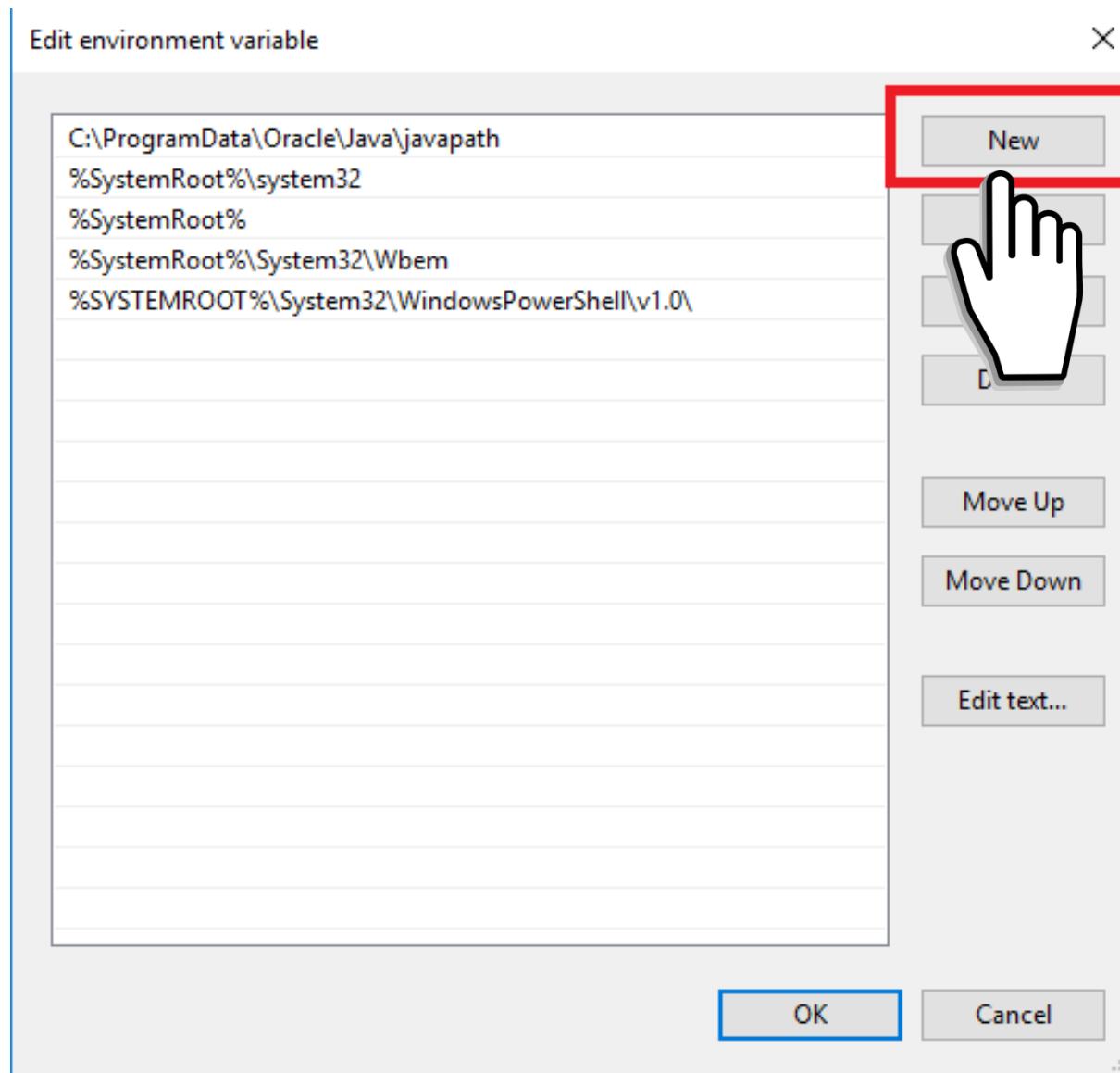
System variables

Variable	Value
ComSpec	C:\Windows\system32\cmd.exe
JAVA_HOME	C:\Program Files\Java\jdk1.8.0_91
NUMBER_OF_PROCESSORS	0
OS	Windows_NT
Path	C:\ProgramData\Oracle\Java\javapath;C:\Windows\system32;C:\Wi...
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTURE	AMD64

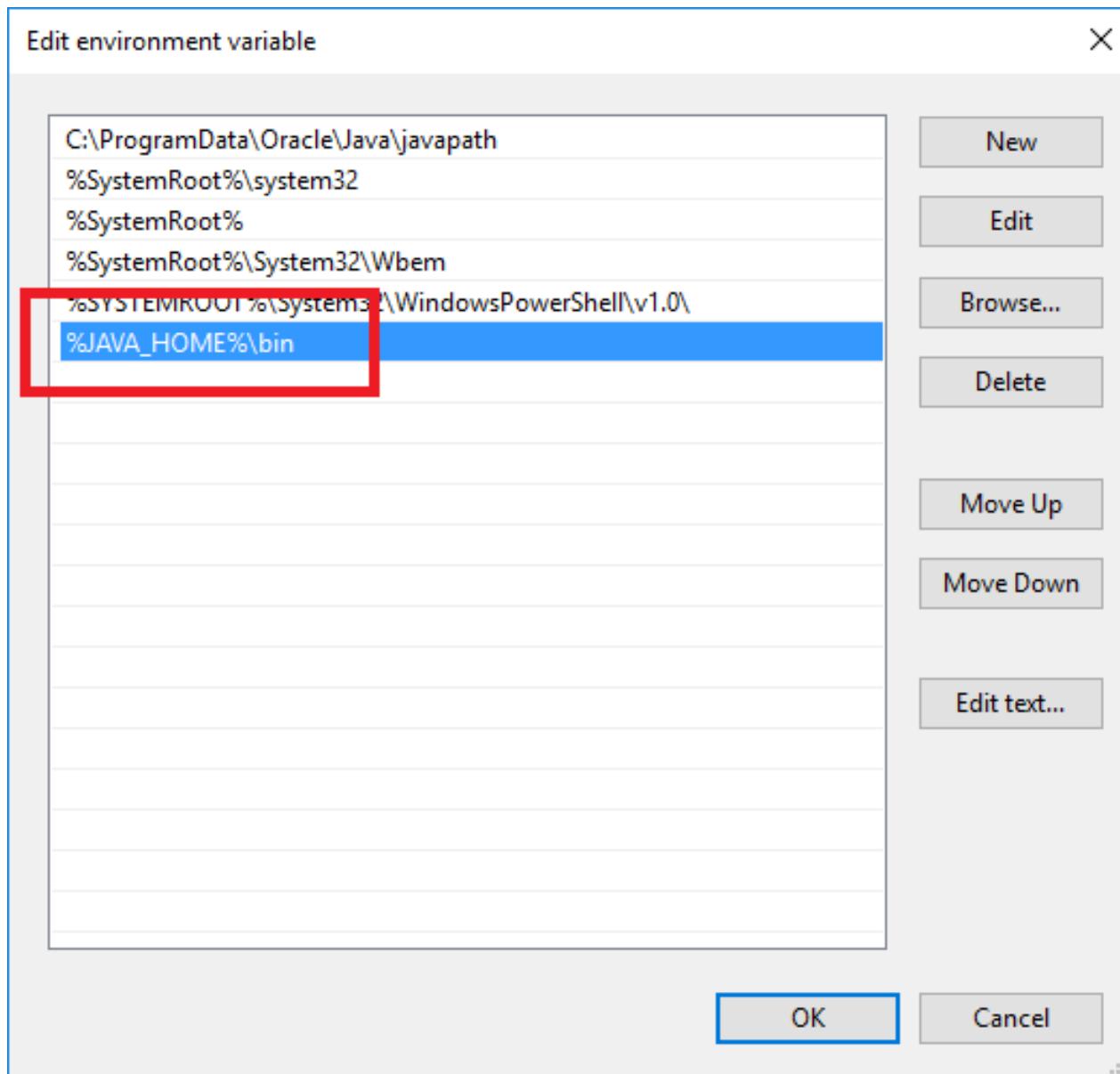
Configuring JDK Environment (Cont.)



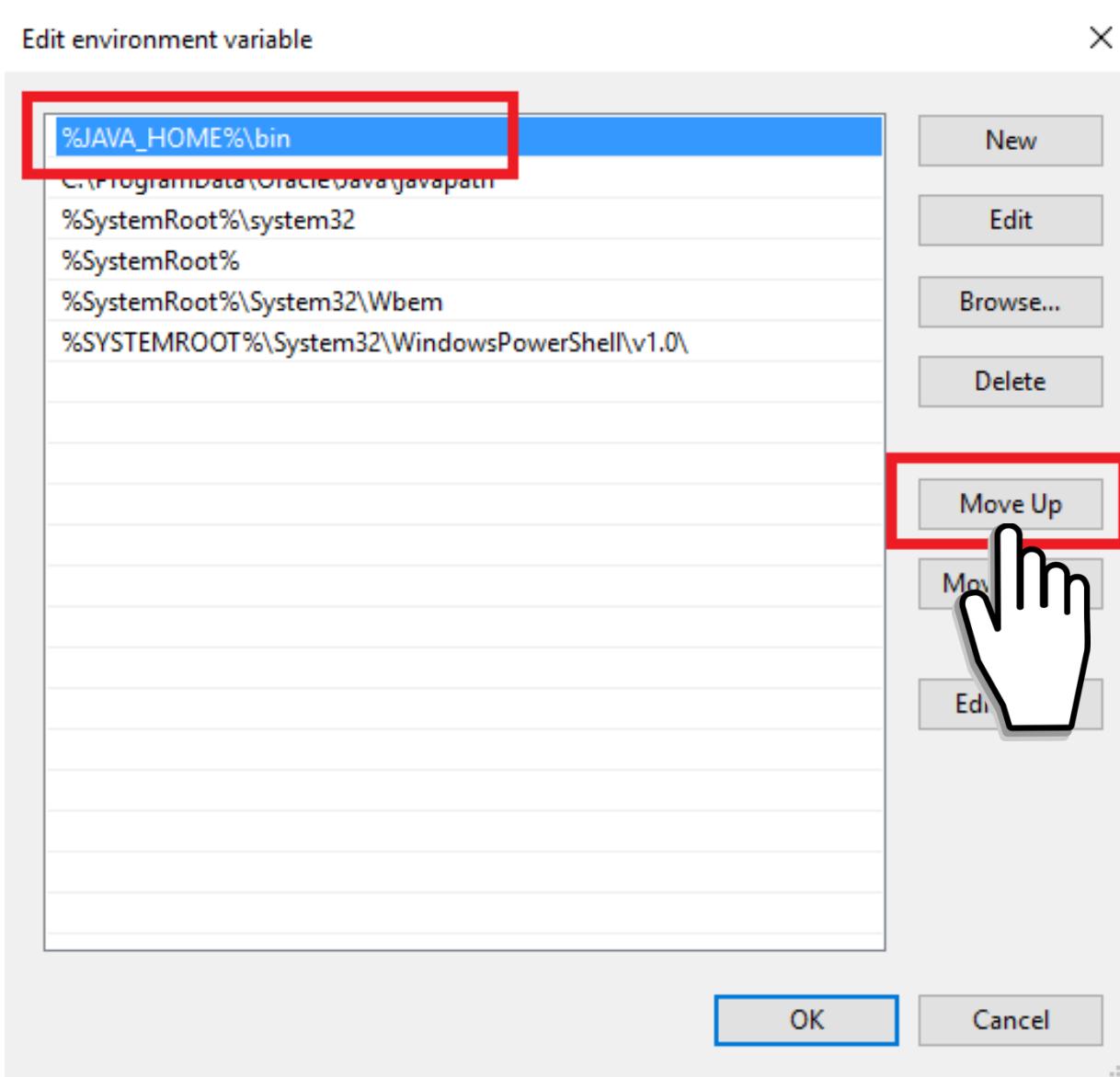
Configuring JDK Environment (Cont.)



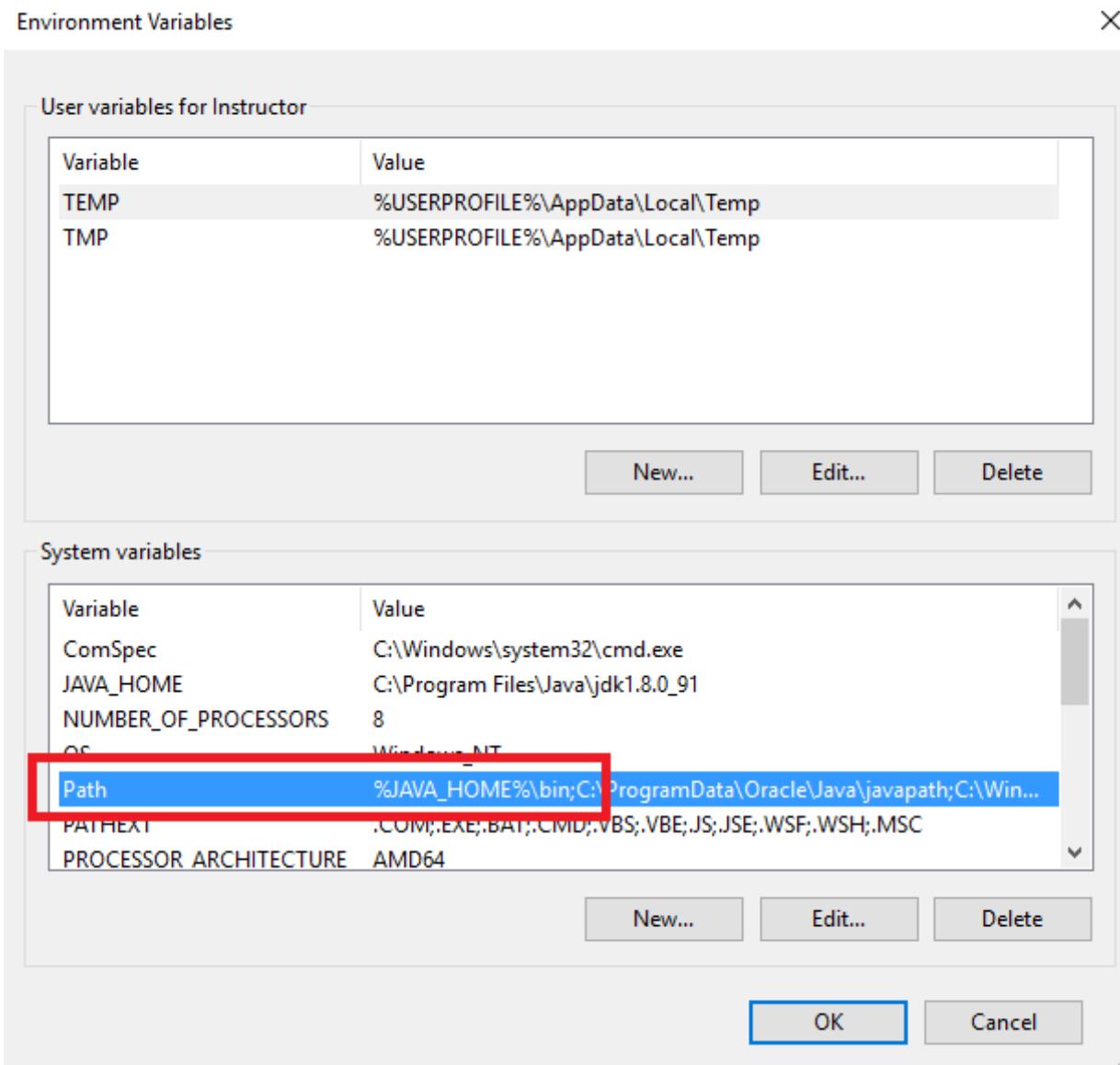
Configuring JDK Environment (Cont.)



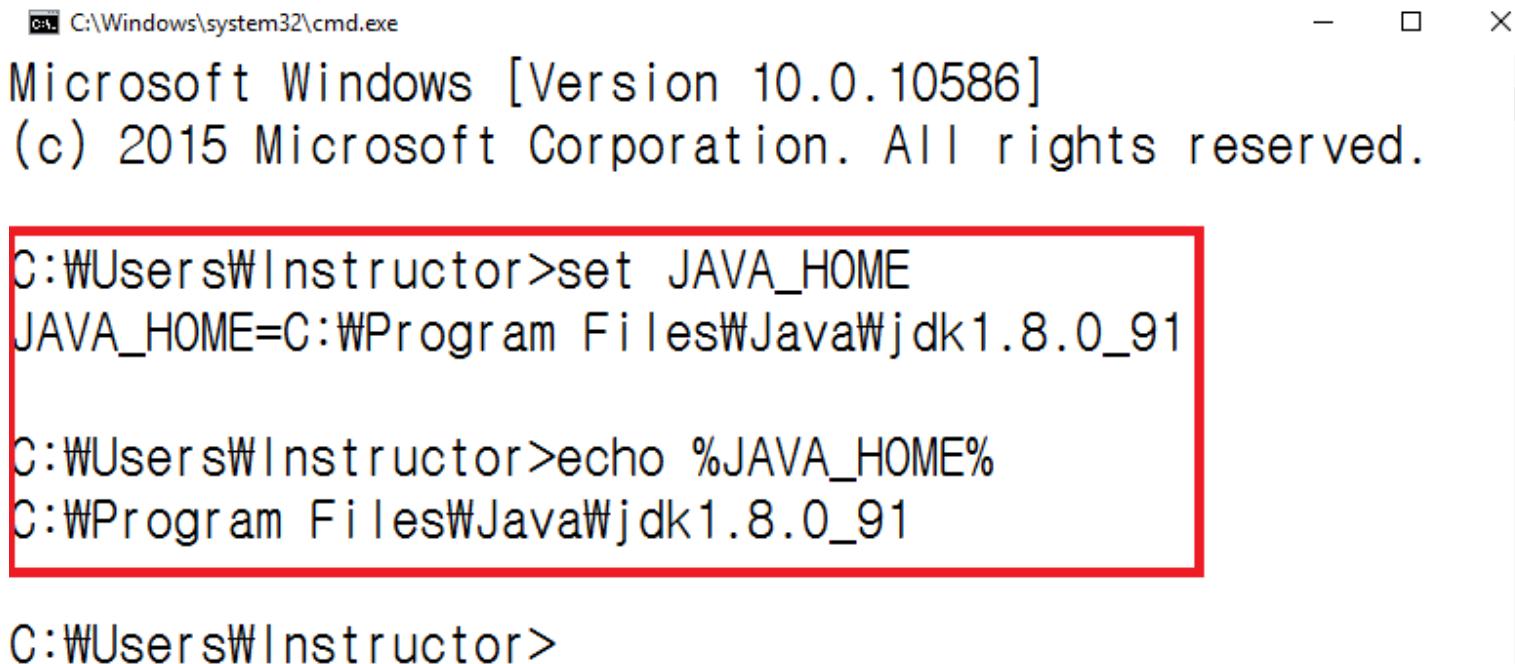
Configuring JDK Environment (Cont.)



Configuring JDK Environment (Cont.)



Configuring JDK Environment (Cont.)



A screenshot of a Windows Command Prompt window titled "C:\Windows\system32\cmd.exe". The window shows the following text:

```
Microsoft Windows [Version 10.0.10586]
(c) 2015 Microsoft Corporation. All rights reserved.

C:\Users\Instructor>set JAVA_HOME
JAVA_HOME=C:\Program Files\Java\jdk1.8.0_91

C:\Users\Instructor>echo %JAVA_HOME%
C:\Program Files\Java\jdk1.8.0_91

C:\Users\Instructor>
```

The command "set JAVA_HOME" and its output "JAVA_HOME=C:\Program Files\Java\jdk1.8.0_91" are highlighted with a red rectangular box.

Configuring JDK Environment (Cont.)

```
C:\Users\Instructor>
C:\Users\Instructor>set path
Path=C:\Program Files\Java\jdk1.8.0_91\bin;C:\ProgramData\Oracle\Java\javapath;C:\Windows\system32;C:\Windows;
C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\1.0\
PATHEXT=.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC

C:\Users\Instructor>echo %PATH%
C:\Program Files\Java\jdk1.8.0_91\bin;C:\ProgramData\Oracle\Java\javapath;C:\Windows\system32;C:\Windows;
C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\1.0\

C:\Users\Instructor>_
```

Testing JDK Environment

```
C:\Users\Instructor>javac
Usage: javac <options> <source files>
where possible options include:
-g
-g:none
-g:{lines,vars,source}
-nowarn
-verbose
er is doing
-deprecation
ted APIs are used
-classpath <path>
s and annotation processors
-cp <path>
s and annotation processors
-sourcepath <path>
les
-bootclasspath <path>
files
-extdirs <dirs>
ions
-endorseddirs <dirs>
ds path
-proc:{none,only}

C:\Users\Instructor>java
Usage: java [-options] class [args...]
Out|      (to execute a class)
        or  java [-options] -jar jarfile [args...]
Out|      (to execute a jar file)
where options include:
Spec| -d32          use a 32-bit data model if available
     -d64          use a 64-bit data model if available
Spec| -server       to select the "server" VM
           The default VM is server.
Spec| -cp <class search path of directories and zip/jar files>
Over| -classpath <class search path of directories and zip/jar files
     >
Over|           A ; separated list of directories, JAR archives,
     and ZIP archives to search for class files.
Over| -D<name>=<value>
Cont|           set a system property
     -verbose:[class|gc|jni]
           enable verbose output
     -version      print product version and exit
     -version:<value>
                   Warning: this feature is deprecated and will be
removed
```

Testing JDK Environment (Cont.)

```
C:\Windows\system32\cmd.exe
C:\Users\Instructor>
C:\Users\Instructor>java -version
java version "1.8.0_91"
Java(TM) SE Runtime Environment (build 1.8.0_91-b15)
Java HotSpot(TM) 64-Bit Server VM (build 25.91-b15, mixed mode)

C:\Users\Instructor>javac -version
javac 1.8.0_91

C:\Users\Instructor>
```

Downloading JDK Documentation

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

Additional Resources	
<p>Oracle Java Advanced Management Console Advanced Management Console (AMC) enables desktop administrators to track and manage Java usage across their organization -- understanding which Java versions are used with which applications and managing compatibility/security. AMC is a commercial product available for Java users who license Java SE Advanced or Java SE Advanced Suite. Learn More ➔</p>	DOWNLOAD
<p>Java SE 8 Documentation</p> <ul style="list-style-type: none">▪ Java SE 8 Documentation▪ Docs Installation Instructions	DOWNLOAD
<p>Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files for JDK/JRE 8</p>	DOWNLOAD

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Java SE Development Kit 8 Documentation

Java SE Development Kit 8u91 Documentation

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Product / File Description	File Size	Download
Documentation	89.08 MB	jdk-8u91-docs-all.zip

JavaFX API Documentation

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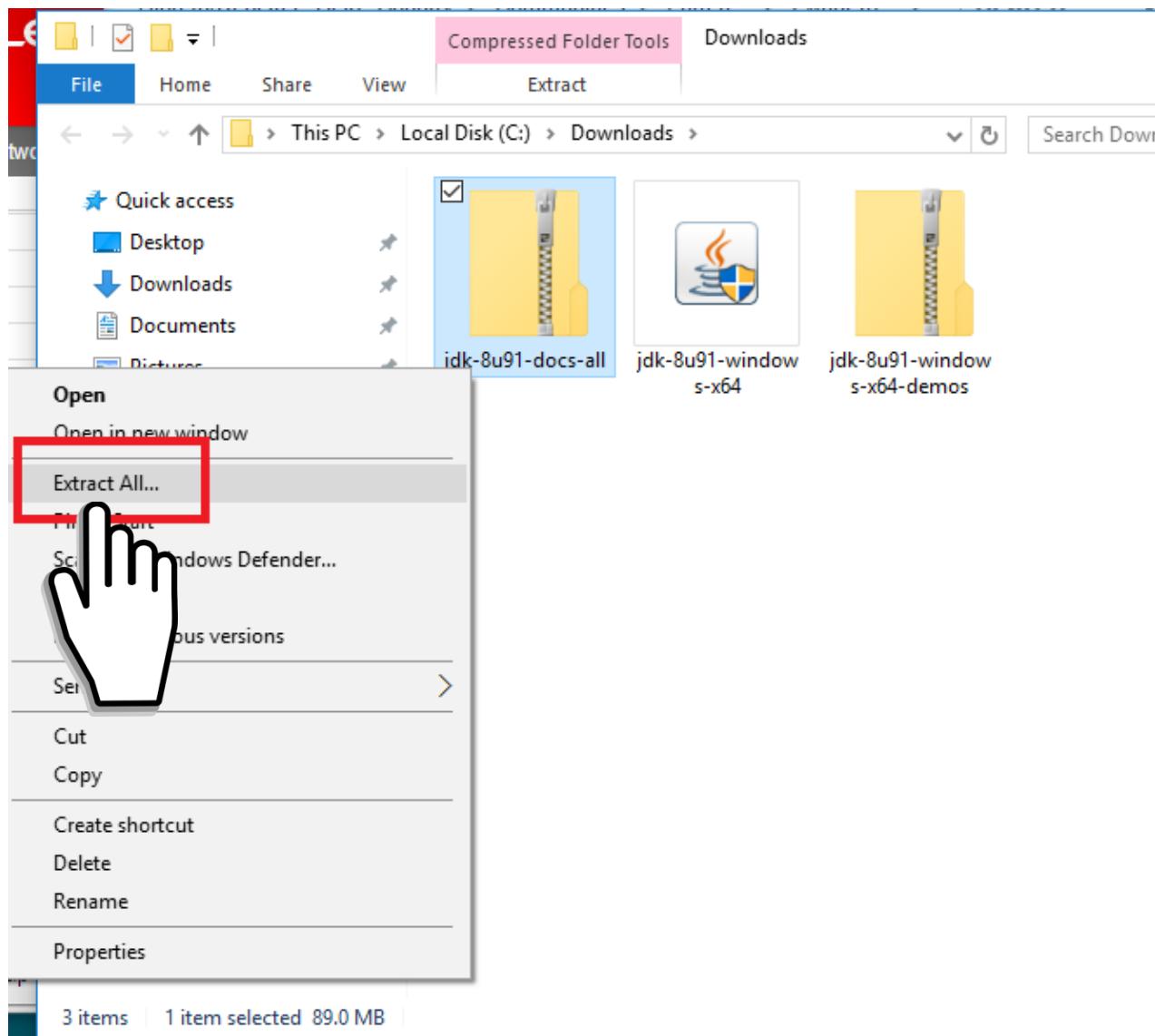
Thank you for accepting the Java SE Development Kit 8 Documentation License Agreement; you may now download this software.

Product / File Description	File Size	Download
Documentation	89.08 MB	jdk-8u91-docs-all.zip

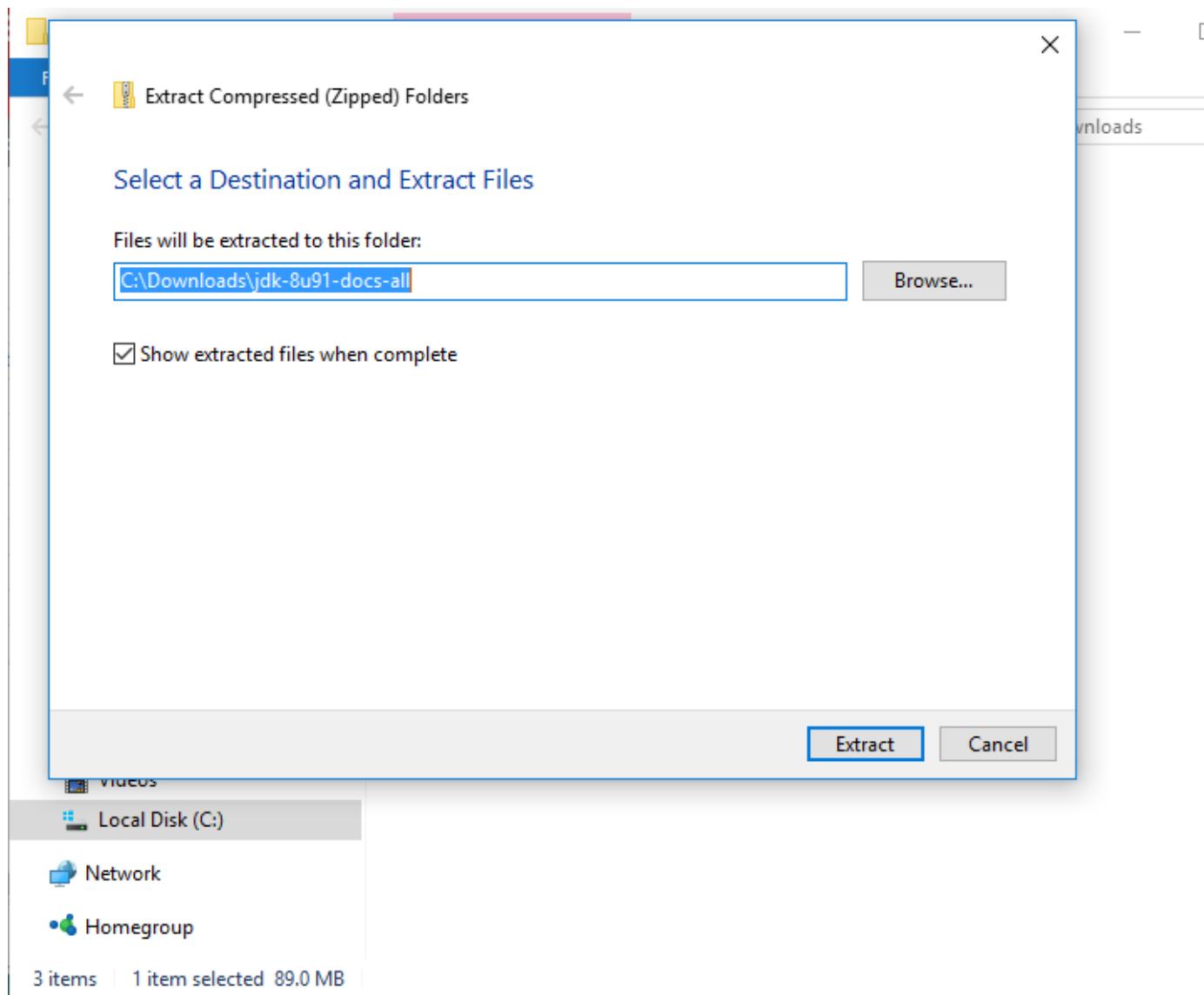
JavaFX API Documentation

You must accept the Oracle Legal Notices to download this software.

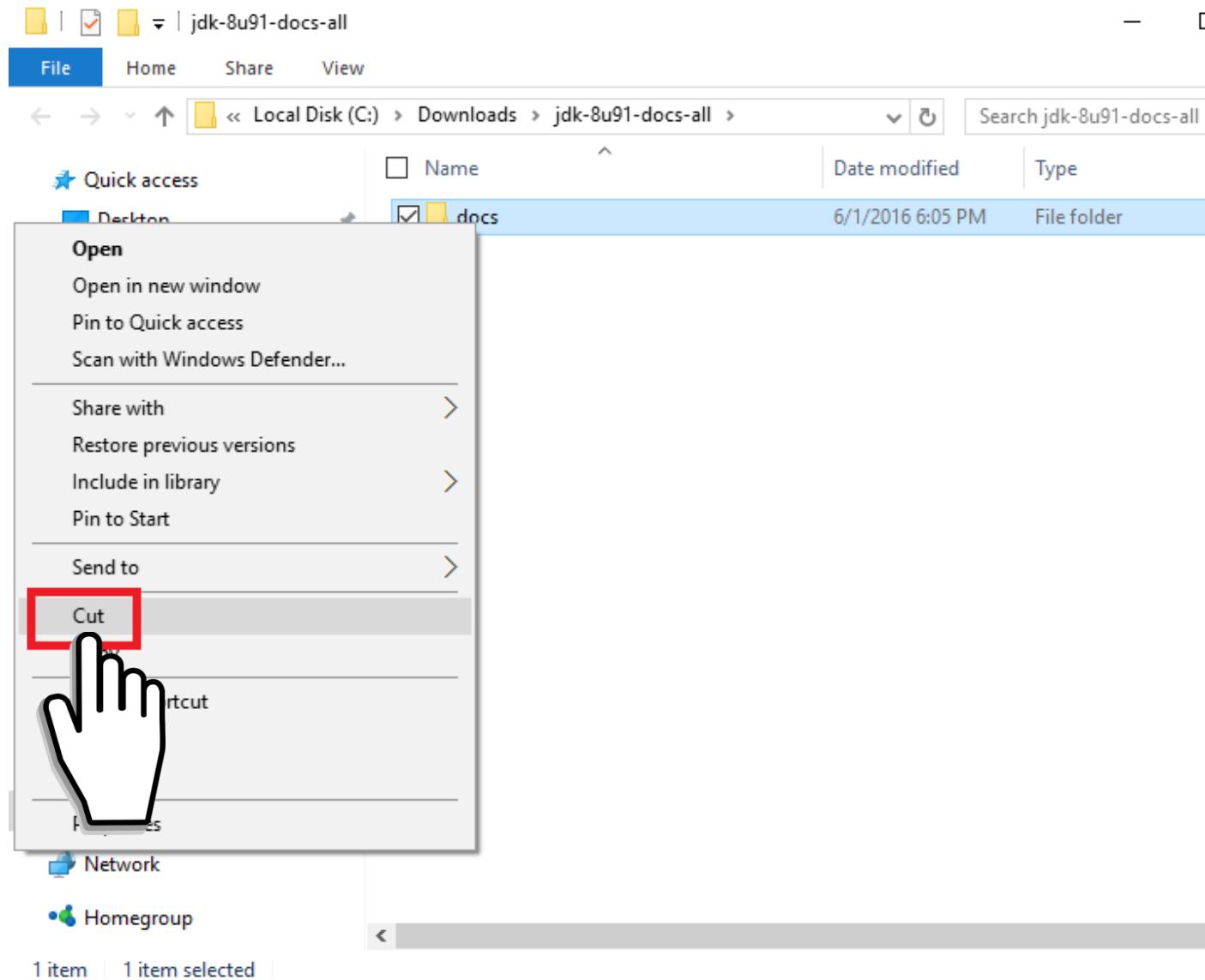
Unzipping JDK Documentation



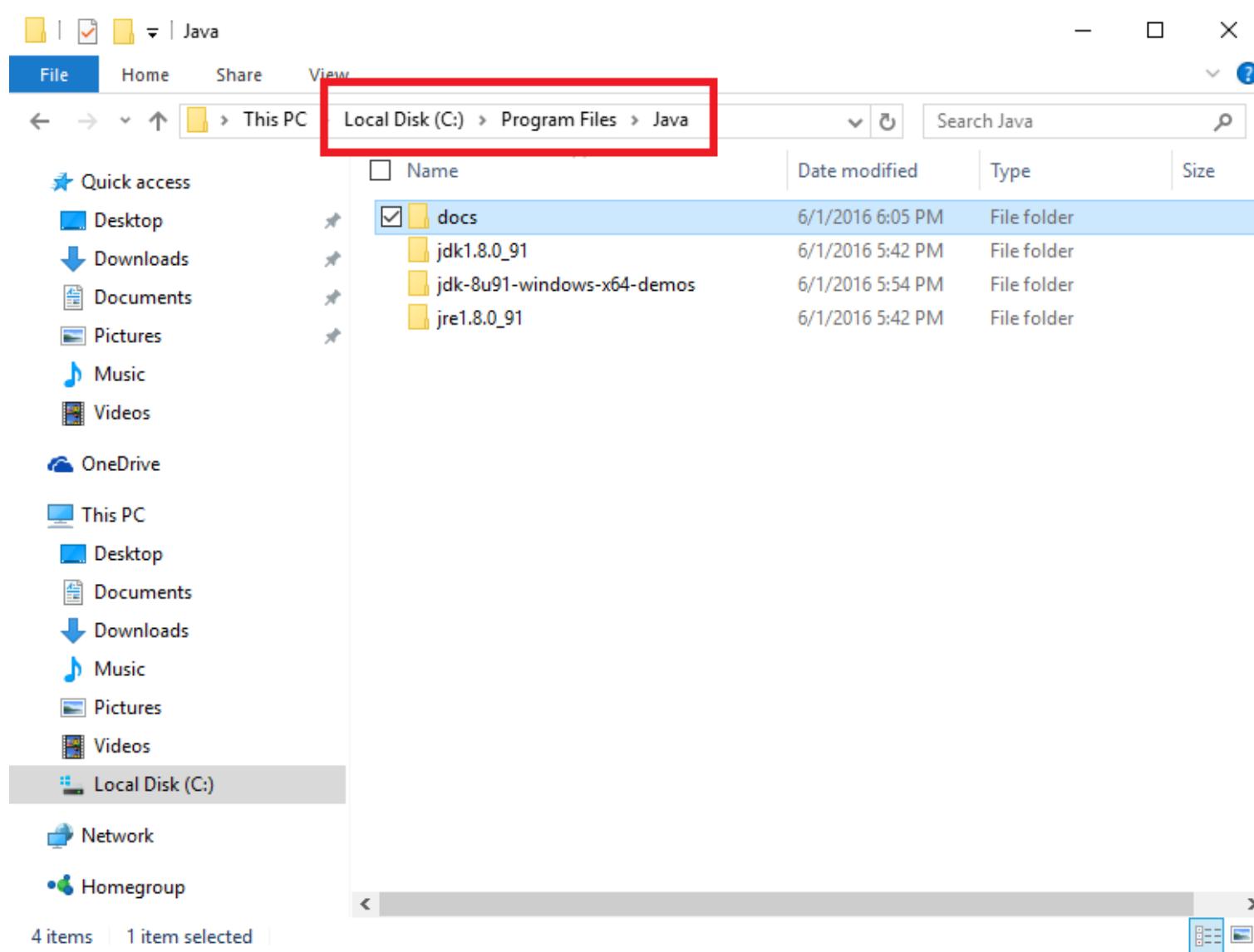
Unzipping JDK Documentation



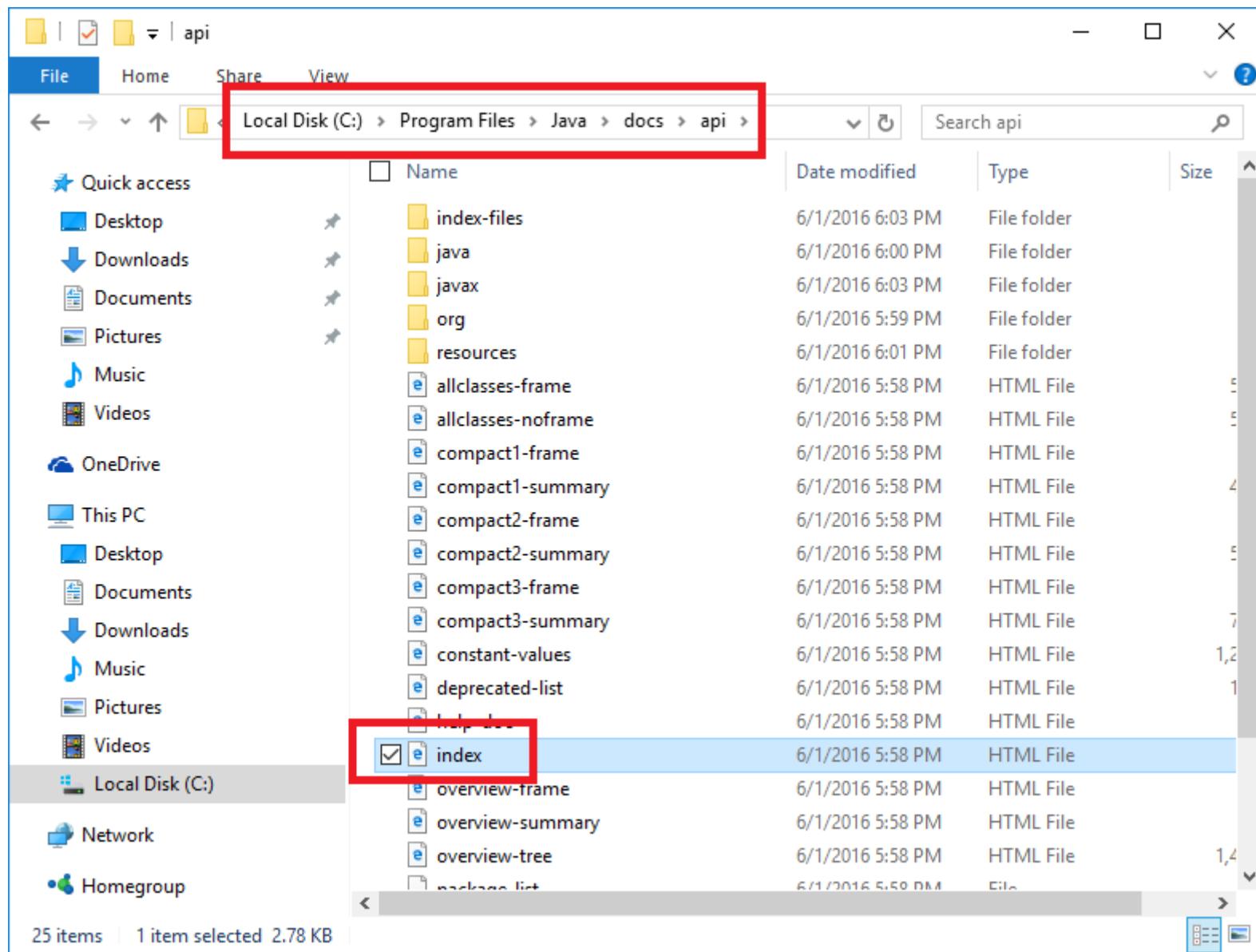
Moving JDK Documentation



Moving JDK Documentation



Registering JDK Documentation



Registering JDK Documentation (Cont.)

The screenshot shows a web browser window with the title "Java Platform SE 8". The address bar displays the URL "file:///C:/Program%20Files/Java/docs/api/index.html". The page content is the Java™ Platform, Standard Edition 8 API Specification. The left sidebar contains navigation links for "All Classes", "All Profiles", and "Packages". Under "All Classes", several abstract classes are listed. Under "Packages", three packages are shown: java.awt, java.awt.color, and java.applet. The main content area features a heading "Java™ Platform, Standard Edition 8 API Specification" and a brief description: "This document is the API specification for the Java™ Platform, Standard Edition." Below this, there are sections for "Profiles" (with items compact1, compact2, compact3) and "Packages" (with detailed descriptions for java.awt and java.applet).

This document is the API specification for the Java™ Platform, Standard Edition.

See: [Description](#)

Profiles

- compact1
- compact2
- compact3

Packages

Package	Description
java.awt	Provides the classes necessary to create an applet and the classes an applet uses to communicate with its applet context.
java.awt.color	Provides classes for color spaces.
java.applet	Contains all of the classes for creating user interfaces and for painting graphics and images.

Installation to openjdk-8 on for Ubuntu Platform



Pre-installation OpenJdk-8 on Ubuntu

- Reference to openjdk-8 packages

<https://launchpad.net/ubuntu/+source/openjdk-8>

- Add to repository

- `sudo add-apt-repository ppa:openjdk-r/ppa`

- Update packages

- `sudo apt-get update`

Pre-installation OpenJdk-8 on Ubuntu (Cont.)

■ Java Compiler & Interpreter version check

```
instructor@Ubuntu-00: ~
instructor@Ubuntu-00: ~$ 
instructor@Ubuntu-00: ~$ java -version
The program 'java' can be found in the following packages:
 * default-jre
 * gcj-4.8-jre-headless
 * openjdk-7-jre-headless
 * gcj-4.6-jre-headless
 * openjdk-6-jre-headless
Try: sudo apt-get install <selected package>
instructor@Ubuntu-00: ~$
```

Installation OpenJdk-8 on Ubuntu

1. Add to repository

```
instructor@Ubuntu-00: ~
instructor@Ubuntu-00:~$ sudo add-apt-repository ppa:openjdk-r/ppa
More info: https://launchpad.net/~openjdk-r/+archive/ubuntu/ppa
Press [ENTER] to continue or ctrl-c to cancel adding it
[ ]
```

Installation OpenJdk-8 on Ubuntu (Cont.)

```
instructor@Ubuntu-00:~$ sudo add-apt-repository ppa:openjdk-r/ppa
More info: https://launchpad.net/~openjdk-r/+archive/ubuntu/ppa
Press [ENTER] to continue or ctrl-c to cancel adding it

gpg: keyring '/tmp/tmpmweczs2j/secring.gpg' created
gpg: keyring '/tmp/tmpmweczs2j/pubring.gpg' created
gpg: requesting key 86F44E2A from hkp server keyserver.ubuntu.com
gpg: /tmp/tmpmweczs2j/trustdb.gpg: trustdb created
gpg: key 86F44E2A: public key "Launchpad OpenJDK builds (all archs)" imported
gpg: Total number processed: 1
gpg:                         imported: 1  (RSA: 1)
OK
instructor@Ubuntu-00:~$
```

Installation OpenJdk-8 on Ubuntu (Cont.)

2. Updates

```
instructor@Ubuntu-00: ~  
instructor@Ubuntu-00:~$  
instructor@Ubuntu-00:~$ sudo apt-get update
```

Installation OpenJdk-8 on Ubuntu (Cont.)

3. Install openjdk-8 packages

```
sudo apt-get install \
openjdk-8-jdk  openjdk-8-demo \
openjdk-8-doc  openjdk-8-jre
```

```
instructor@Ubuntu-00: ~
instructor@Ubuntu-00: ~$ sudo apt-get install openjdk-8-jdk openjdk-8-demo openjd
k-8-doc openjdk-8-jre
```

Installation OpenJdk-8 on Ubuntu (Cont.)

4. Enter **y** to confirm the install.

```
instructor@Ubuntu-00: ~
libgnome2-0 libgnome2-bin libgnome2-common libgnomevfs2-0
libgnomevfs2-common libice-dev libidl-common libidl0 liborbit-2-0 liborbit2
libpthread-stubs0-dev libsm-dev libx11-dev libx11-doc libxau-dev libxcb1-dev
libxdmcp-dev libxt-dev openjdk-8-jre-headless x11proto-core-dev
x11proto-input-dev x11proto-kb-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
 default-jre equivs libbonobo2-bin desktop-base libgnomevfs2-bin
 libgnomevfs2-extra gamin fam gnome-mime-data libice-doc libsm-doc libxcb-doc
 libxt-doc openjdk-8-source visualvm icedtea-8-plugin openjdk-8-jre-jamvm
 fonts-ipafont-gothic fonts-ipafont-mincho ttf-wqy-microhei ttf-wqy-zenhei
 ttf-telugu-fonts ttf-oriya-fonts ttf-kannada-fonts ttf-bengali-fonts
The following NEW packages will be installed:
 ca-certificates-java fonts-dejavu-extra java-common libatk-wrapper-java
 libatk-wrapper-java-jni libbonobo2-0 libbonobo2-common libgconf2-4 libgif4
 libgnome2-0 libgnome2-bin libgnome2-common libgnomevfs2-0
 libgnomevfs2-common libice-dev libidl-common libidl0 liborbit-2-0 liborbit2
 libpthread-stubs0-dev libsm-dev libx11-dev libx11-doc libxau-dev libxcb1-dev
 libxdmcp-dev libxt-dev openjdk-8-demo openjdk-8-doc openjdk-8-jdk
 openjdk-8-jre openjdk-8-jre-headless x11proto-core-dev x11proto-input-dev
 x11proto-kb-dev xorg-sgml-doctools xtrans-dev
0 upgraded, 37 newly installed, 0 to remove and 5 not upgraded.
Need to get 56.1 MB of archives.
After this operation, 464 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

Installation OpenJdk-8 on Ubuntu (Cont.)

```
instructor@Ubuntu-00: ~
Adding debian:GlobalSign_Root_CA_-_R2.pem
Adding debian:America_Online_Root_Certification_Authority_2.pem
Adding debian:Verisign_Class_1_Public_Primary_Certification_Authority_-_G3.pem
Adding debian:Buypass_Class_3_Root_CA.pem
Adding debian:TWCA_Global_Root_CA.pem
Adding debian:Certum_Root_CA.pem
Adding debian:Certinomis_-_Autorité_Racine.pem
Adding debian:ACCVRAIZ1.pem
Adding debian:OISTE_WISeKey_Global_Root_GA_CA.pem
Adding debian:QuoVadis_Root_CA_1_G3.pem
Adding debian:SecureSign_RootCA11.pem
Adding debian:NetLock_Business_=Class_B=_Root.pem
Adding debian:GeoTrust_Universal_CA_2.pem
done.

Setting up libatk-wrapper-java-jni:amd64 (0.30.4-4) ...
Setting up libgnome2-bin (2.32.1-4ubuntu1) ...
Setting up libgnome2-0:amd64 (2.32.1-4ubuntu1) ...
Processing triggers for libc-bin (2.19-0ubuntu6.6) ...
Processing triggers for ca-certificates (20141019ubuntu0.14.04.1) ...
Updating certificates in /etc/ssl/certs... 0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d.....
done.
done.
instructor@Ubuntu-00:~$
```

Installation OpenJdk-8 on Ubuntu (Cont.)

5. Confirm to installation directory.

```
instructor@Ubuntu-00:/usr/lib/jvm$ pwd  
/usr/lib/jvm  
instructor@Ubuntu-00:/usr/lib/jvm$ ls  
java-1.8.0-openjdk-amd64  java-8-openjdk-amd64  
instructor@Ubuntu-00:/usr/lib/jvm$ █
```

Installation OpenJdk-8 on Ubuntu (Cont.)

6. Check **java** version & **javac** version.

```
instructor@Ubuntu-00:/usr/lib/jvm$ java -version
openjdk version "1.8.0_72-internal"
OpenJDK Runtime Environment (build 1.8.0_72-internal-b05)
OpenJDK 64-Bit Server VM (build 25.72-b05, mixed mode)
instructor@Ubuntu-00:/usr/lib/jvm$ javac -version
javac 1.8.0_72-internal
instructor@Ubuntu-00:/usr/lib/jvm$ █
```

Installation to Oracle Java 8 for Ubuntu 64-bit Platform



Installation JDK 8 for Ubuntu 18.04 LTS Platform

```
instructor@Ubuntu-Desktop: ~
File Edit View Search Terminal Help
instructor@Ubuntu-Desktop:~$ java -version
Command 'java' not found, but can be installed with:
sudo apt install default-jre
sudo apt install openjdk-11-jre-headless
sudo apt install openjdk-8-jre-headless
```

Installation JDK 8 for Ubuntu 18.04 LTS Platform (Cont.)

1. Connect to <http://java.sun.com>

The screenshot shows a Mozilla Firefox browser window displaying the Oracle Technology Network for Java Developers website at <https://www.oracle.com/technetwork/java/index.html>. The page features a large blue banner on the left with white clouds and icons related to cloud computing. To the right of the banner, there is a promotional offer for creating a free Oracle Cloud account. Below the banner, there are links for "What's New" and "Java in the Cloud". On the right side of the page, there is a "Software Downloads" section with a red box highlighting the "Java SE" link under "Top Downloads". Other download options listed include Java EE and GlassFish, JavaFX, Java Card, JDeveloper and ADF, Enterprise Pack for Eclipse, NetBeans IDE, and Pre-Built VM for Java Devs. The "New Downloads" section lists Java SE 12.0.2, Java SE 11.0.4, Java SE 8 Update 221, Java CPU and PSU Releases Explained, and Java Card 3.1.

Downloading JDK 8

- Connect to
<https://www.oracle.com/technetwork/java/javase/downloads/index.html>



Downloading JDK 8 (Cont.)

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Java SE Development Kit X + https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133 Search Sign In Country/Region Contact

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Java SE Development Kit 8 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

Important Oracle JDK License Update

The Oracle JDK License has changed for releases starting April 16, 2019.

The new [Oracle Technology Network License Agreement for Oracle Java SE](#) is substantially different from prior Oracle JDK licenses. The new license permits certain uses, such as personal use and development use, at no cost -- but other uses authorized under prior Oracle JDK licenses may no longer be available. Please review the terms carefully before downloading and using this product. An FAQ is available [here](#).

Commercial license and support is available with a low cost [Java SE Subscription](#).

Oracle also provides the latest OpenJDK release under the open source [GPL License](#) at [jdk.java.net](#).

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Downloading JDK 8 (Cont.)

① 🛡️ 🔒 https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

JDK 8u221 checksum

Java SE Development Kit 8u221

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Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABIs	72.9 MB	jdk-8u221-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float	69.81 MB	jdk-8u221-linux-arm64-vfp-hflt.tar.gz
Linux x86	174.18 MB	jdk-8u221-linux-i586.rpm
Linux x86	189.03 MB	jdk-8u221-linux-i586.tar.gz
Linux x64	171.19 MB	jdk-8u221-linux-x64.rpm
Linux x64	186.06 MB	jdk-8u221-linux-x64.tar.gz
Mac OS X x64	252.52 MB	jdk-8u221-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	132.99 MB	jdk-8u221-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	94.23 MB	jdk-8u221-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	133.66 MB	jdk-8u221-solaris-x64.tar.Z
Solaris x64	91.95 MB	jdk-8u221-solaris-x64.tar.gz
Windows x86	202.73 MB	jdk-8u221-windows-i586.exe
Windows x64	215.35 MB	jdk-8u221-windows-x64.exe



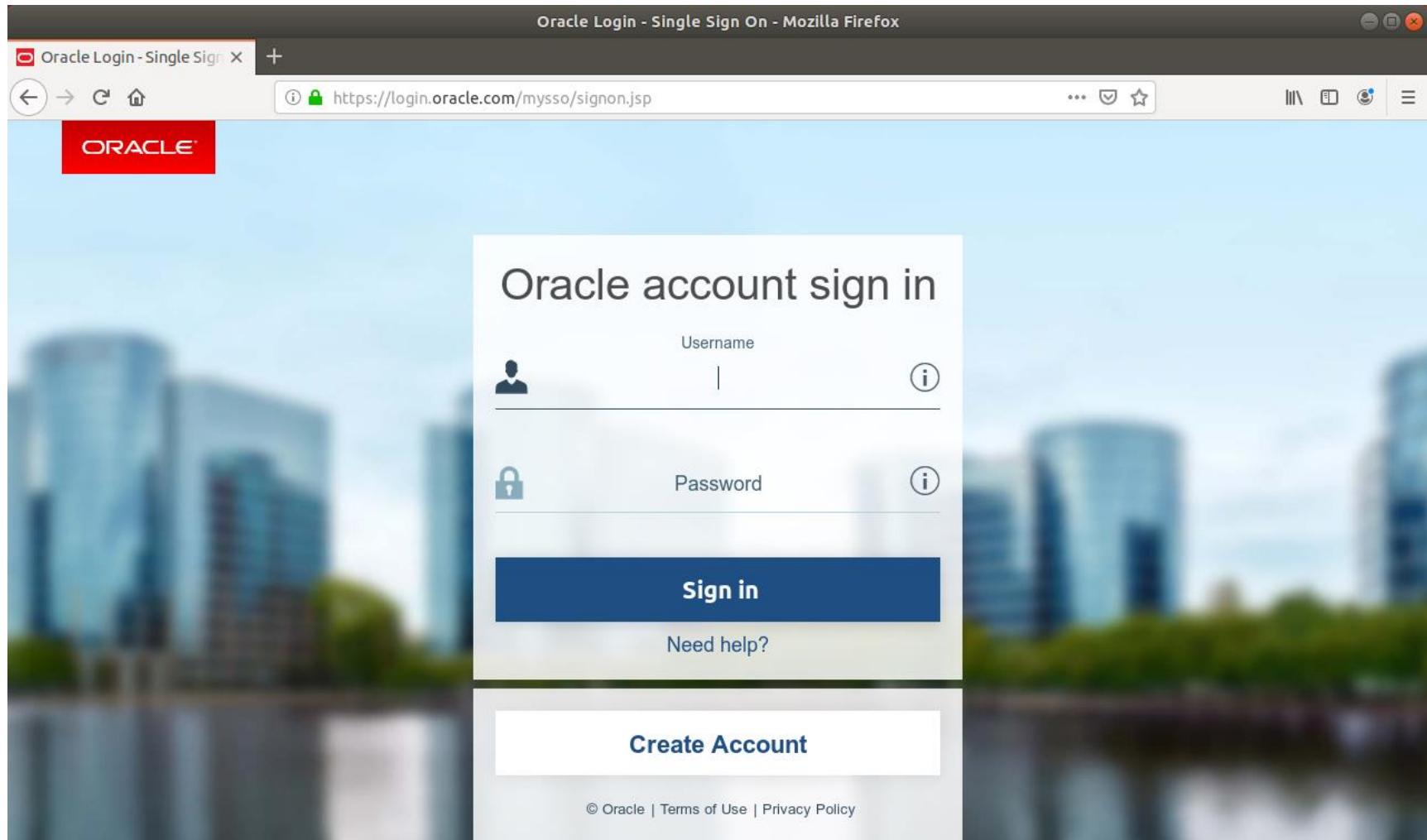
Downloading JDK 8 (Cont.)

2. Download `jdk-8uxxxx-linux-x64.tar.gz`

The screenshot shows a web browser window with the URL <https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133>. The page displays the Java SE Development Kit 8u221 download options. A red box highlights the 'Linux x64' row in the download table.

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	72.9 MB	jdk-8u221-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	69.81 MB	jdk-8u221-linux-arm64-vfp-hflt.tar.gz
Linux x86	174.18 MB	jdk-8u221-linux-i586.rpm
Linux x86	189.03 MB	jdk-8u221-linux-i586.tar.gz
Linux x64	171.19 MB	jdk-8u221-linux-x64.rpm
Linux x64	186.06 MB	jdk-8u221-linux-x64.tar.gz
Mac OS X x64	252.52 MB	jdk-8u221-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	132.99 MB	jdk-8u221-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	94.23 MB	jdk-8u221-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	133.66 MB	jdk-8u221-solaris-x64.tar.Z
Solaris x64	91.95 MB	jdk-8u221-solaris-x64.tar.gz
Windows x86	202.73 MB	jdk-8u221-windows-i586.exe
Windows x64	215.35 MB	jdk-8u221-windows-x64.exe

Downloading JDK 8 (Cont.)



Installation JDK 8 on Ubuntu

3. Unpacking `$ tar xvfz jdk*.tar.gz`

```
instructor@Ubuntu-Desktop: ~/Downloads
File Edit View Search Terminal Help
instructor@Ubuntu-Desktop:~$ cd Downloads
instructor@Ubuntu-Desktop:~/Downloads$ ls
jdk-8u221-linux-x64.tar.gz
instructor@Ubuntu-Desktop:~/Downloads$
```

```
instructor@Ubuntu-Desktop:~/Downloads$ tar xvfz jdk-8u*.tar.gz
```

```
instructor@Ubuntu-Desktop:~/Downloads$
```



```
instructor@Ubuntu-Desktop:~/Downloads$ ls
jdk1.8.0_221  jdk-8u221-linux-x64.tar.gz
instructor@Ubuntu-Desktop:~/Downloads$
```

Installation JDK 8 on Ubuntu (Cont.)

4. Making JDK Directory

```
instructor@Ubuntu-Desktop:~/Downloads$  
instructor@Ubuntu-Desktop:~/Downloads$ sudo mkdir /usr/lib/jvm  
[sudo] password for instructor:
```

5. Moving JDK Directory

```
$ sudo mv jdk1.8.0_xxx /usr/lib/jvm/
```

```
instructor@Ubuntu-Desktop:~/Downloads$ sudo mv jdk1.8.0_221 /usr/lib/jvm/
```

```
instructor@Ubuntu-Desktop:~/Downloads$ cd /usr/lib/jvm  
instructor@Ubuntu-Desktop:/usr/lib/jvm$ pwd  
/usr/lib/jvm  
instructor@Ubuntu-Desktop:/usr/lib/jvm$ ls  
jdk1.8.0_221  
instructor@Ubuntu-Desktop:/usr/lib/jvm$
```

Installation JDK 8 on Ubuntu (Cont.)

6. Adding your new Java 8 installation into alternatives list.

```
$ sudo update-alternatives --install \
/usr/bin/java java \
/usr/lib/jvm/jdk1.8.0_xxx/bin/java \
1
```

```
instructor@Ubuntu-Desktop:/usr/lib/jvm$ sudo update-alternatives --install \
> /usr/bin/java java /usr/lib/jvm/jdk1.8.0_221/bin/java 1
update-alternatives: using /usr/lib/jvm/jdk1.8.0_221/bin/java to provide /usr/bin/java (java) in auto
mode
instructor@Ubuntu-Desktop:/usr/lib/jvm$
```

Installation JDK 8 on Ubuntu (Cont.)

7. Adding your new Java 8 installation into alternatives list.

```
$ sudo update-alternatives --install \
/usr/bin/javac javac \
/usr/lib/jvm/jdk1.8.0_xxx/bin/javac \
1
```

```
instructor@Ubuntu-Desktop:/usr/lib/jvm$ sudo update-alternatives --install \
> /usr/bin/javac javac /usr/lib/jvm/jdk1.8.0_221/bin/javac 1
update-alternatives: using /usr/lib/jvm/jdk1.8.0_221/bin/javac to provide /usr/bin/javac (javac) in a
uto mode
```

Installation JDK 8 on Ubuntu (Cont.)

8. Adding your new Java 8 installation into alternatives list.

```
$ sudo update-alternatives --install \
/usr/bin/javaws javaws \
/usr/lib/jvm/jdk1.8.0_xxx/bin/javaws \
1
```

```
instructor@Ubuntu-Desktop:/usr/lib/jvm$ sudo update-alternatives --install \
> /usr/bin/javaws javaws /usr/lib/jvm/jdk1.8.0_221/bin/javaws 1
update-alternatives: using /usr/lib/jvm/jdk1.8.0_221/bin/javaws to provide /usr/bin/javaws (javaws) in auto mode
```

Installation JDK 8 on Ubuntu (Cont.)

9. Change permission.

```
$ sudo chmod a+x /usr/lib/java  
$ sudo chmod a+x /usr/lib/javac  
$ sudo chmod a+x /usr/lib/javaws
```

```
instructor@Ubuntu-Desktop:/usr/lib/jvm$ sudo chmod a+x /usr/bin/java  
instructor@Ubuntu-Desktop:/usr/lib/jvm$ sudo chmod a+x /usr/bin/javac  
instructor@Ubuntu-Desktop:/usr/lib/jvm$ sudo chmod a+x /usr/bin/javaws
```

Installation JDK 8 on Ubuntu (Cont.)

10. Check java version & javac version

```
$ java -version
```

```
$ javac -version
```

```
instructor@Ubuntu-Desktop:/usr/lib/jvm$ java -version
java version "1.8.0_221"
Java(TM) SE Runtime Environment (build 1.8.0_221-b11)
Java HotSpot(TM) 64-Bit Server VM (build 25.221-b11, mixed mode)
instructor@Ubuntu-Desktop:/usr/lib/jvm$ javac -version
javac 1.8.0_221
```

Registering OS Environment Variables on Ubuntu

- **sudo vi /etc/profile**

```
instructor@Ubuntu-Desktop:/usr/lib/jvm$ sudo vi /etc/profile
```

Registering OS Environment Variables on Ubuntu (Cont.)

```
instructor@Ubuntu-Desktop: /usr/lib/jvm  
File Edit View Search Terminal Help  
    fi  
fi  
  
if [ -d /etc/profile.d ]; then  
    for i in /etc/profile.d/*.sh; do  
        if [ -r $i ]; then  
            . $i  
        fi  
    done  
    unset i  
fi
```

```
#-----  
# Java Settings  
#-----  
JAVA_HOME=/usr/lib/jvm/jdk1.8.0_221  
PATH=$JAVA_HOME/bin:$PATH  
  
export JAVA_HOME  
export PATH
```

Registering OS Environment Variables on Ubuntu (Cont.)

- **source /etc/profile**

```
instructor@Ubuntu-Desktop:/usr/lib/jvm$ source /etc/profile  
instructor@Ubuntu-Desktop:/usr/lib/jvm$
```

- Restart System

Registering OS Environment Variables on Ubuntu (Cont.)

```
instructor@Ubuntu-Desktop: ~
File Edit View Search Terminal Help
instructor@Ubuntu-Desktop:~$ echo $JAVA_HOME
/usr/lib/jvm/jdk1.8.0_221
instructor@Ubuntu-Desktop:~$ echo $PATH
/usr/lib/jvm/jdk1.8.0_221/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:
/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
instructor@Ubuntu-Desktop:~$ █
```

Java SE 8 Documentation downloads

- Connect to <http://www.oracle.com/technet/work/java/javase/downloads/index.html>

Additional Resources	
Oracle Java Advanced Management Console Advanced Management Console (AMC) enables desktop administrators to track and manage Java usage across their organization -- understanding which Java versions are used with which applications and managing compatibility/security. AMC is a commercial product available for Java users who license Java SE Advanced or Java SE Advanced Suite. Learn More	DOWNLOAD
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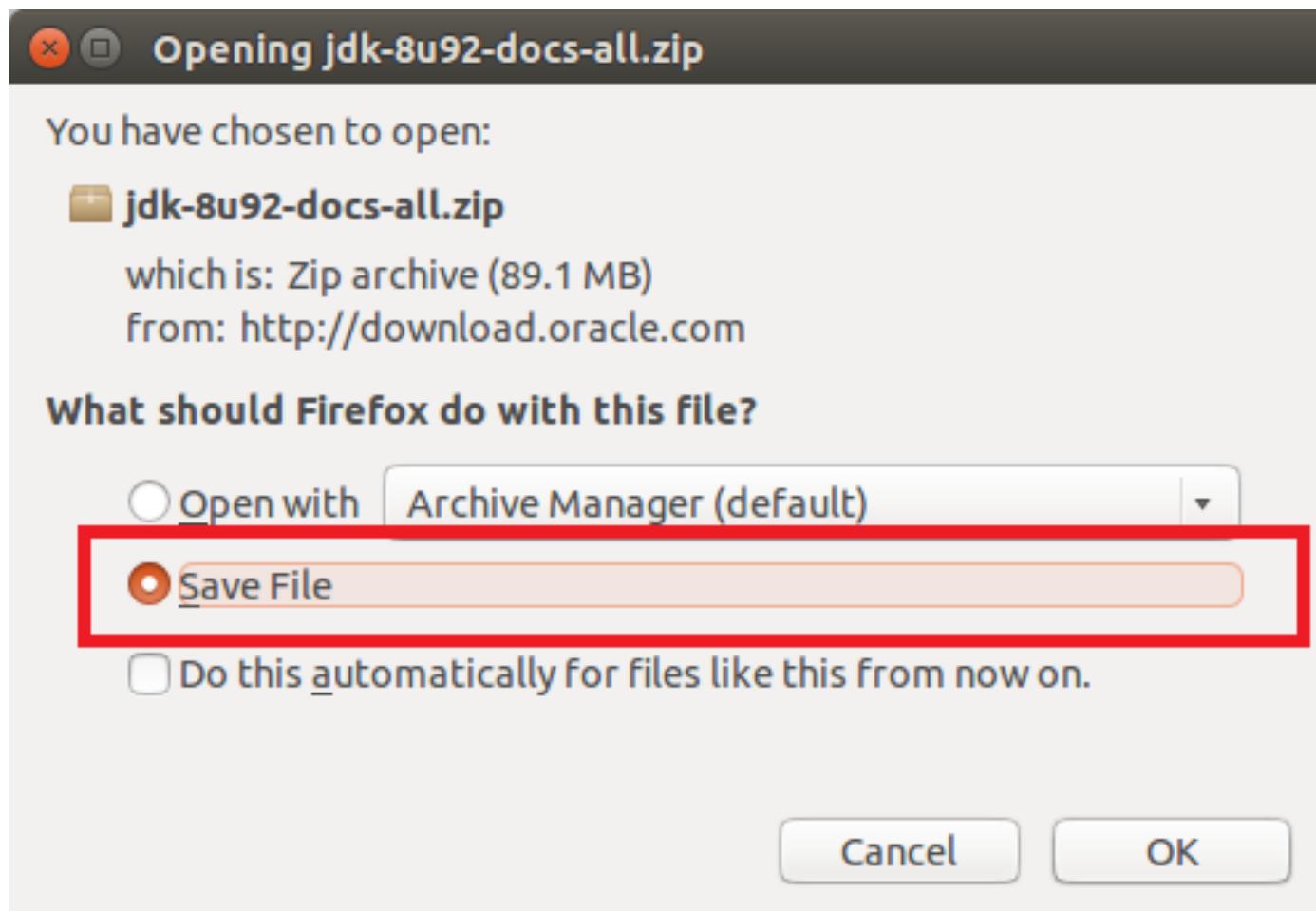
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Java SE 8 Documentation downloads (Cont.)

- Unzip download file.

```
$ unzip jdk*.zip
```

```
instructor@Ubuntu-00:~/Downloads$  
instructor@Ubuntu-00:~/Downloads$ unzip jdk*.zip
```

Java SE 8 Documentation downloads (Cont.)

- Moving unzipped folder.

```
$ sudo mv docs /usr/lib/jvm/docs
```

```
instructor@Ubuntu-00:~/Downloads$  
instructor@Ubuntu-00:~/Downloads$ sudo mv docs /usr/lib/jvm/docs  
instructor@Ubuntu-00:~/Downloads$ █
```

```
instructor@Ubuntu-00:/usr/lib/jvm$  
instructor@Ubuntu-00:/usr/lib/jvm$ pwd  
/usr/lib/jvm  
instructor@Ubuntu-00:/usr/lib/jvm$ ls  
docs jdk1.8.0_92 jdk1.8.0_92_demos_samples  
instructor@Ubuntu-00:/usr/lib/jvm$ █
```

Java SE 8 Documentation downloads (Cont.)

The screenshot shows a Mozilla Firefox browser window with the title "Overview (Java Platform SE 8) - Mozilla Firefox". The address bar contains the URL "file:///usr/lib/jvm/docs/api/index.html", which is highlighted with a red box. The page itself is the Java™ Platform, Standard Edition 8 API Specification. The navigation bar at the top includes links for OVERVIEW, PACKAGE, CLASS, USE, TREE, DEPRECATED, INDEX, and HELP, along with PREV, NEXT, FRAMES, and NO FRAMES buttons. The main content area features the title "Java™ Platform, Standard Edition 8 API Specification" and a brief description stating it is the API specification for the Java™ Platform, Standard Edition. Below this, there is a "Profiles" section with a list of three compact profiles: compact1, compact2, and compact3. The "Packages" section is currently active, showing a table with five rows corresponding to the java.awt, java.awt.color, java.awt.datatransfer, java.awt.dnd, and java.awt.peer packages. Each row provides a brief description of the package's purpose.

Package	Description
java.awt	Provides the classes necessary to create an applet and the classes an applet uses to communicate with its applet context.
java.awt	Contains all of the classes for creating user interfaces and for painting graphics and images.
java.awt.color	Provides classes for color spaces.
java.awt.datatransfer	Provides interfaces and classes for transferring data between and within applications.
java.awt.dnd	Drag and Drop is a direct manipulation gesture found in many Graphical User Interface systems that provides a

Installation to Oracle Java 8 Update 65 for Fedora 23 Platform



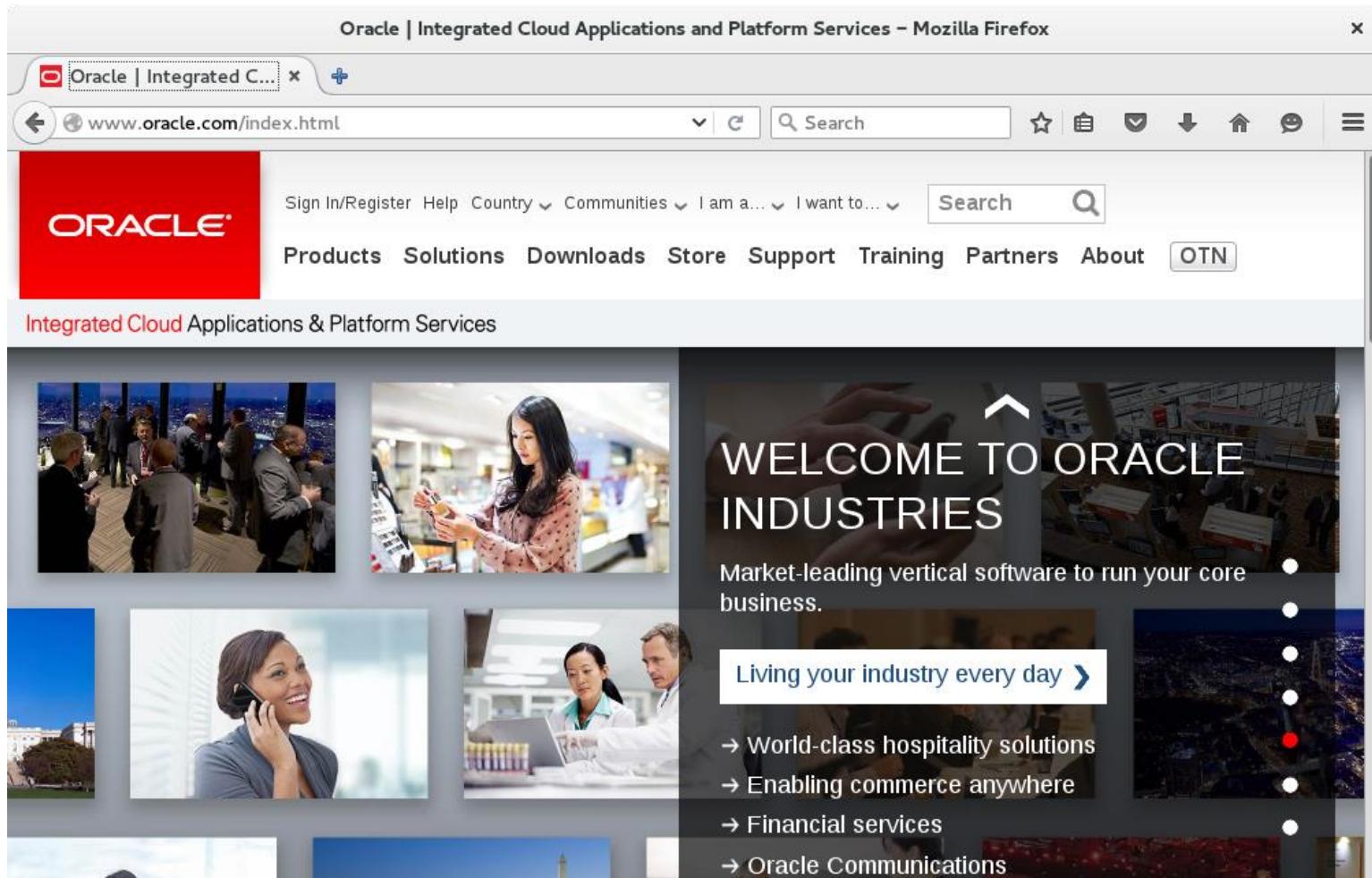
Pre-installation

■ Java Compiler & Interpreter version check

```
instructor@Fedora-00:~  
File Edit View Search Terminal Help  
[instructor@Fedora-00 ~]$  
[instructor@Fedora-00 ~]$ java -version  
openjdk version "1.8.0_60"  
OpenJDK Runtime Environment (build 1.8.0_60-b27)  
OpenJDK 64-Bit Server VM (build 25.60-b23, mixed mode)  
[instructor@Fedora-00 ~]$ javac -version  
bash: javac: command not found...  
Similar command is: 'java'  
[instructor@Fedora-00 ~]$ █
```

Installation JDK 8 Update 65 for Fedora 23 Platform

1. Connect to <http://www.oracle.com/index.html>



Installation JDK 8 Update 65 for Fedora 23 Platform

The screenshot shows the Oracle website homepage. A red box highlights the "Java for Developers" link under the "Popular Downloads" section. The page features a navigation bar with links for Sign In/Register, Help, Country, Communities, I am a..., I want to..., Products, Solutions, Downloads, Store, Support, Training, and Partner. Below the navigation is a grid of links categorized into Database, Enterprise Management, Server and Storage Systems, and Developer Tools.

Popular Downloads

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Java SE Downloads

Java Platform (JDK) 8u65 / 8u66

NetBeans with JDK 8

Java SE 8u65 / 8u66

Java SE 8u65 includes important security fixes. Oracle strongly recommends that all Java SE users upgrade to this release. Java SE 8u66 is a patch-set update, including all of 8u65 plus additional features (described in the release notes). Learn more

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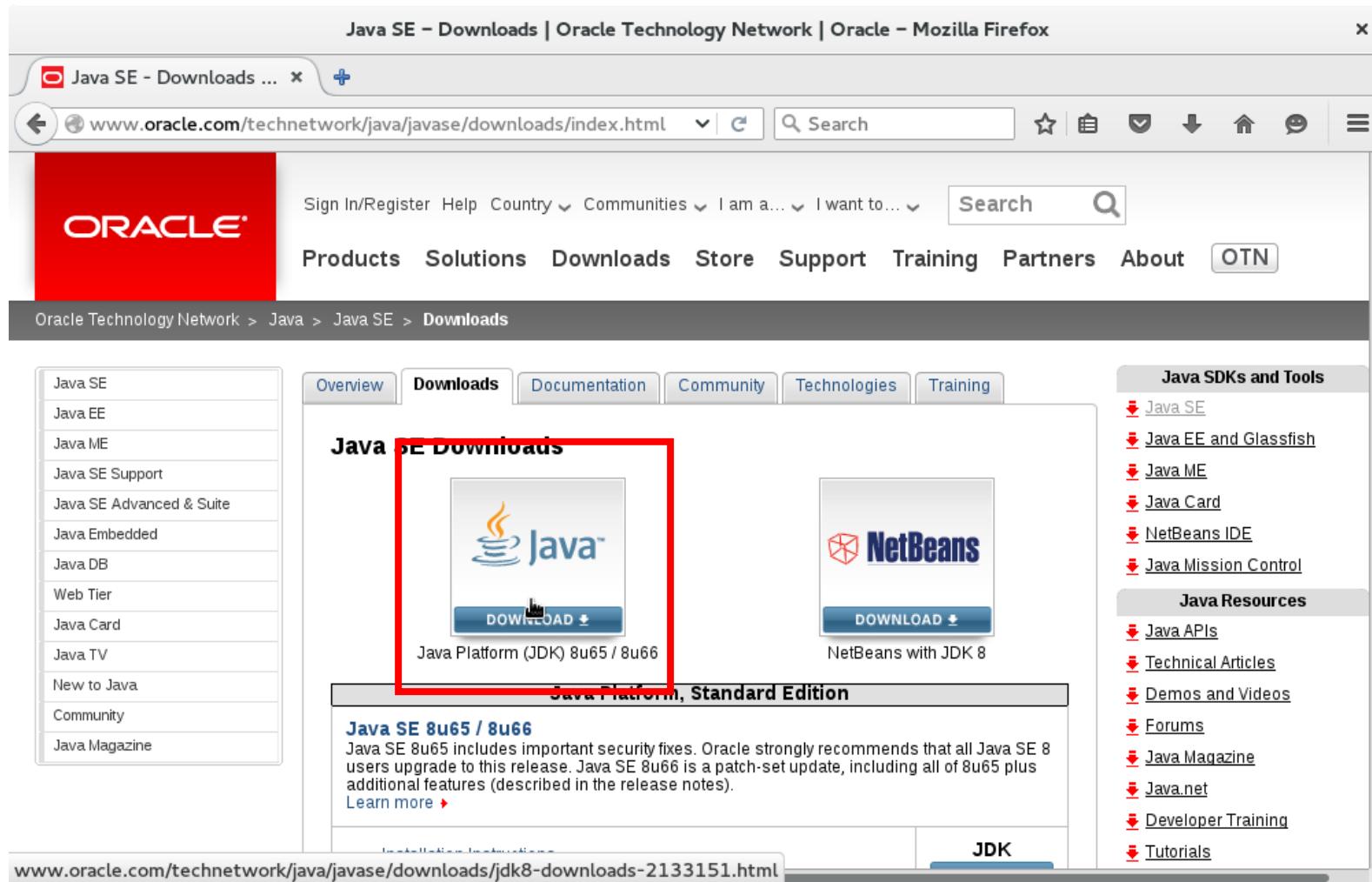
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JDK



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Java SE Development... x

www.oracle.com/technetwork/java/javase/downloads/jdk8-downloa ↴ C Search

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JDK 8u66 Checksum

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Linux ARM v6/v7 Hard Float ABI	77.69 MB	jdk-8u65-linux-arm32-vfp-hflt.tar.gz
Linux ARM v8 Hard Float ABI	74.66 MB	jdk-8u65-linux-arm64-vfp-hflt.tar.gz
Linux x86	154.67 MB	jdk-8u65-linux-i586.rpm
Linux x86	174.84 MB	jdk-8u65-linux-i586.tar.gz
Linux x64	152.69 MB	jdk-8u65-linux-x64.rpm
Linux x64	172.86 MB	jdk-8u65-linux-x64.tar.gz
Mac OS X x64	227.14 MB	jdk-8u65-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.71 MB	jdk-8u65-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.01 MB	jdk-8u65-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140.22 MB	jdk-8u65-solaris-x64.tar.Z
Solaris x64	96.74 MB	jdk-8u65-solaris-x64.tar.gz
Windows x86	181.24 MB	jdk-8u65-windows-i586.exe
Windows x64	186.57 MB	jdk-8u65-windows-x64.exe

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www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-195217.html

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JDK 8u66 Checksum

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Solaris SPARC 64-bit	99.01 MB	jdk-8u65-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140.22 MB	jdk-8u65-solaris-x64.tar.Z
Solaris x64	96.74 MB	jdk-8u65-solaris-x64.tar.gz
Windows x86	181.24 MB	jdk-8u65-windows-i586.exe
Windows x64	186.57 MB	jdk-8u65-windows-x64.exe

Java SE Development Kit 8u66

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File Size Download

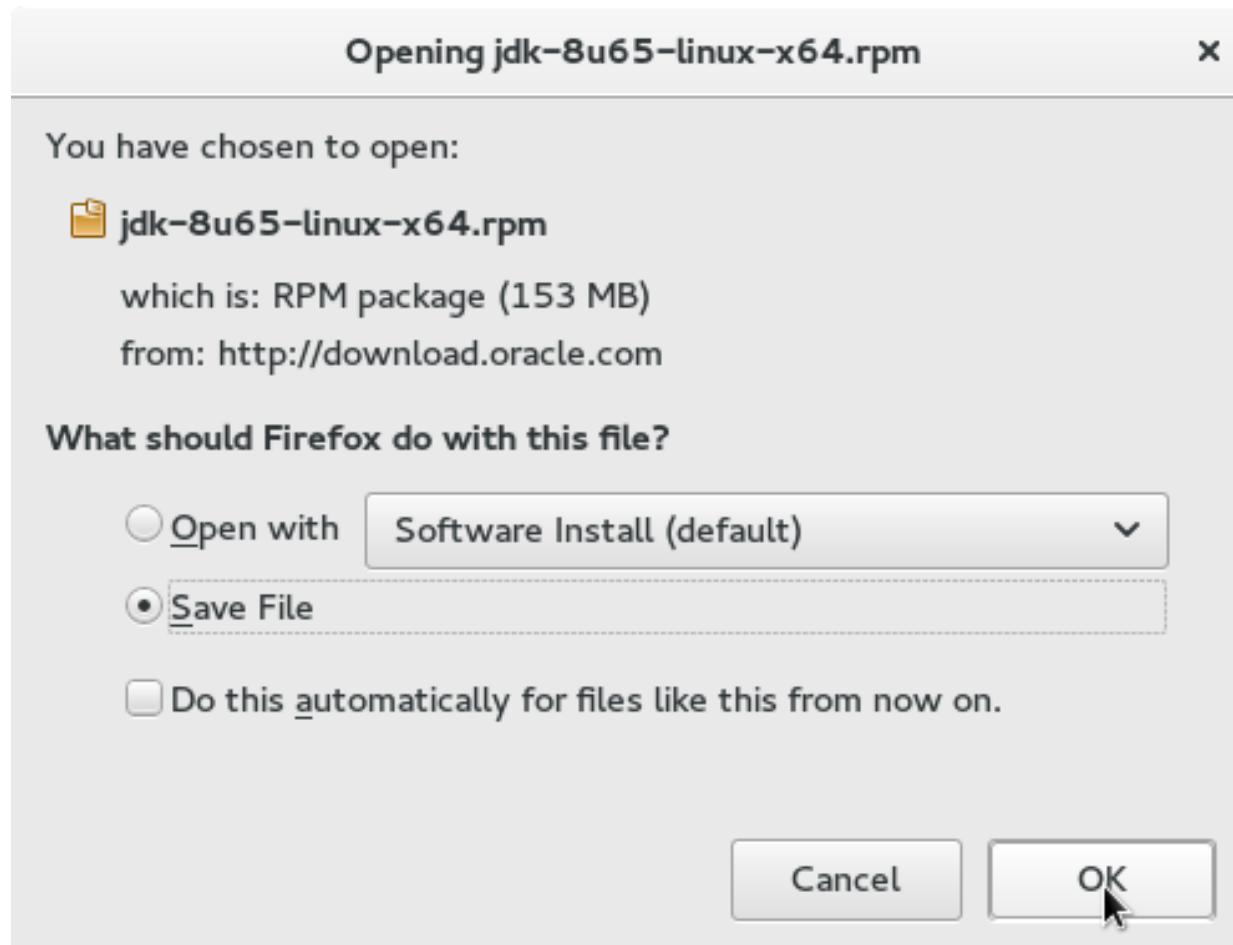
download.oracle.com/otn-pub/java/jdk/8u65-b17/jdk-8u65-linux-x64.rpm

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Duke's Choice Award 2015

Installation JDK 8 Update 65 for Fedora 23 Platform (Cont.)



Installation JDK 8 Update 65 for Fedora 23 Platform (Cont.)

```
instructor@Fedora-00:~/Downloads  
File Edit View Search Terminal Help  
[instructor@Fedora-00 Downloads]$  
[instructor@Fedora-00 Downloads]$  
[instructor@Fedora-00 Downloads]$  
[instructor@Fedora-00 Downloads]$ ls  
jdk-8u65-linux-x64.rpm  
[instructor@Fedora-00 Downloads]$
```

- Change to **root** account.

```
[instructor@Fedora-00 Downloads]$ su  
Password:  
[root@Fedora-00 Downloads]#
```

Installation JDK 8 Update 65 for Fedora 23 Platform (Cont.)

- Installation JDK 8 package with rpm utility.

```
# rpm -ivh jdk*.rpm
```

```
[root@Fedora-00 Downloads]#
```

```
[root@Fedora-00 Downloads]# rpm -ivh jdk*.rpm
```

Installation JDK 8 Update 65 for Fedora 23 Platform (Cont.)

```
[root@Fedora-00 Downloads]# rpm -ivh jdk*.rpm
Preparing...                                         ##### [100%]
Updating / installing...
1:jdk1.8.0_65-2000:1.8.0_65-fcs      ##### [100%]
Unpacking JAR files...
    tools.jar...
    plugin.jar...
    javaws.jar...
    deploy.jar...
    rt.jar...
    jsse.jar...
    charsets.jar...
    localedata.jar...
    jfxrt.jar...
[root@Fedora-00 Downloads]#
```

Installation JDK 8 Update 65 for Fedora 23 Platform (Cont.)

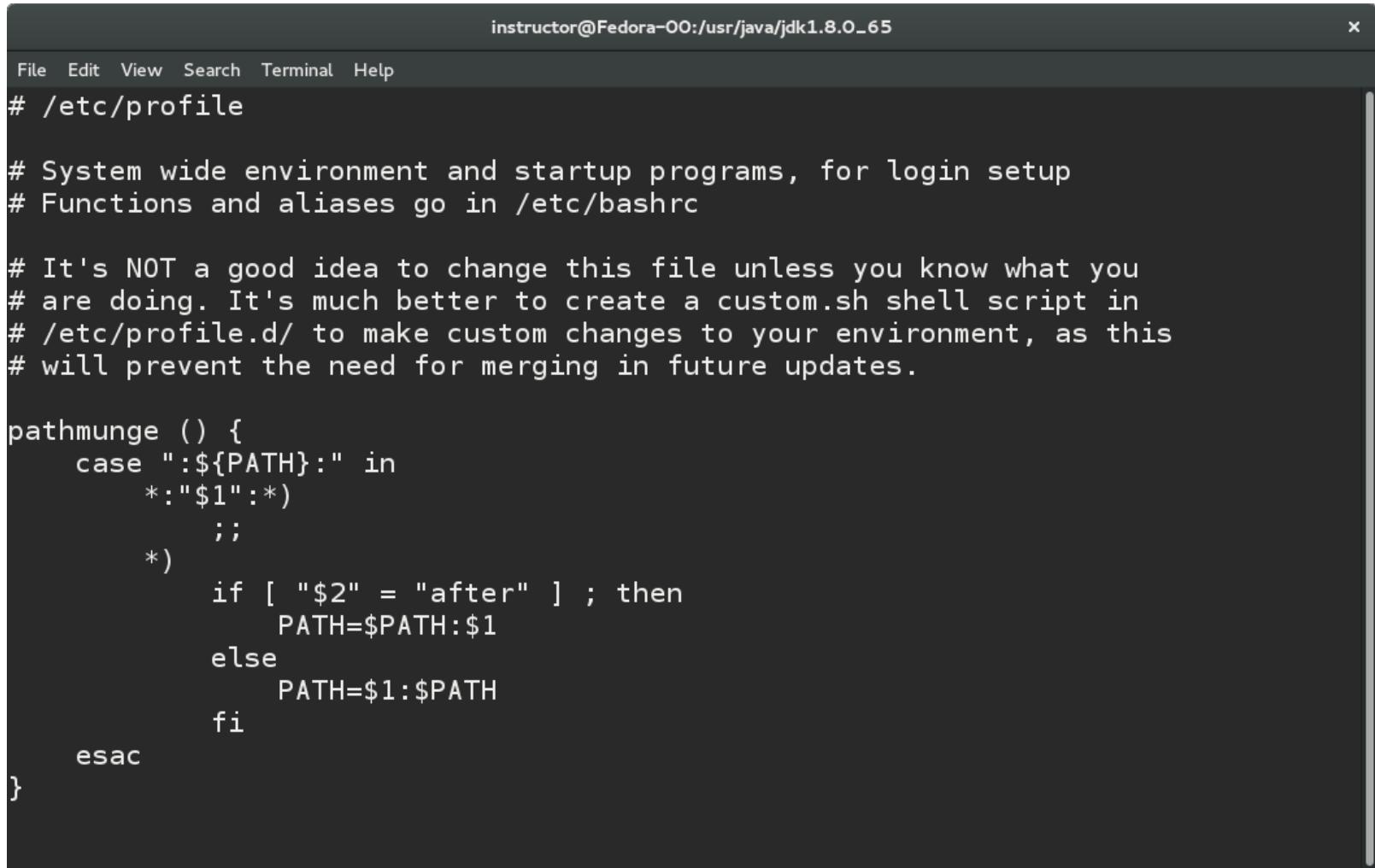
```
[root@Fedora-00 java]# pwd
/usr/java
[root@Fedora-00 java]# ls
default jdk1.8.0_65 latest
[root@Fedora-00 java]# cd jdk1.8.0_65
[root@Fedora-00 jdk1.8.0_65]# ls
bin javafx-src.zip man THIRDPARTYLICENSEREADME-JAVAFX.txt
COPYRIGHT jre README.html THIRDPARTYLICENSEREADME.txt
db lib release
include LICENSE src.zip
[root@Fedora-00 jdk1.8.0_65]#
```

Registering OS Environment Variables on Fedora

- # vi /etc/profile

```
[root@Fedora-00 jdk1.8.0_65]#  
[root@Fedora-00 jdk1.8.0_65]# vi /etc/profile
```

Registering OS Environment Variables on Fedora (Cont.)



The screenshot shows a terminal window titled "instructor@Fedora-00:/usr/java/jdk1.8.0_65". The window contains the text of the /etc/profile file. The text is as follows:

```
File Edit View Search Terminal Help
# /etc/profile

# System wide environment and startup programs, for login setup
# Functions and aliases go in /etc/bashrc

# It's NOT a good idea to change this file unless you know what you
# are doing. It's much better to create a custom.sh shell script in
# /etc/profile.d/ to make custom changes to your environment, as this
# will prevent the need for merging in future updates.

pathmunge () {
    case ":${PATH}:" in
        *:"$1":*)
            ;;
        *)
            if [ "$2" = "after" ] ; then
                PATH=$PATH:$1
            else
                PATH=$1:$PATH
            fi
    esac
}

instructor@Fedora-00:~$
```

Registering OS Environment Variables on Fedora (Cont.)

```
unset i  
unset -f pathmunge
```

```
#-----  
# Java Settings  
#-----  
JAVA_HOME=/usr/java/jdk1.8.0_65  
CLASSPATH=.:$JAVA_HOME/lib/tools.jar  
PATH=$JAVA_HOME/bin:$PATH  
  
export JAVA_HOME  
export CLASSPATH  
export PATH
```

Registering OS Environment Variables on Fedora (Cont.)

- # **source /etc/profile**

```
[root@Fedora-00 jdk1.8.0_65]#  
[root@Fedora-00 jdk1.8.0_65]# source /etc/profile  
[root@Fedora-00 jdk1.8.0_65]# █
```

```
[root@Fedora-00 jdk1.8.0_65]# java -version  
java version "1.8.0_65"  
Java(TM) SE Runtime Environment (build 1.8.0_65-b17)  
Java HotSpot(TM) 64-Bit Server VM (build 25.65-b01, mixed mode)  
[root@Fedora-00 jdk1.8.0_65]# javac -version  
javac 1.8.0_65  
[root@Fedora-00 jdk1.8.0_65]#
```

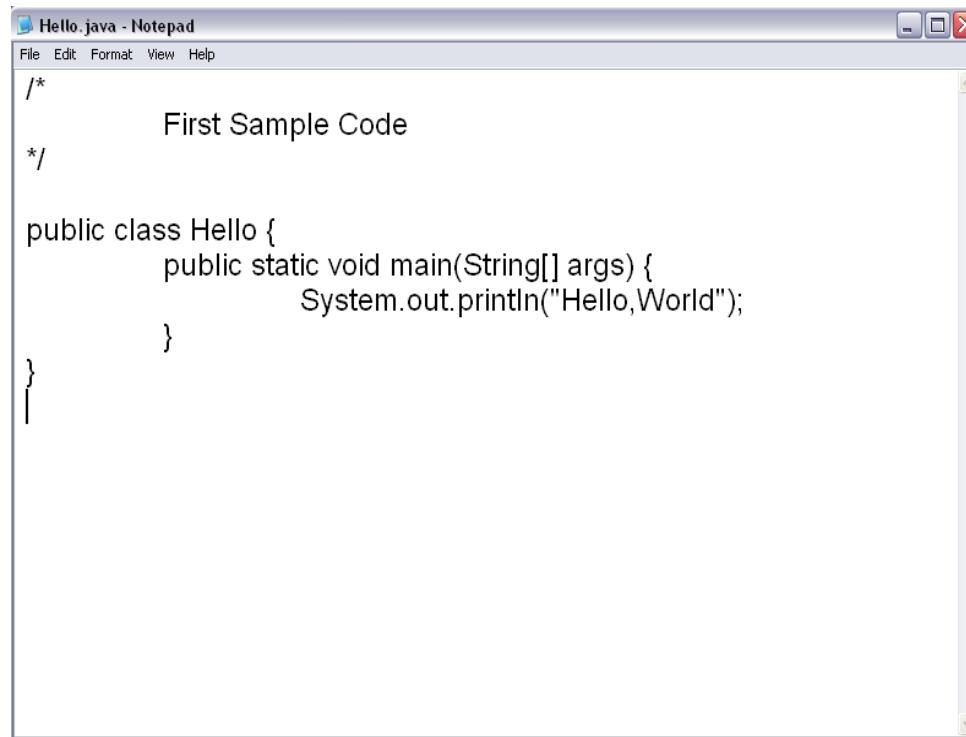
Text Editors

Text Editor

■ vi

```
public class HelloWorld{  
    public static void main(String [] args){  
        System.out.println("Hello, World");  
    }  
}
```

■ Notepad



Text Editor – Sublime Text 3

- Sublime Text 3 (<http://www.sublimetext.com/3>)
– Half Freeware

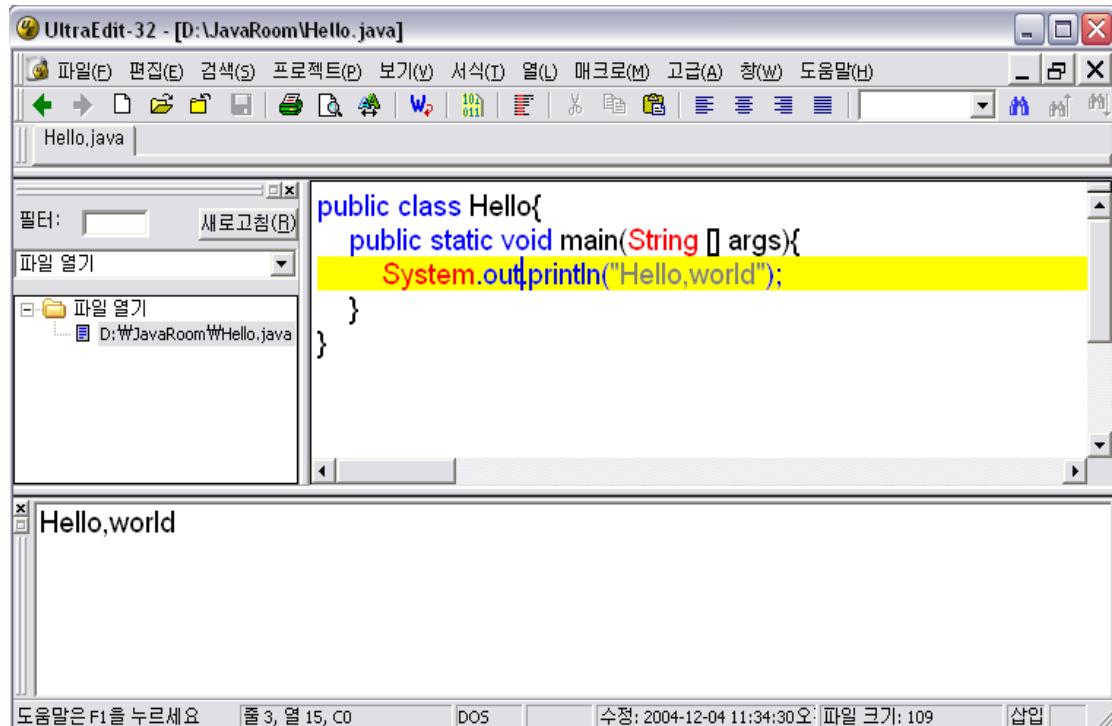
The screenshot shows the Sublime Text 3 interface. The top bar displays the title "C:\JavaRoom\HelloWorld.java - Sublime Text (UNREGISTERED)" and the menu items: File, Edit, Selection, Find, View, Goto, Tools, Project, Preferences, Help. Below the menu is a sidebar titled "OPEN FILES" with "HelloWorld.java" listed. The main editor area contains the following Java code:

```
1 public class HelloWorld {  
2     public static void main(String[] args) {  
3         System.out.println("Hello, World");  
4     }  
5 }
```

Below the editor is a terminal window showing the output of the program: "Hello, World [Finished in 1.3s]". The bottom status bar indicates "Line 5, Column 2", "Tab Size: 4", and "Java".

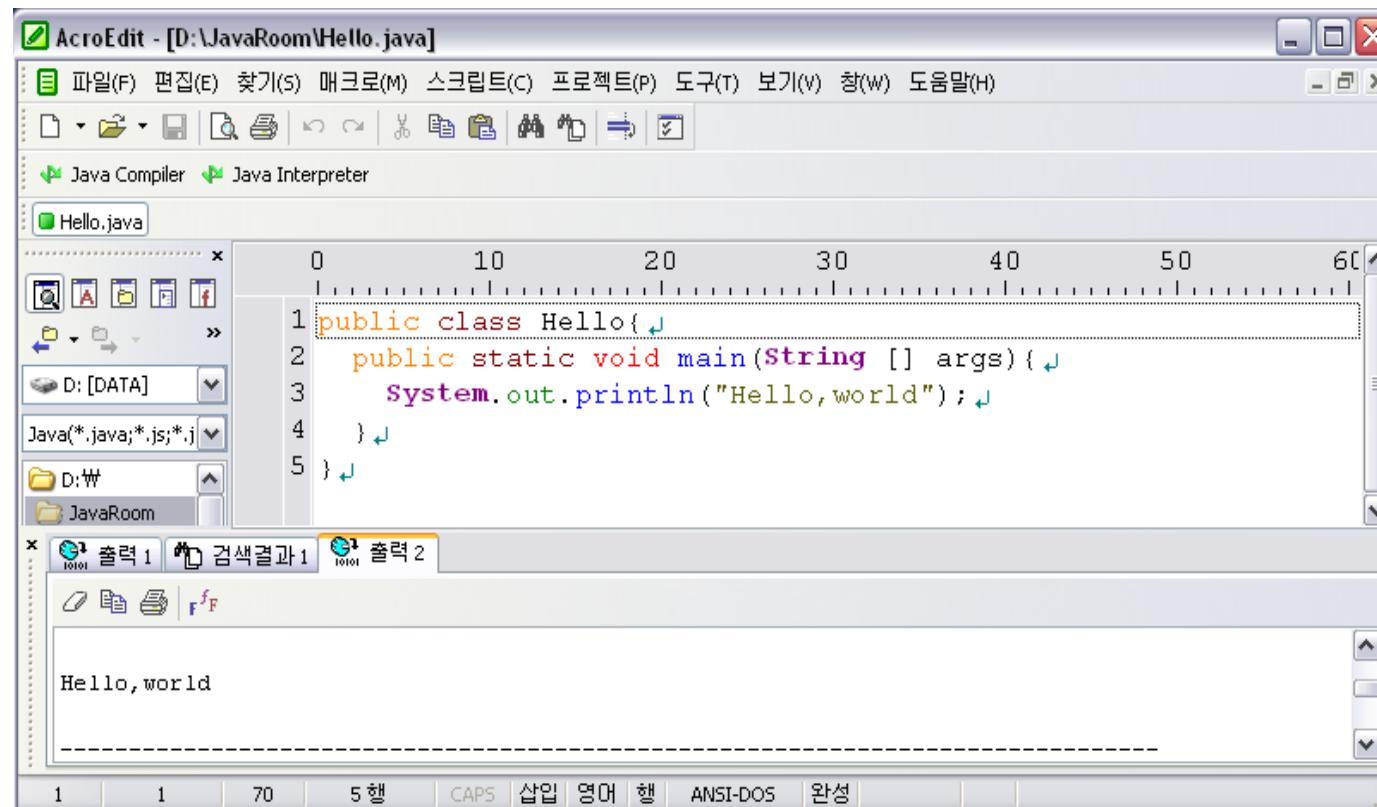
Text Editor - UltraEdit

- UltraEdit-64 (<http://www.ultraedit.com/>)
 - Shareware



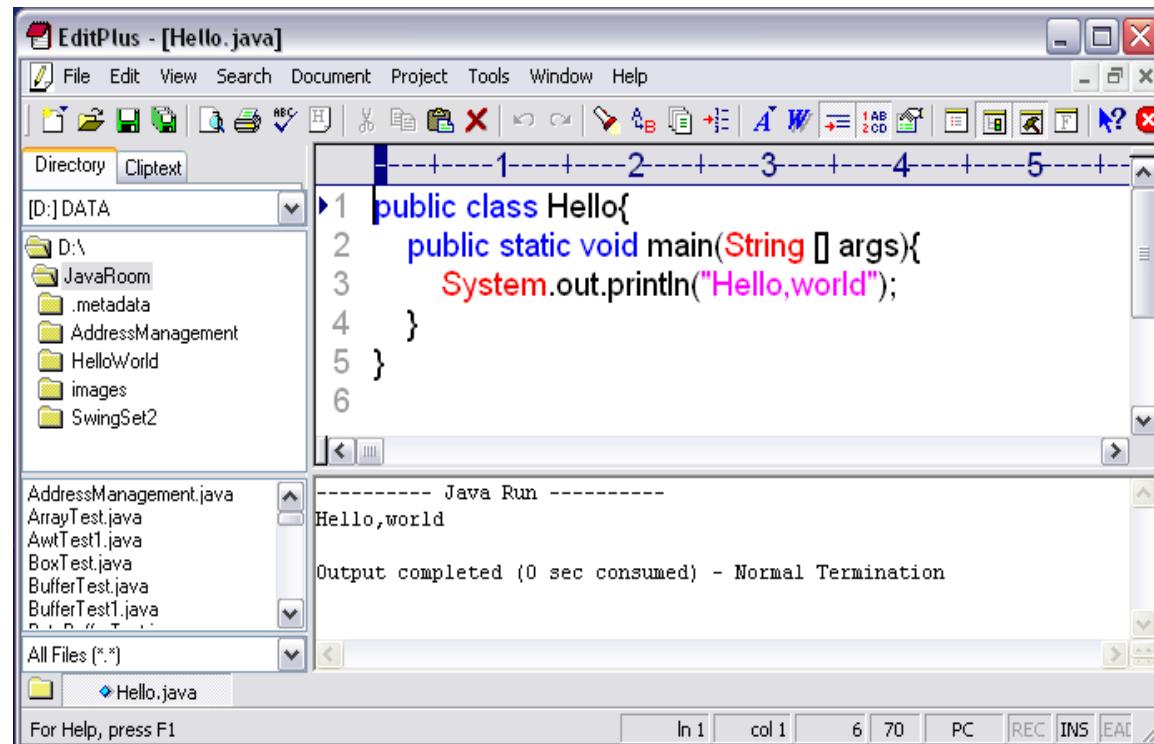
Text Editor - AcroEdit

- AcroEdit – (<http://www.acrosoft.pe.kr/>)
– Freeware



Text Editor - EditPlus

- EditPlus - (<http://www.editplus.com/>) - Shareware



The screenshot shows the EditPlus text editor interface. The main window displays a Java file named Hello.java with the following code:

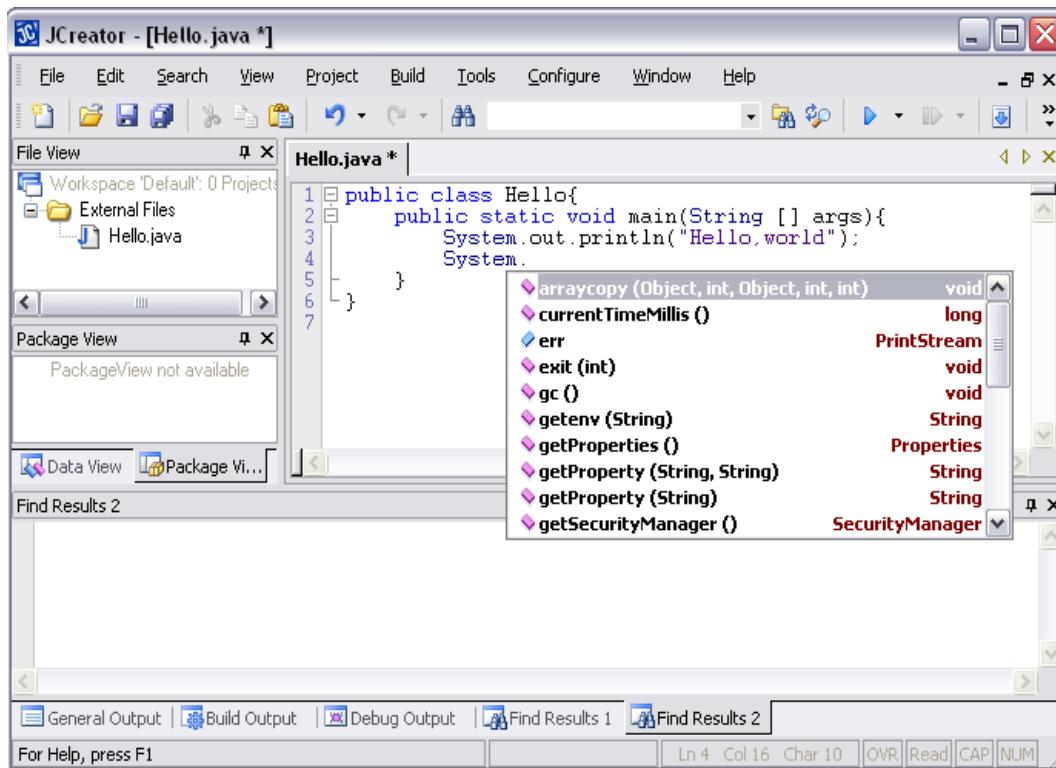
```
1 public class Hello{  
2     public static void main(String [] args){  
3         System.out.println("Hello,world");  
4     }  
5 }  
6
```

Below the code, the status bar shows "Java Run" and the output "Hello,world". The status bar also includes navigation and editing keys like ln 1, col 1, 6 70, PC, REC, INS, and EAI.



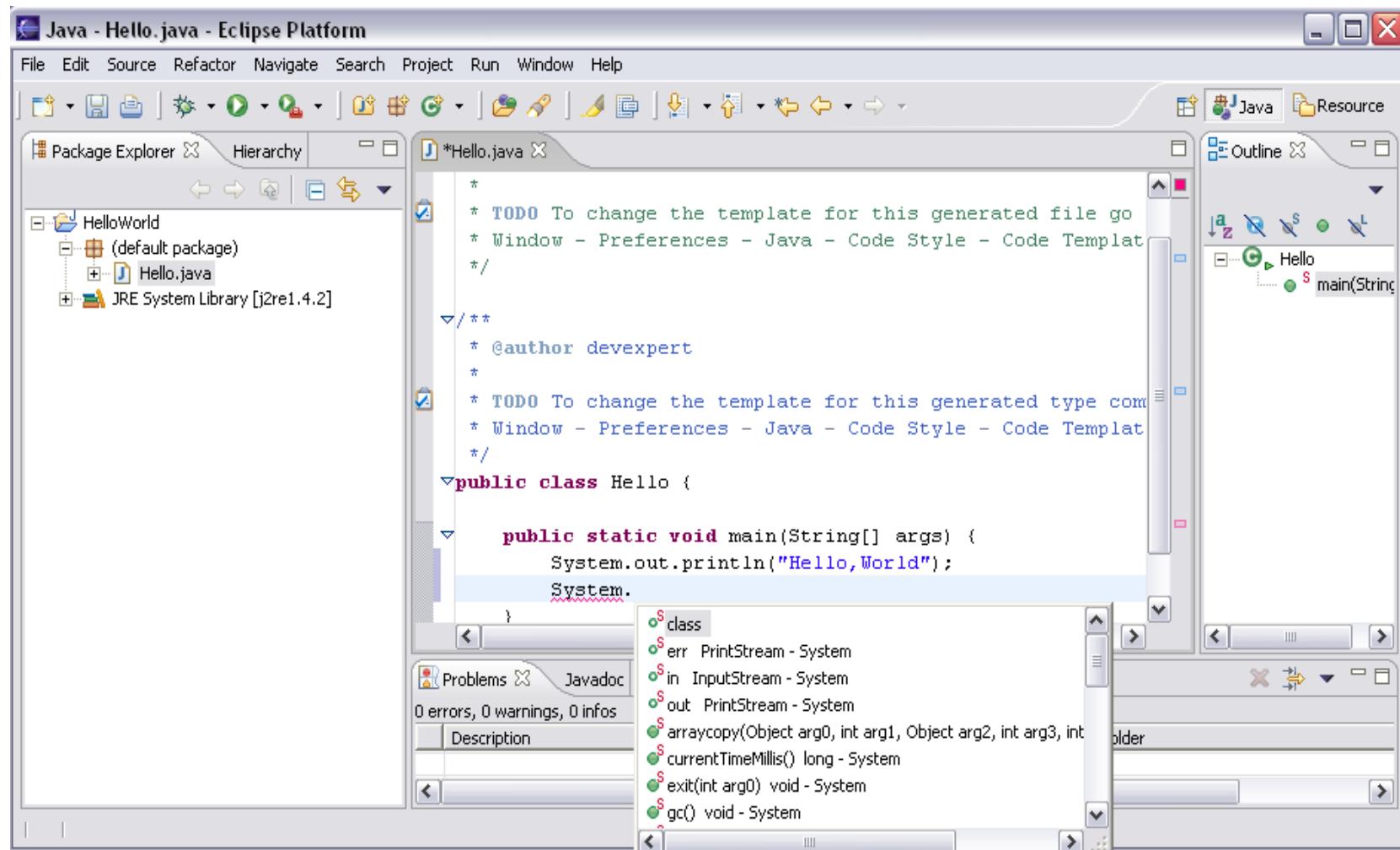
Java Text Editor – JCreator

- JCreator Pro (<http://www.jcreator.com/>)



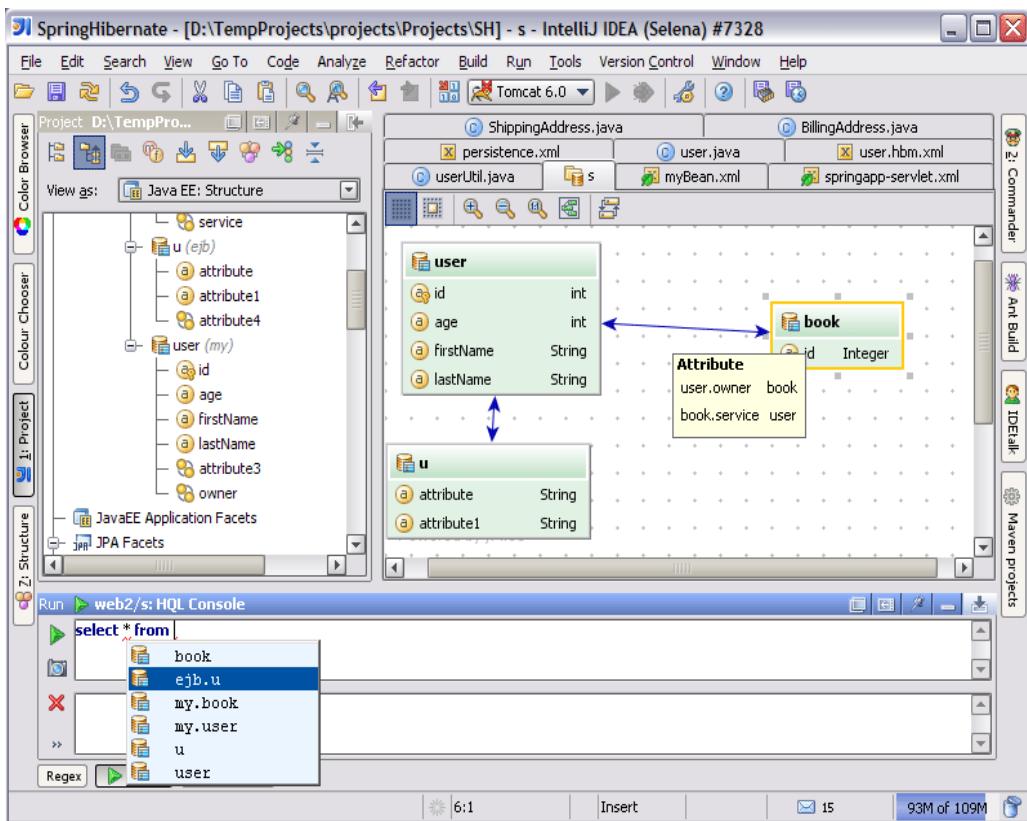
Java Text Editor - eclipse

- Eclipse (<http://www.eclipse.org/>)



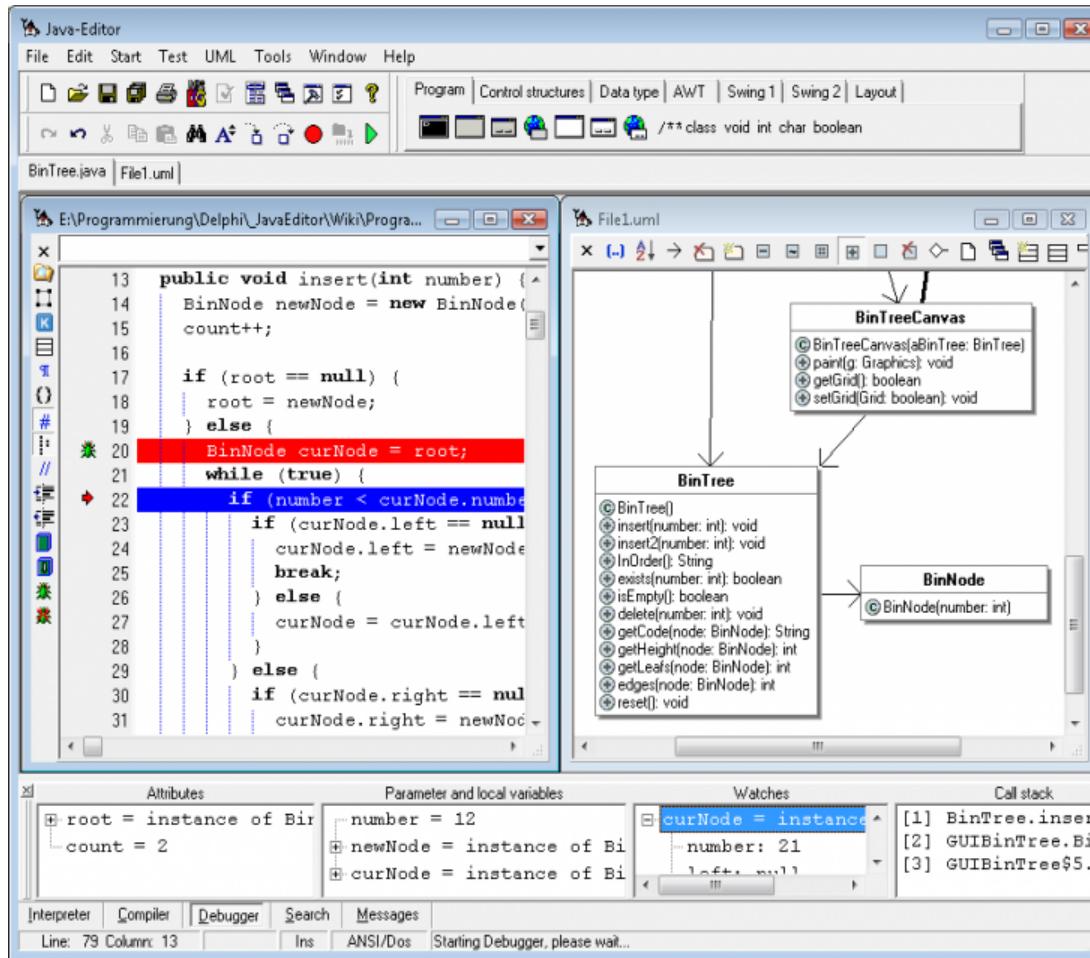
Java Text Editor - IntelliJ

- IntelliJ IDEA (<http://www.jetbrains.com/>)



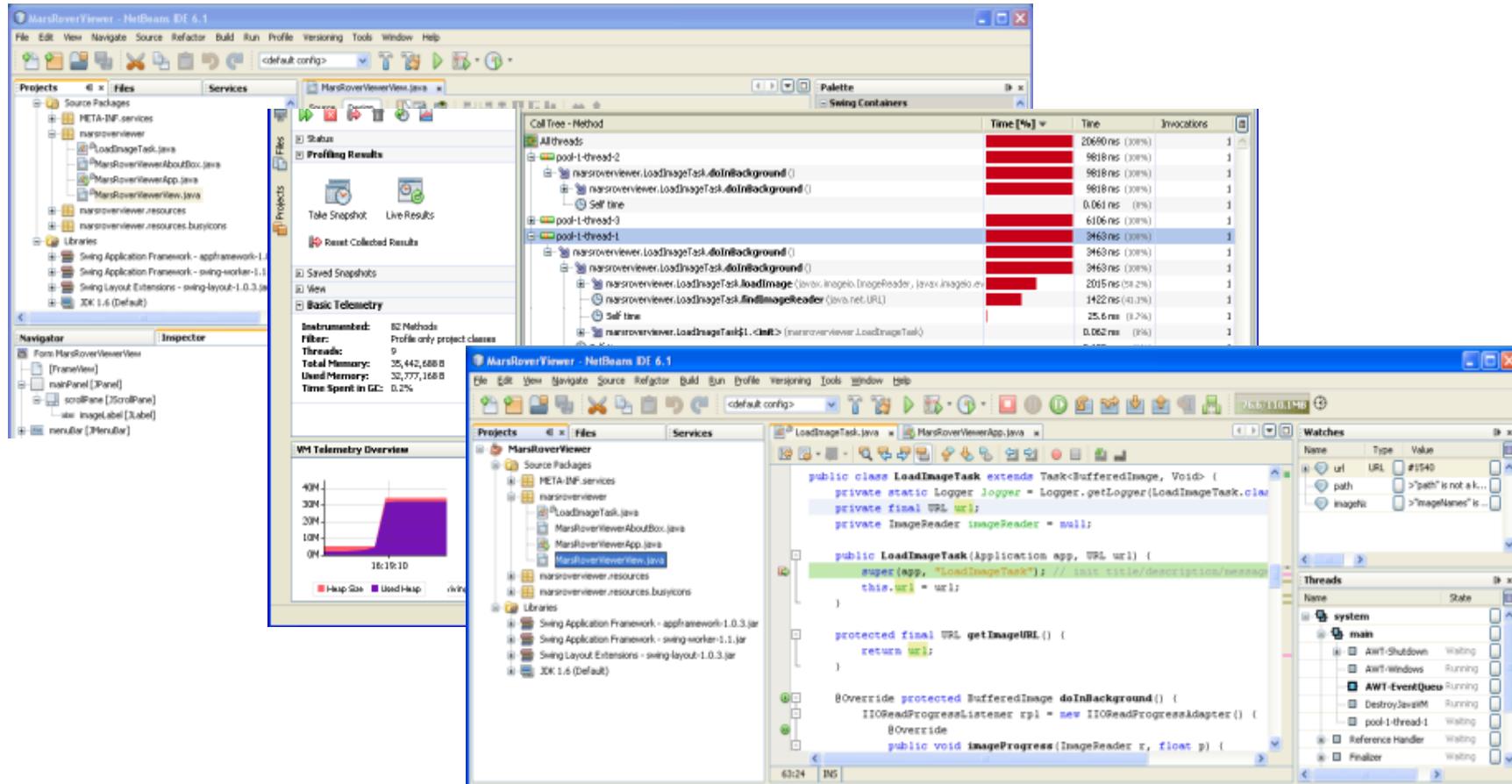
IDE Tools – Java-Editor

- Java-Editor (http://www.javaeditor.org/index.php/Main_Page)



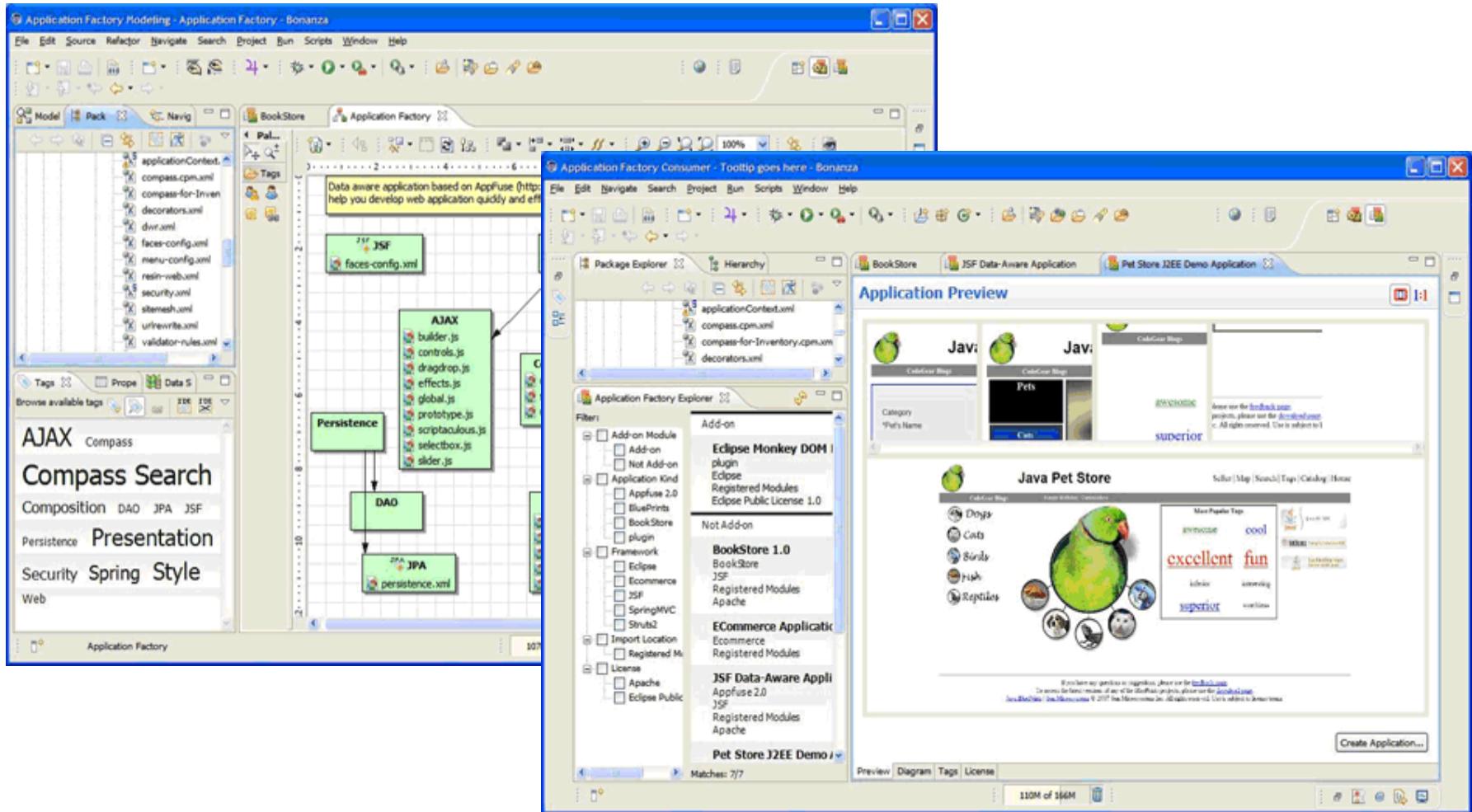
IDE Tools - NetBeans

- NetBeans IDE (<http://www.netbeans.org/>)



IDE Tools - JBuilder

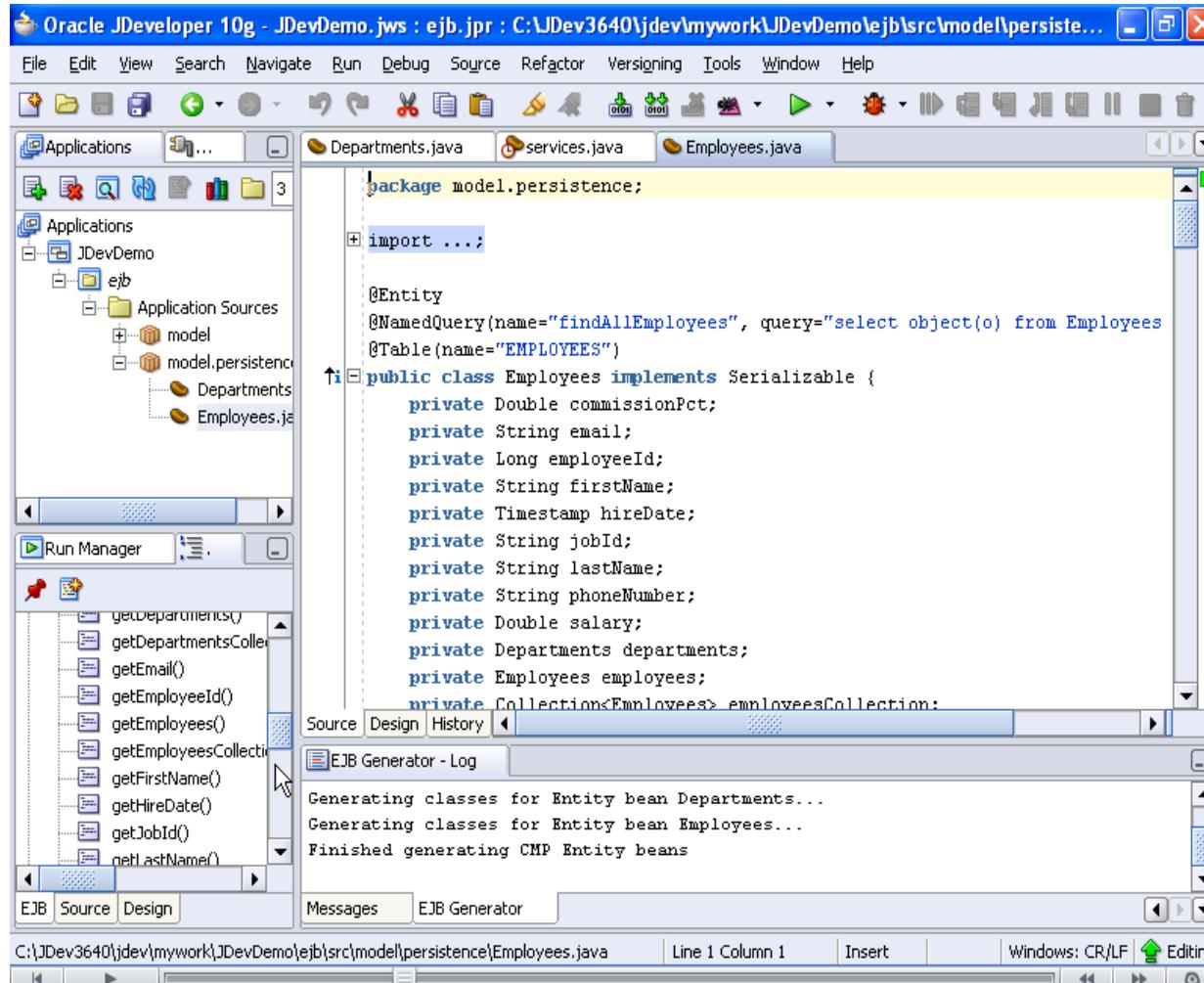
- JBuilder (<https://www.embarcadero.com>)



IDE Tools - JDeveloper

JDeveloper

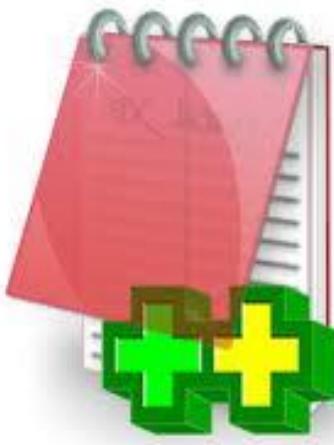
(<http://www.oracle.com/technology/products/jdev/index.html/>)



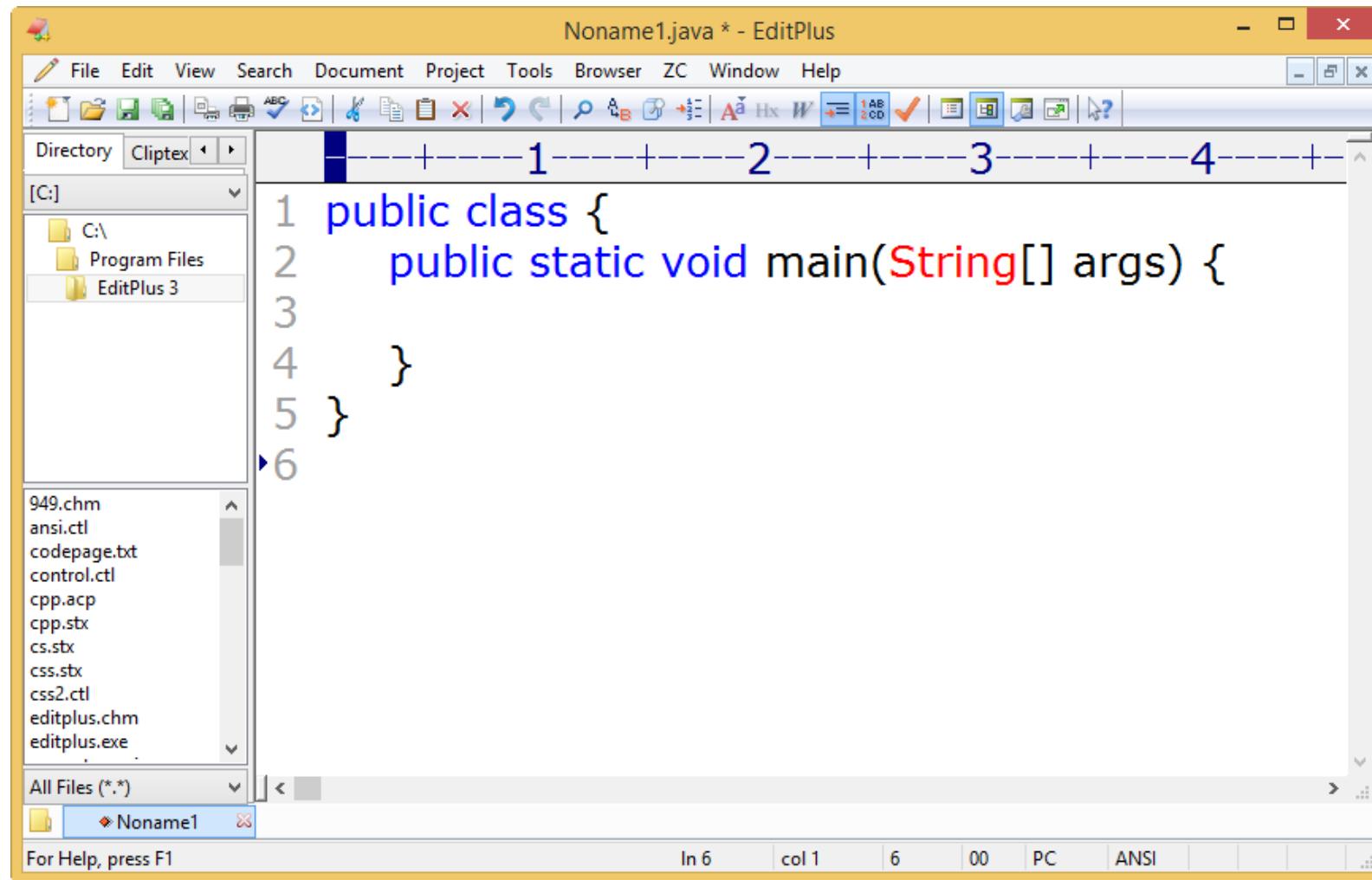
Etc Tools

- Code Warrior by Metrowerks :
<http://www.metrowerks.com>
- TextPad Editor : <http://www.textpad.com>
- JEdit : <http://www.jedit.org>
- JGrasp : <http://www.jgrasp.org>
- BlueJ : <http://www.bluej.org>
- DrJava : <http://drjava.sourceforge.net>

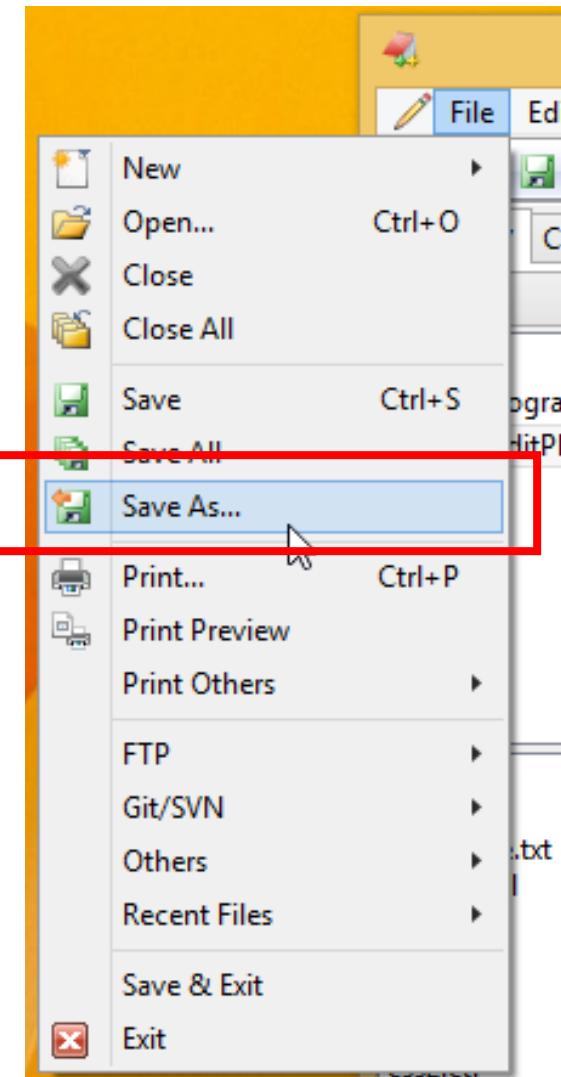
EditPlus Setting on Windows Platform



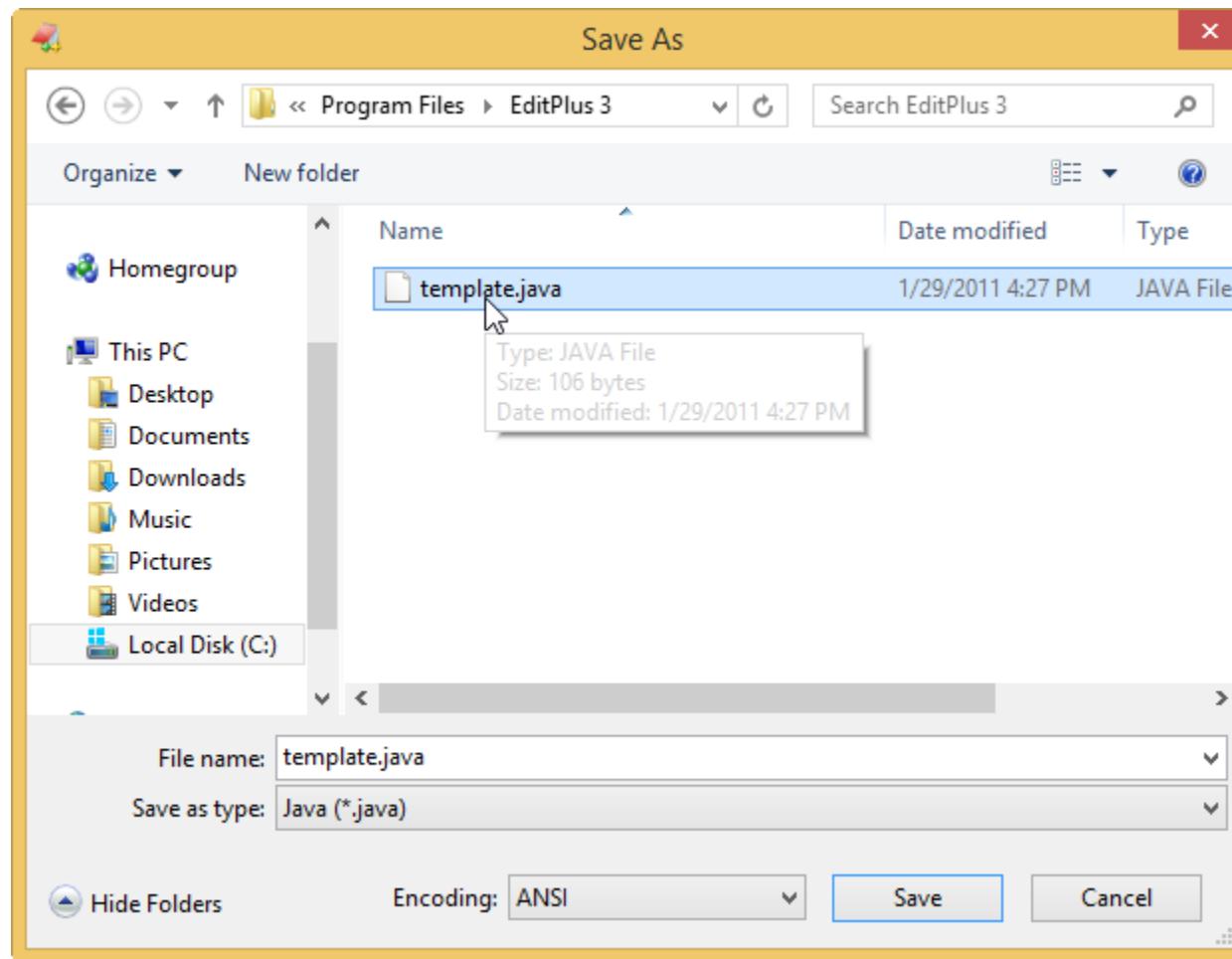
Template Configuration



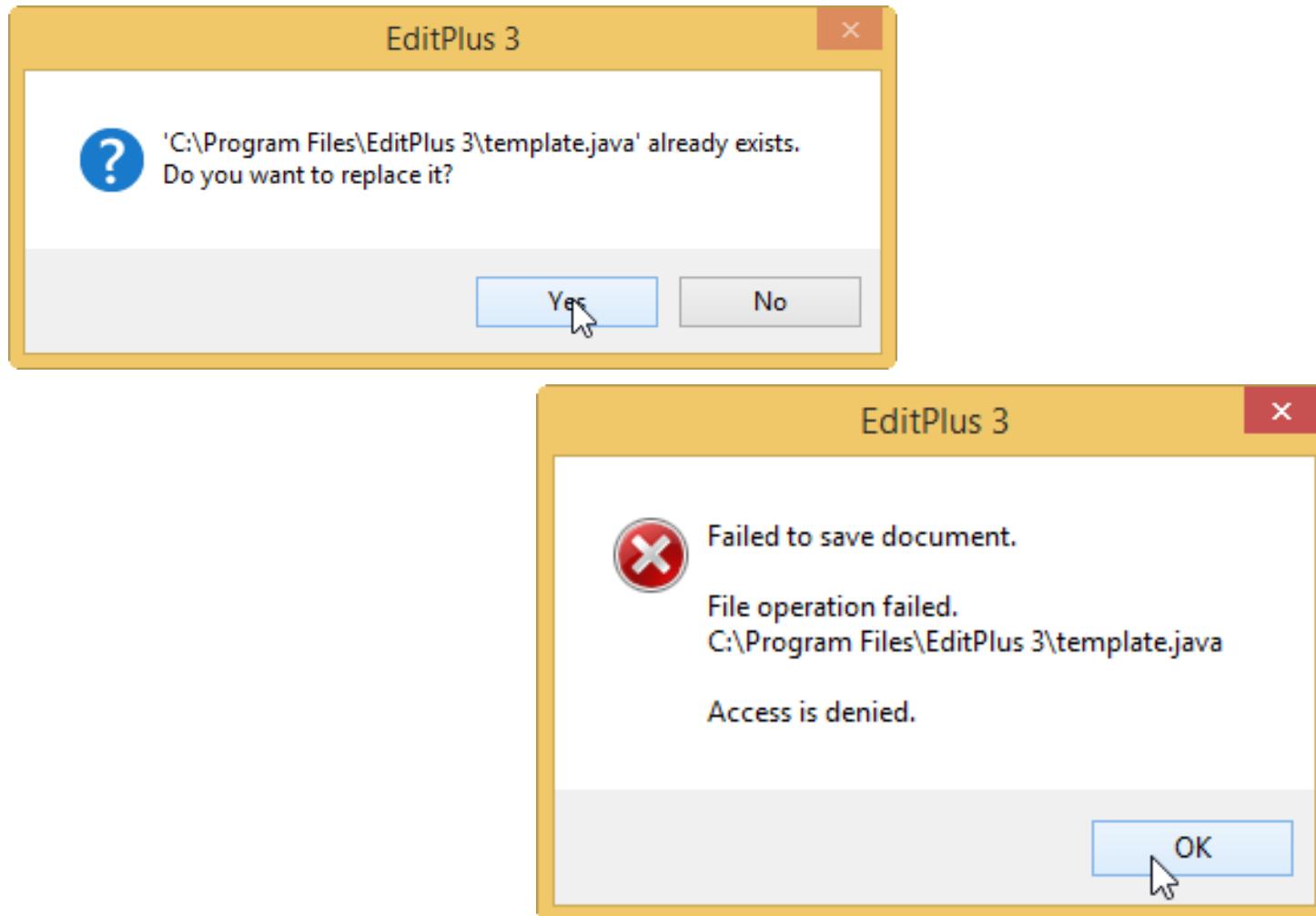
Template Configuration (Cont.)



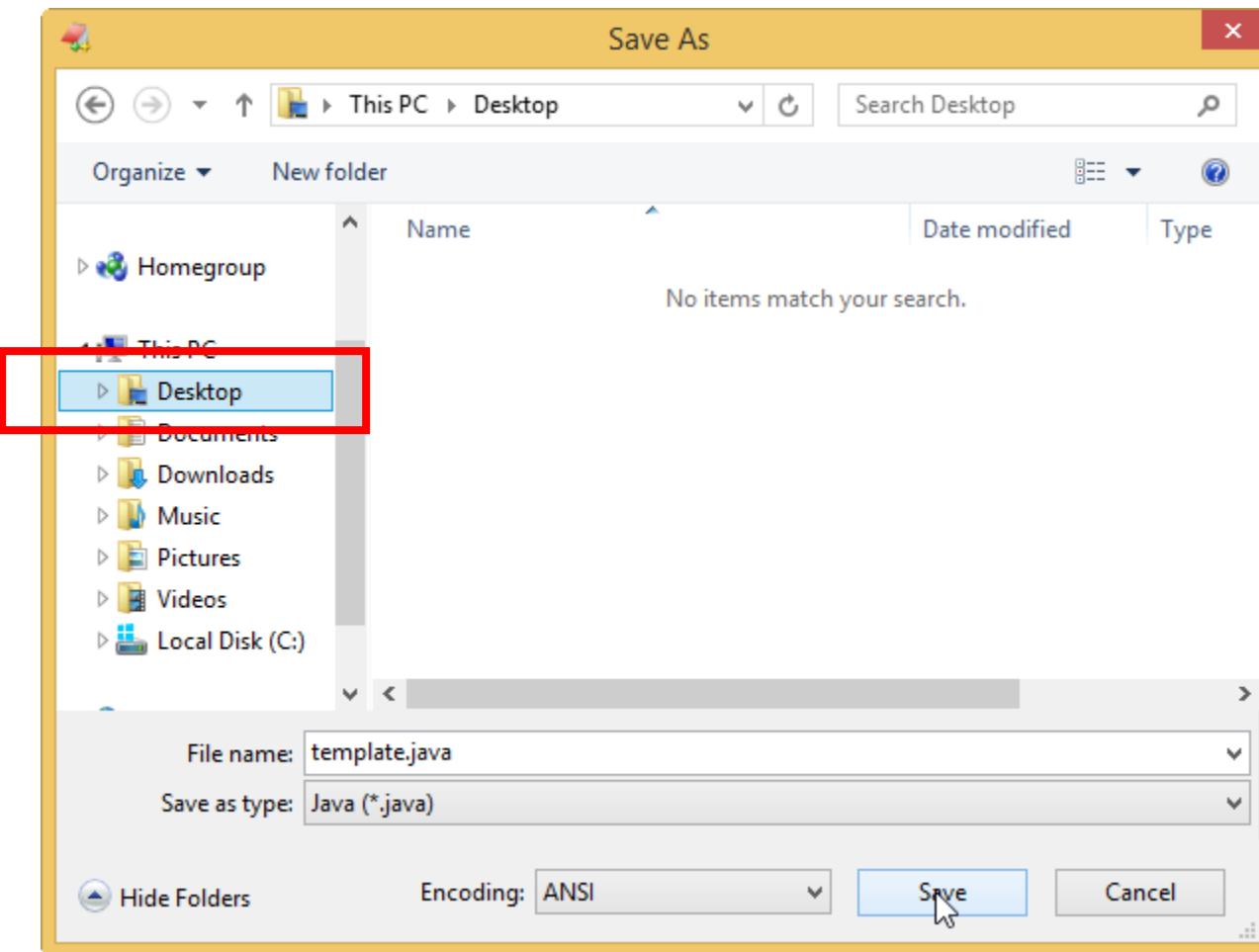
Template Configuration (Cont.)



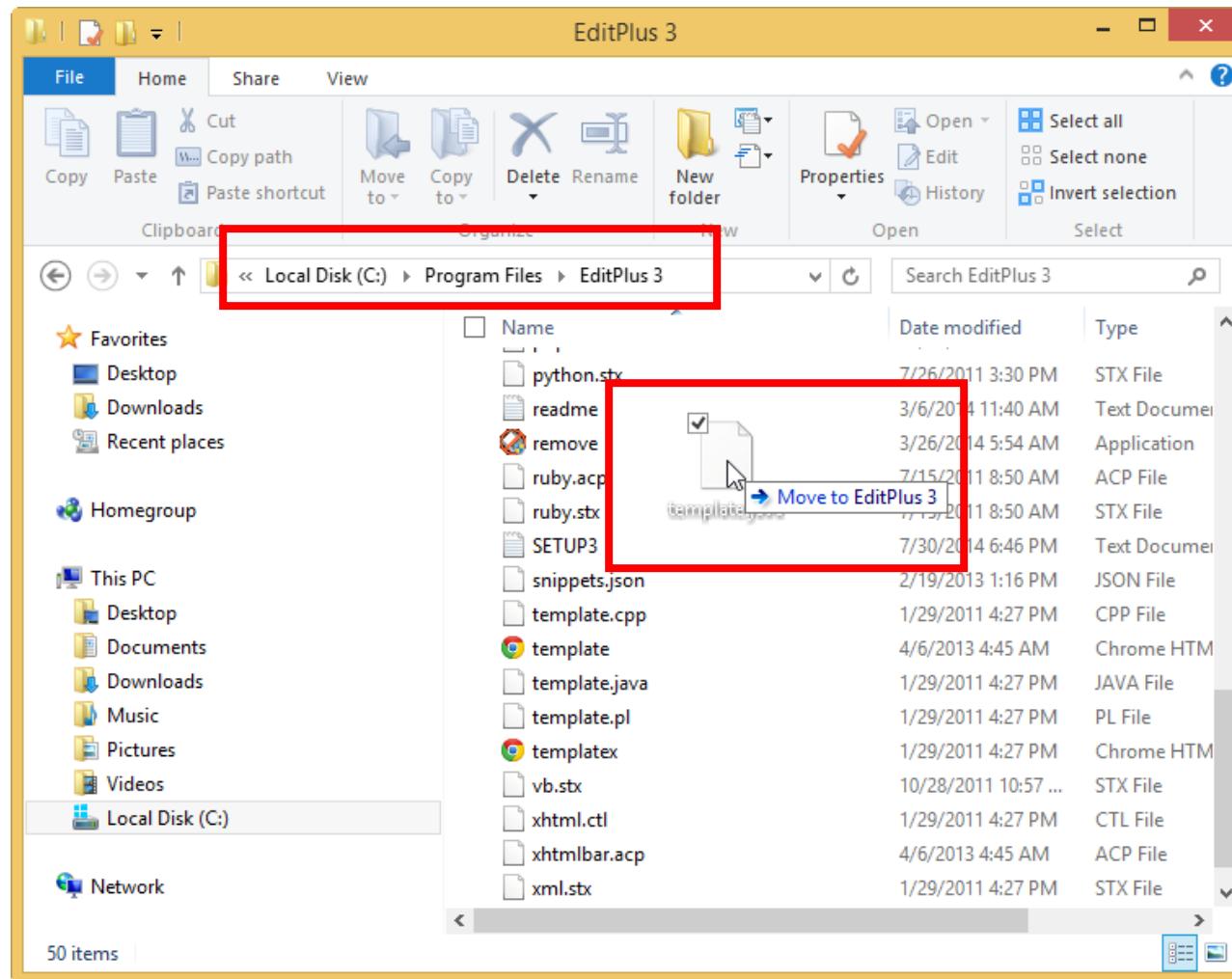
Template Configuration (Cont.)



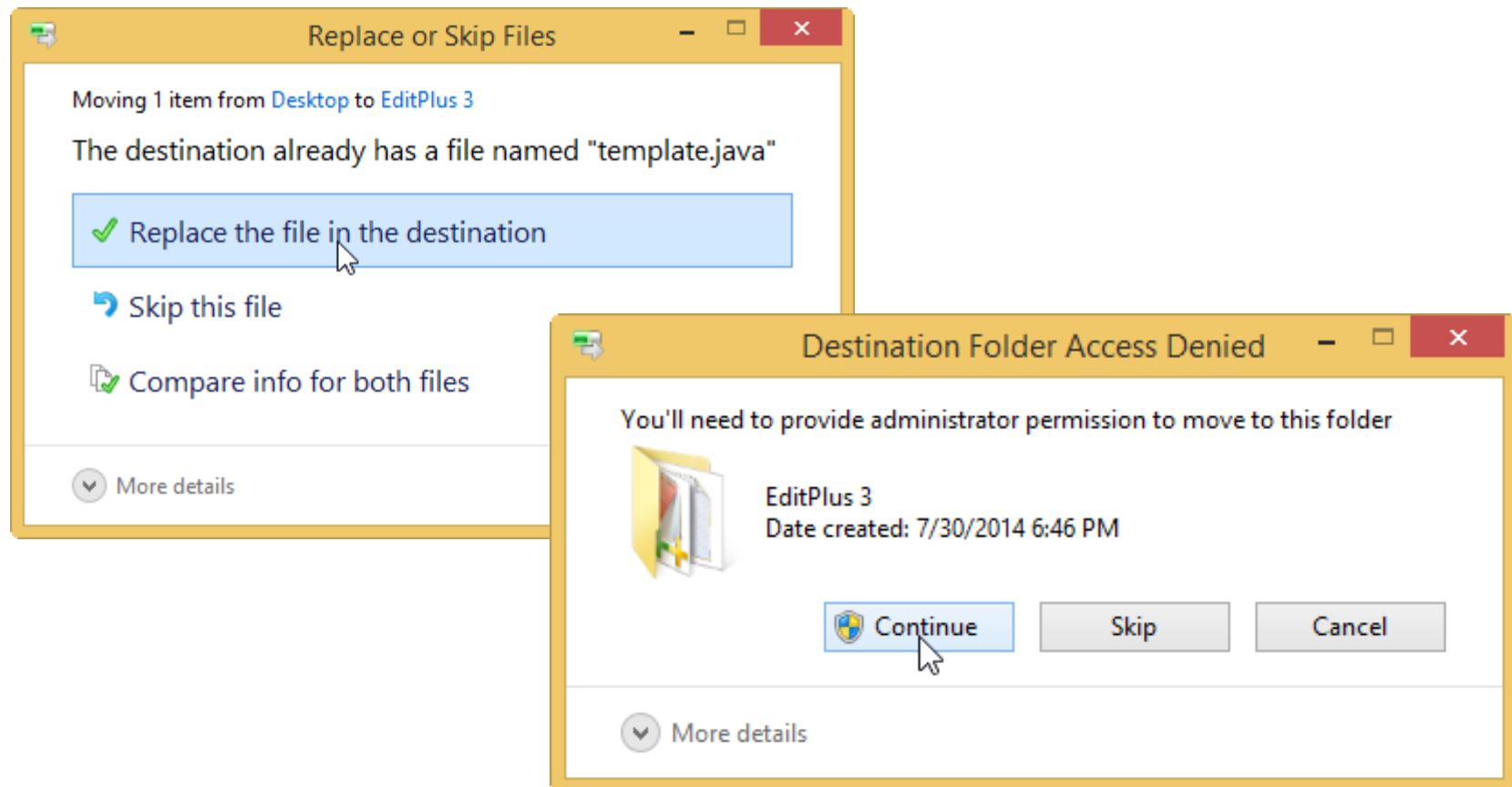
Template Configuration (Cont.)



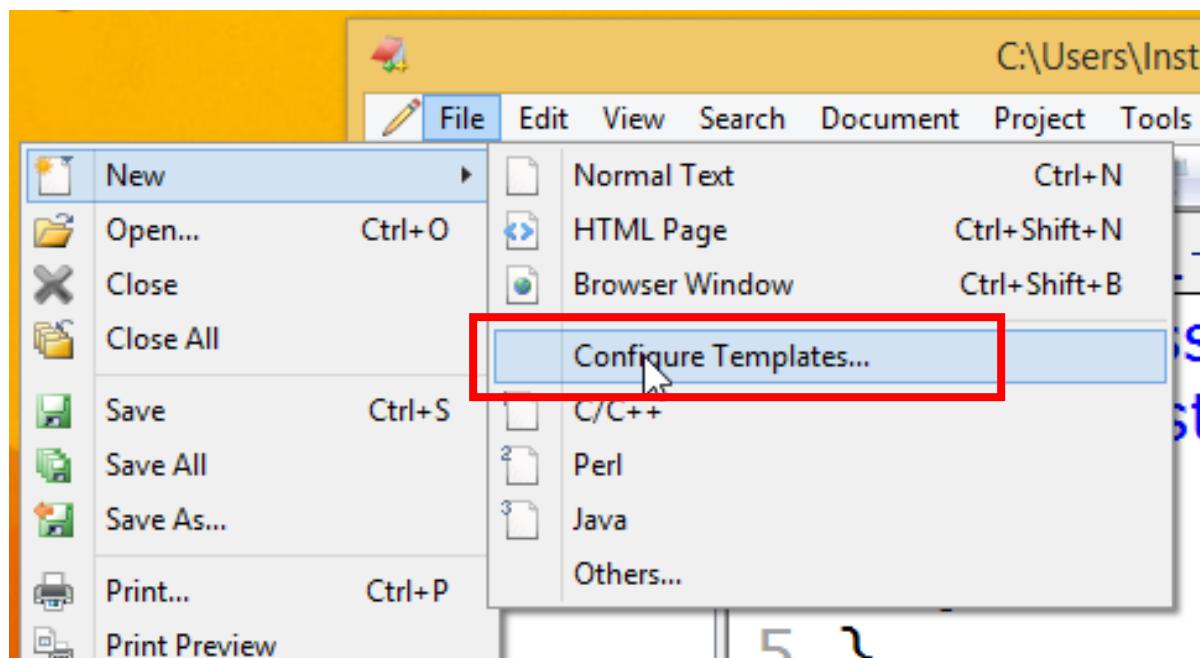
Template Configuration (Cont.)



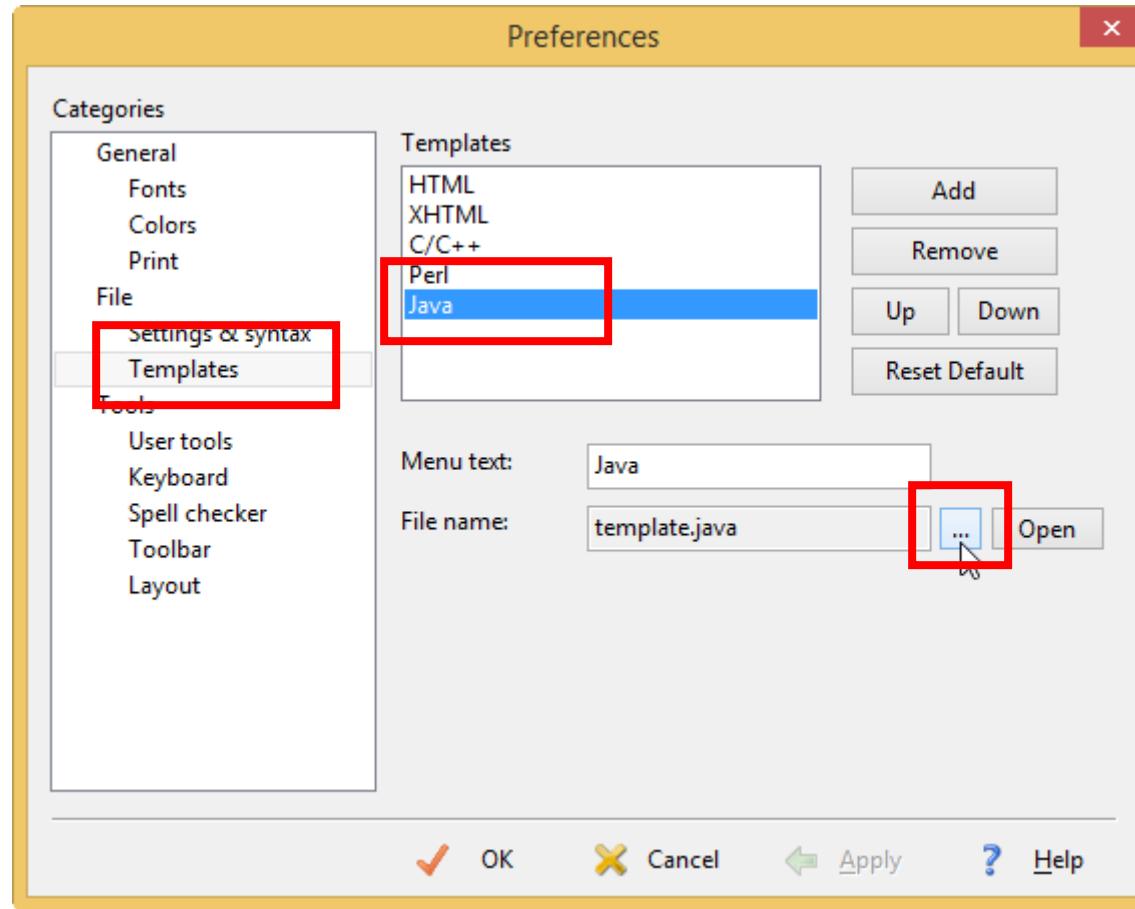
Template Configuration (Cont.)



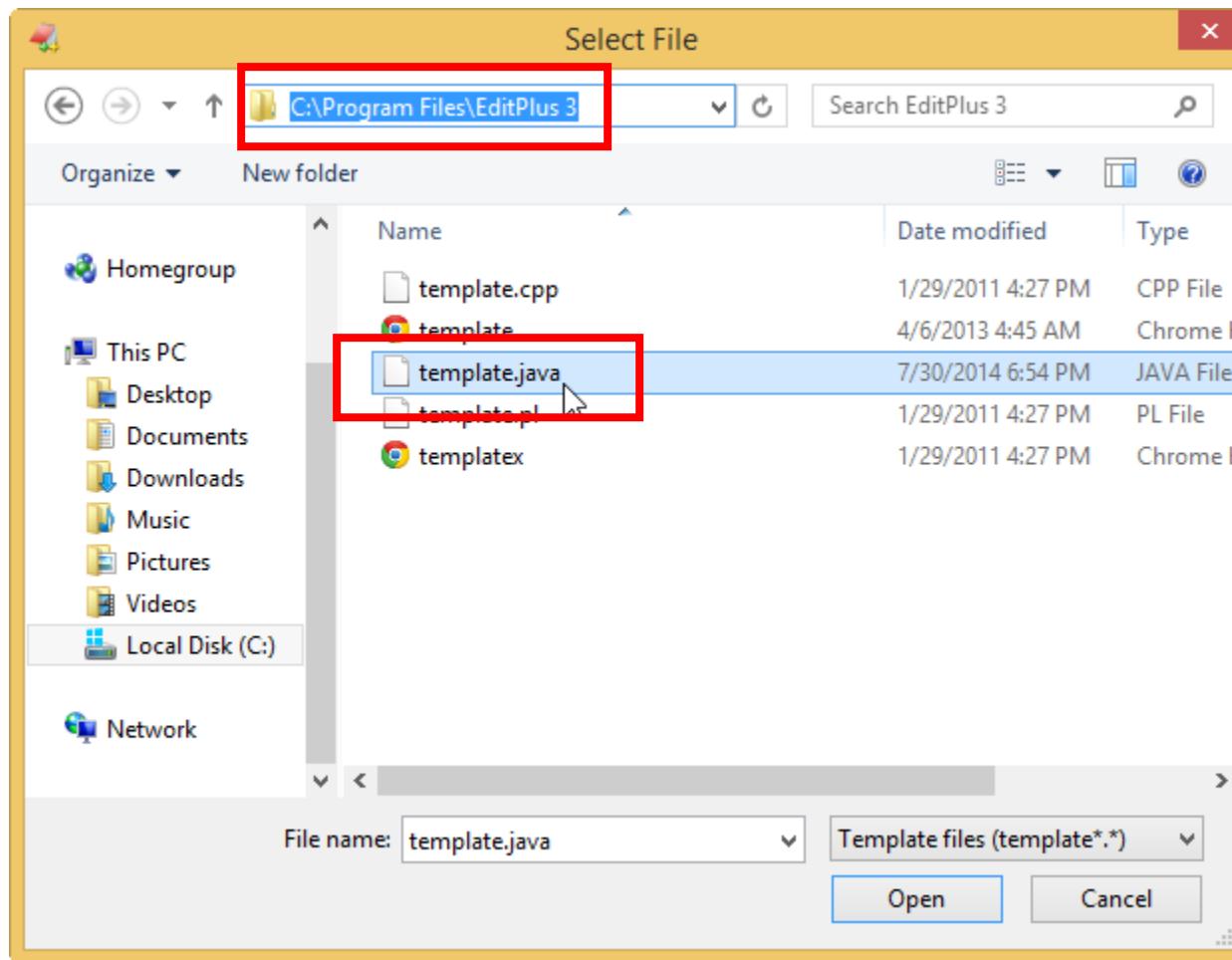
Template Configuration (Cont.)



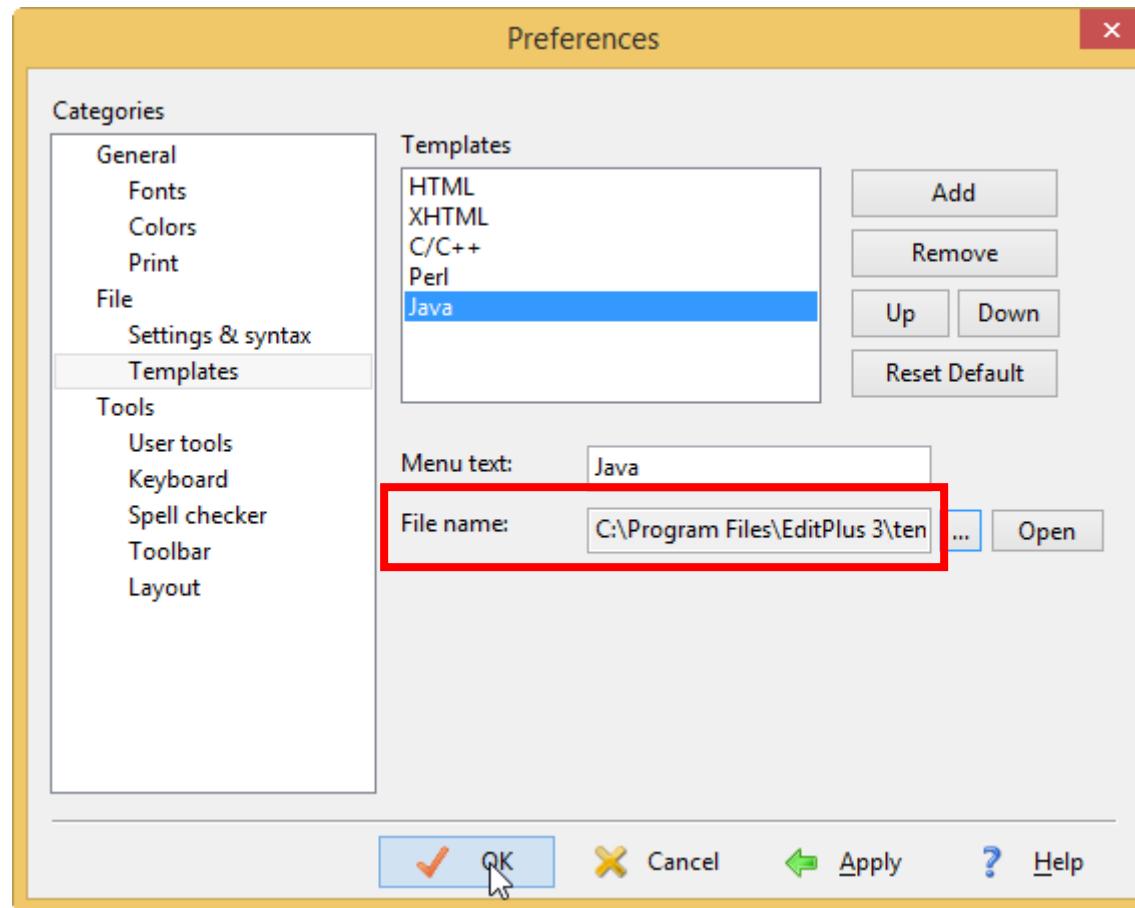
Template Configuration (Cont.)



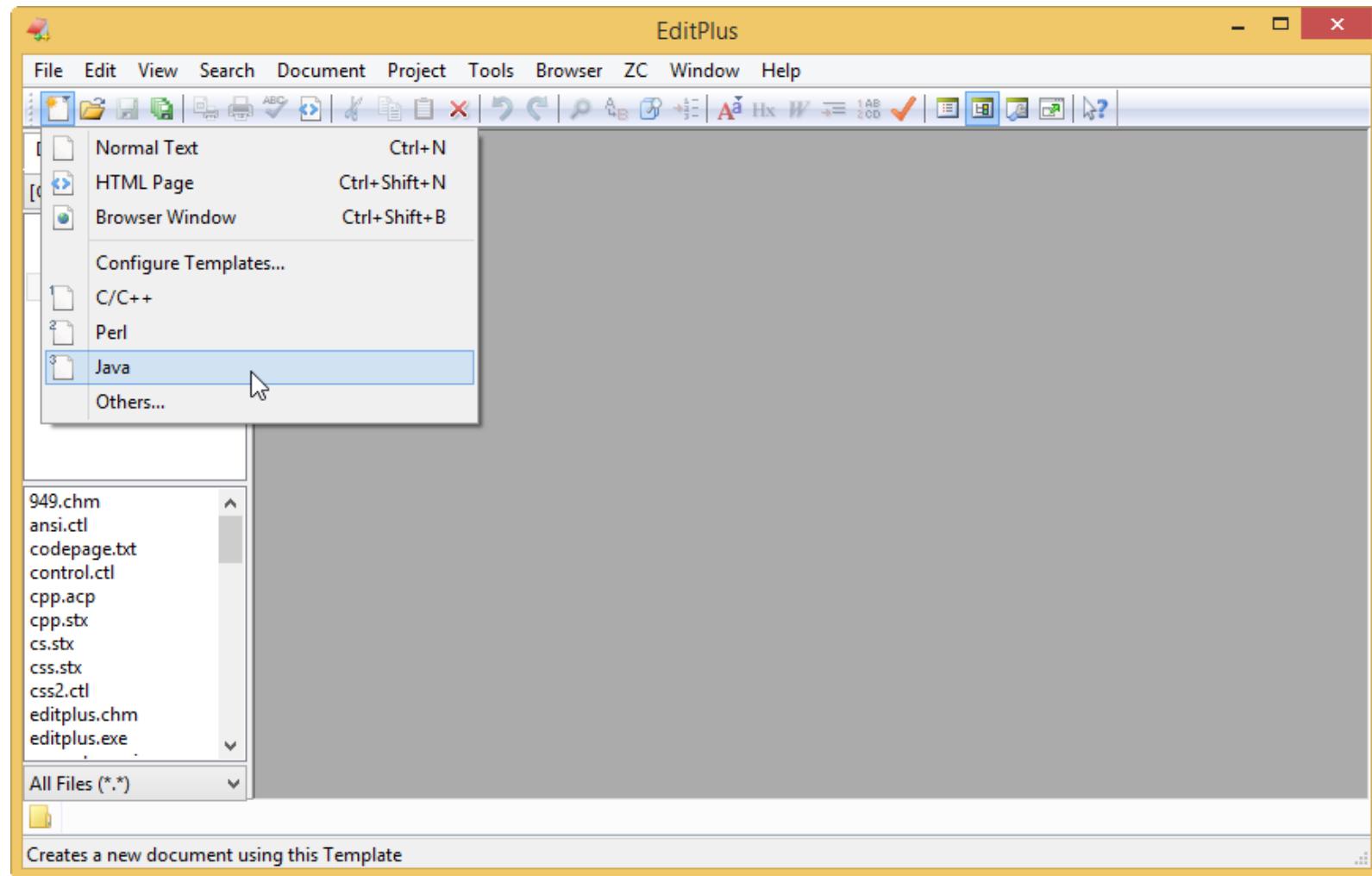
Template Configuration (Cont.)



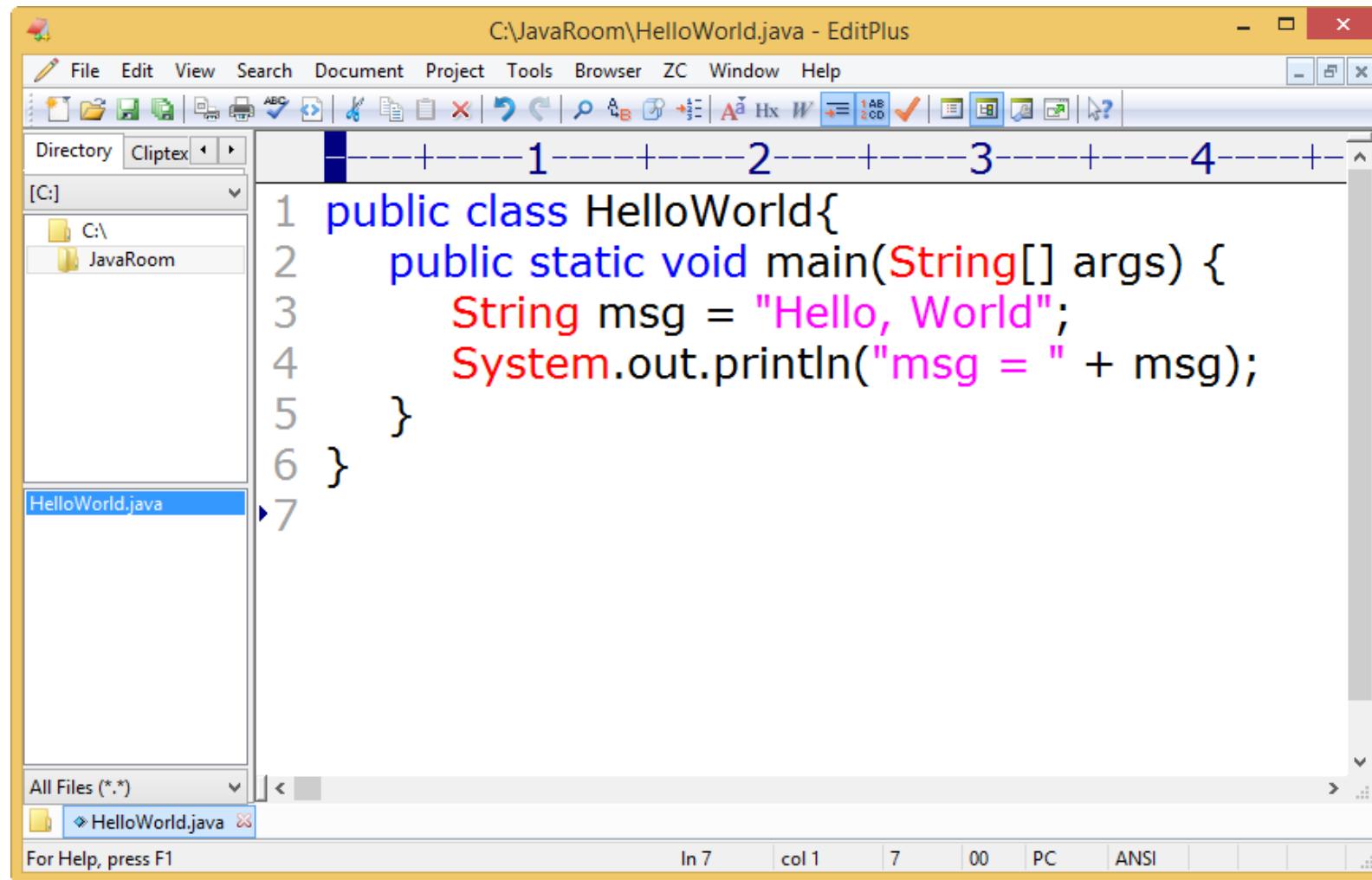
Template Configuration (Cont.)



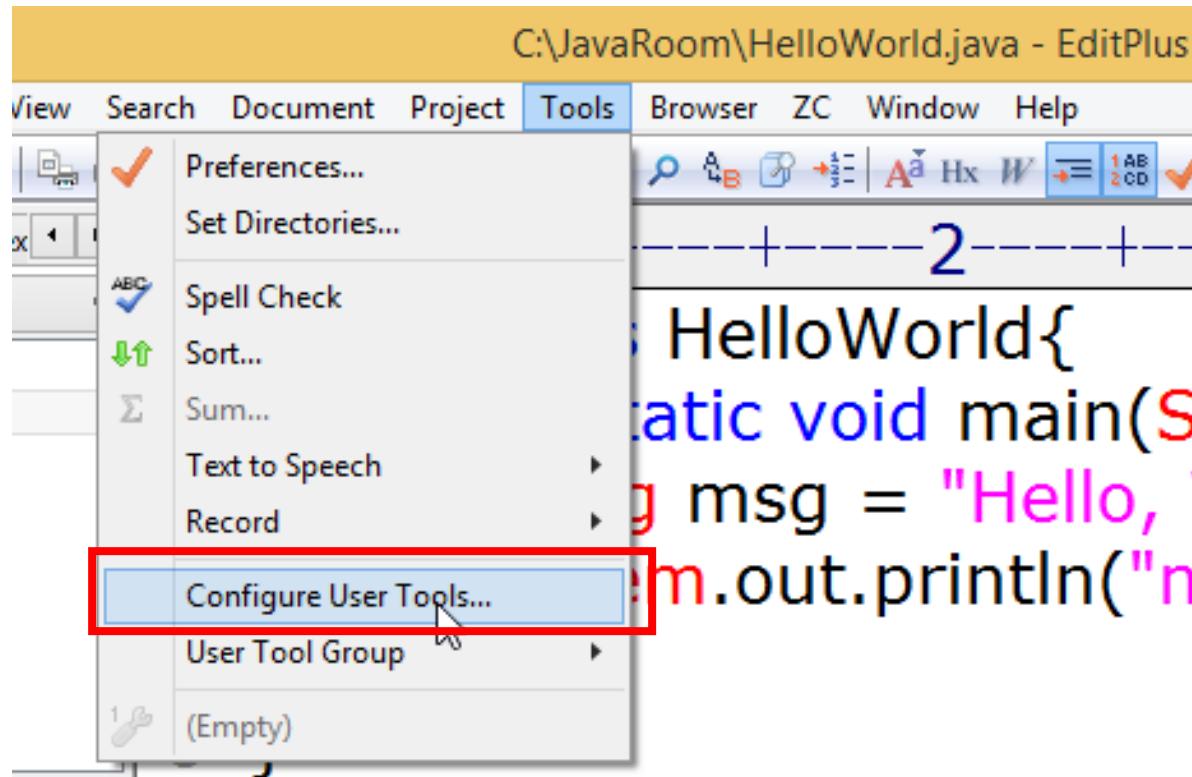
Template Configuration (Cont.)



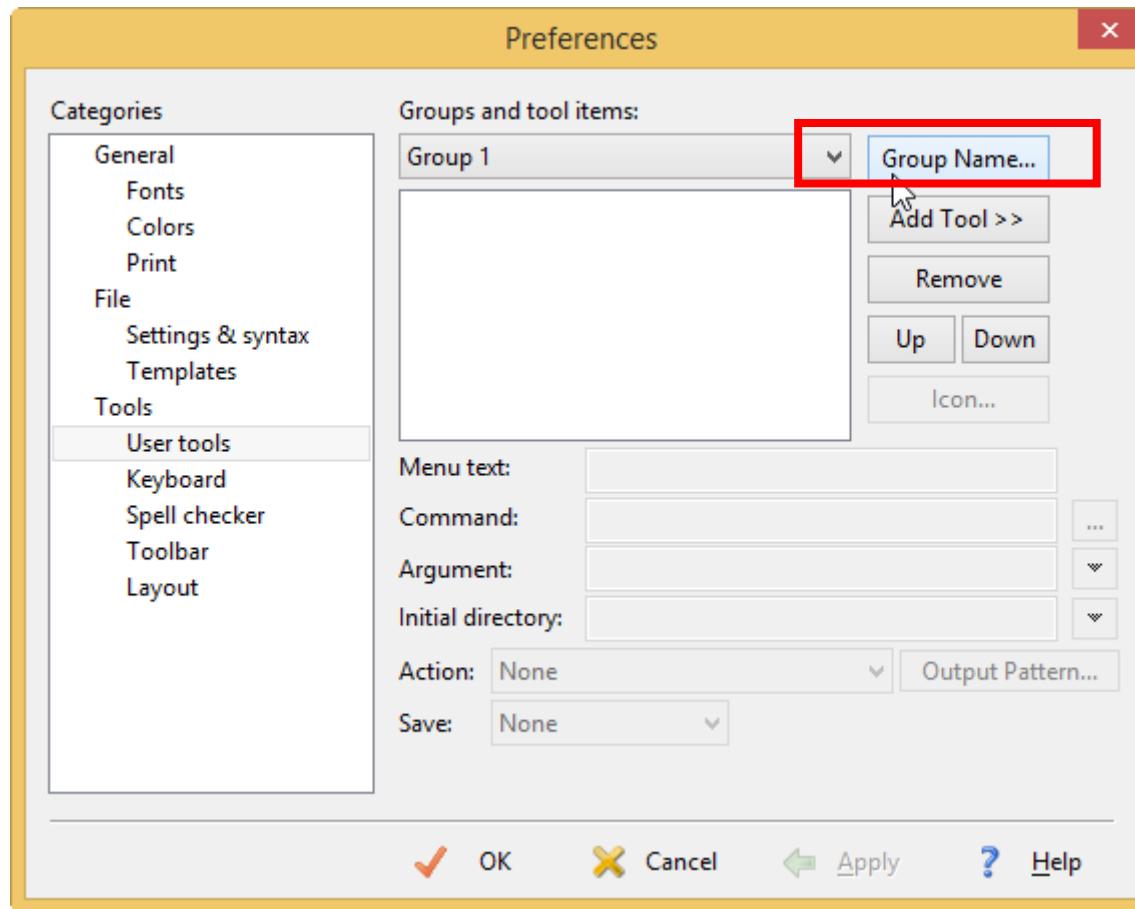
Configure User Tools



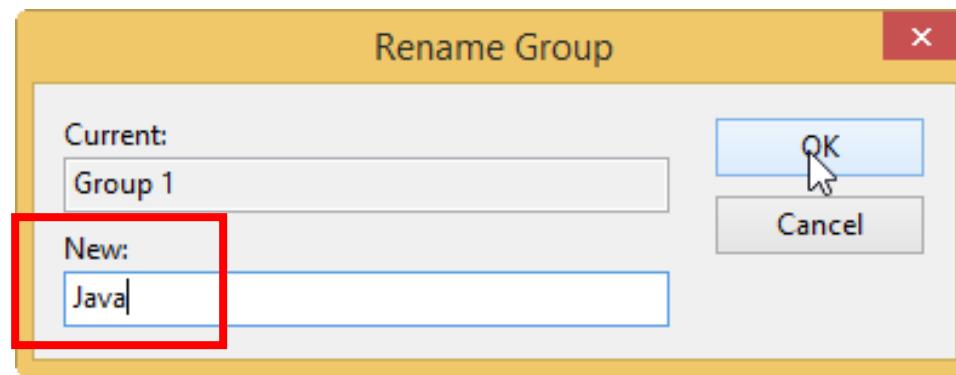
Configure User Tools



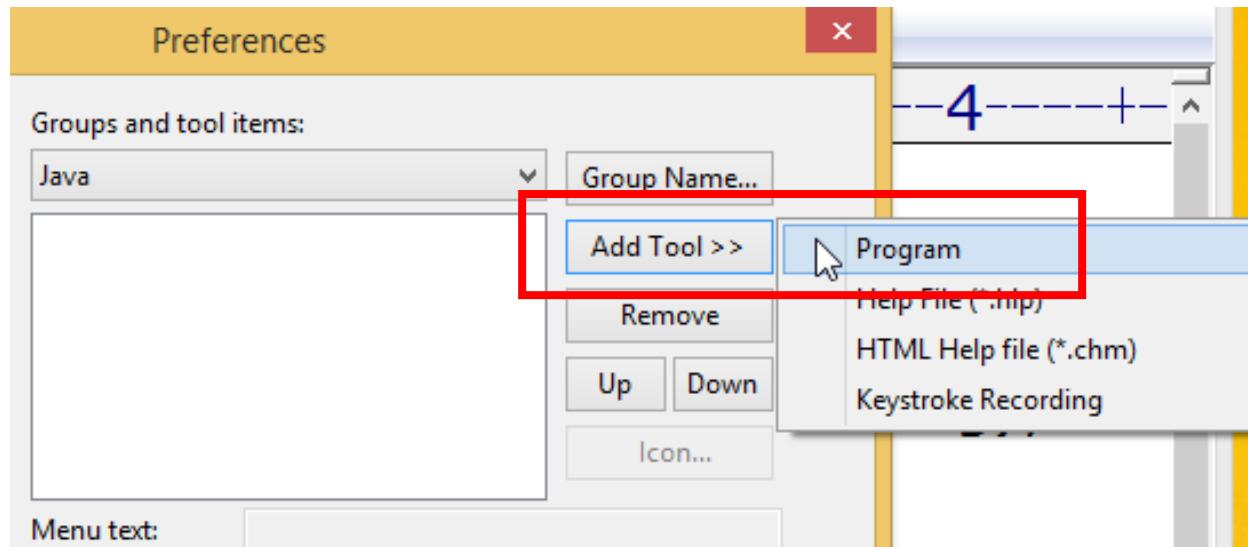
Change Group Name



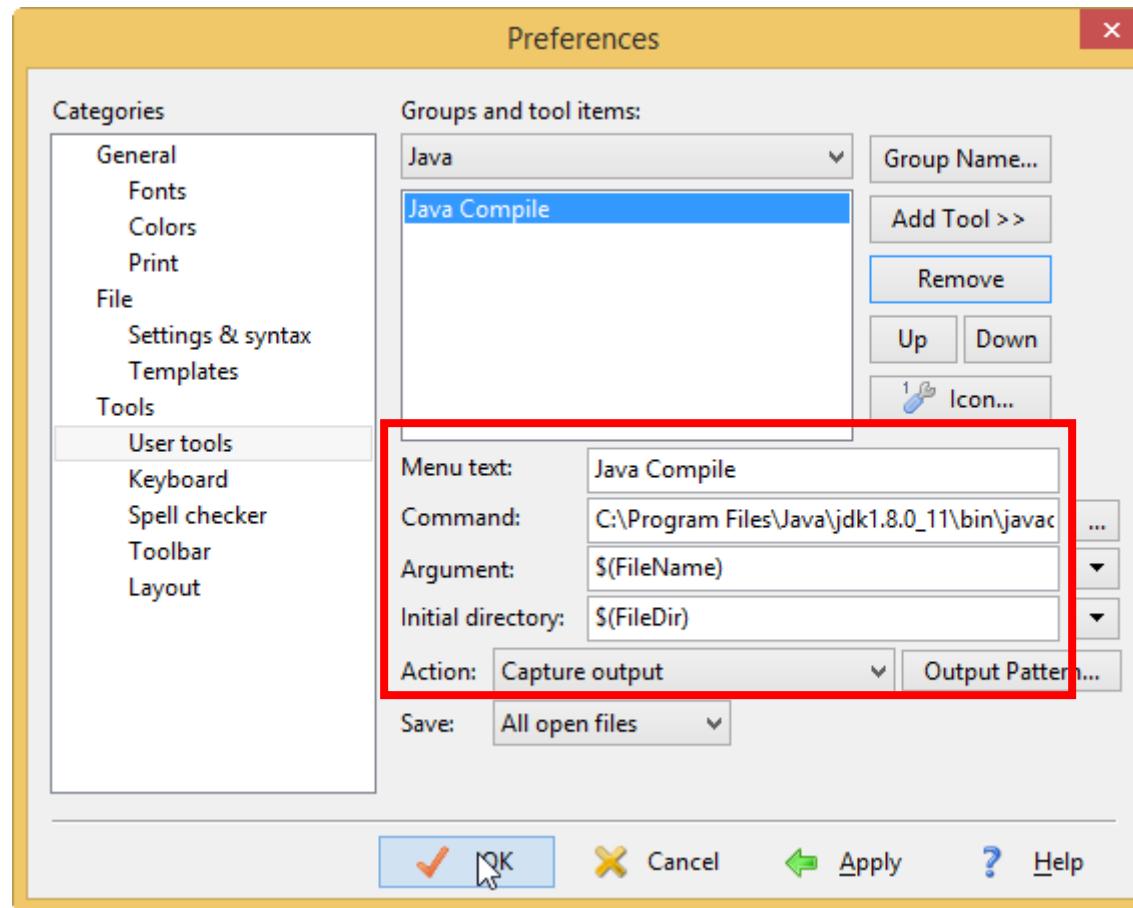
Change Group Name (Cont.)



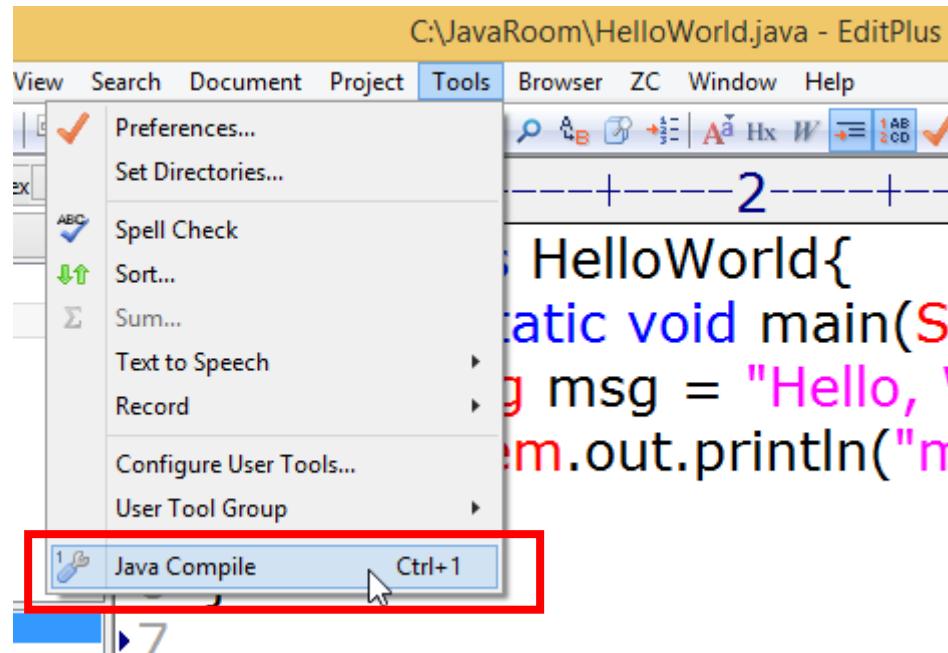
Register Compiler Tool



Register Compiler Tool (Cont.)



Register Compiler Tool (Cont.)



Register Compiler Tool (Cont.)

The screenshot shows the EditPlus text editor interface. The title bar reads "C:\JavaRoom\HelloWorld.java - EditPlus". The menu bar includes File, Edit, View, Search, Document, Project, Tools, Browser, ZC, Window, and Help. The toolbar contains various icons for file operations like Open, Save, Print, and Find. The left sidebar shows a directory tree with "C:\JavaRoom" selected, and a file list with "HelloWorld.java" highlighted. The main code editor area displays the following Java code:

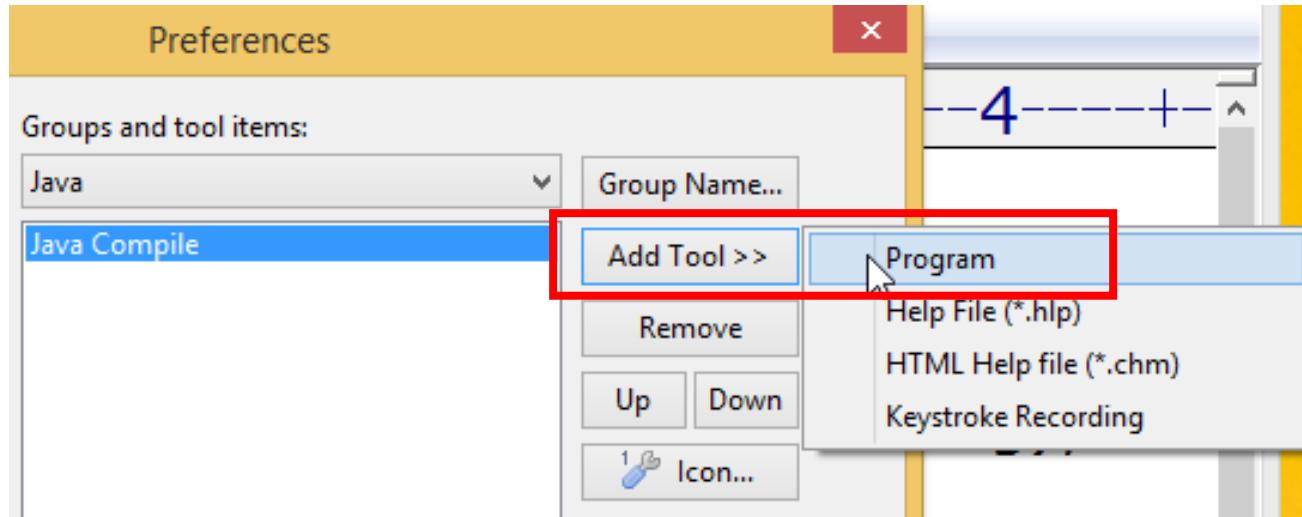
```
1 public class HelloWorld{
2     public static void main(String[] args) {
3         String msg = "Hello, World";
4         System.out.println("msg = " + msg);
5     }
6 }
7
```

The status bar at the bottom shows "For Help, press F1", "In 7", "col 1", "7 00 PC ANSI", and other status indicators.

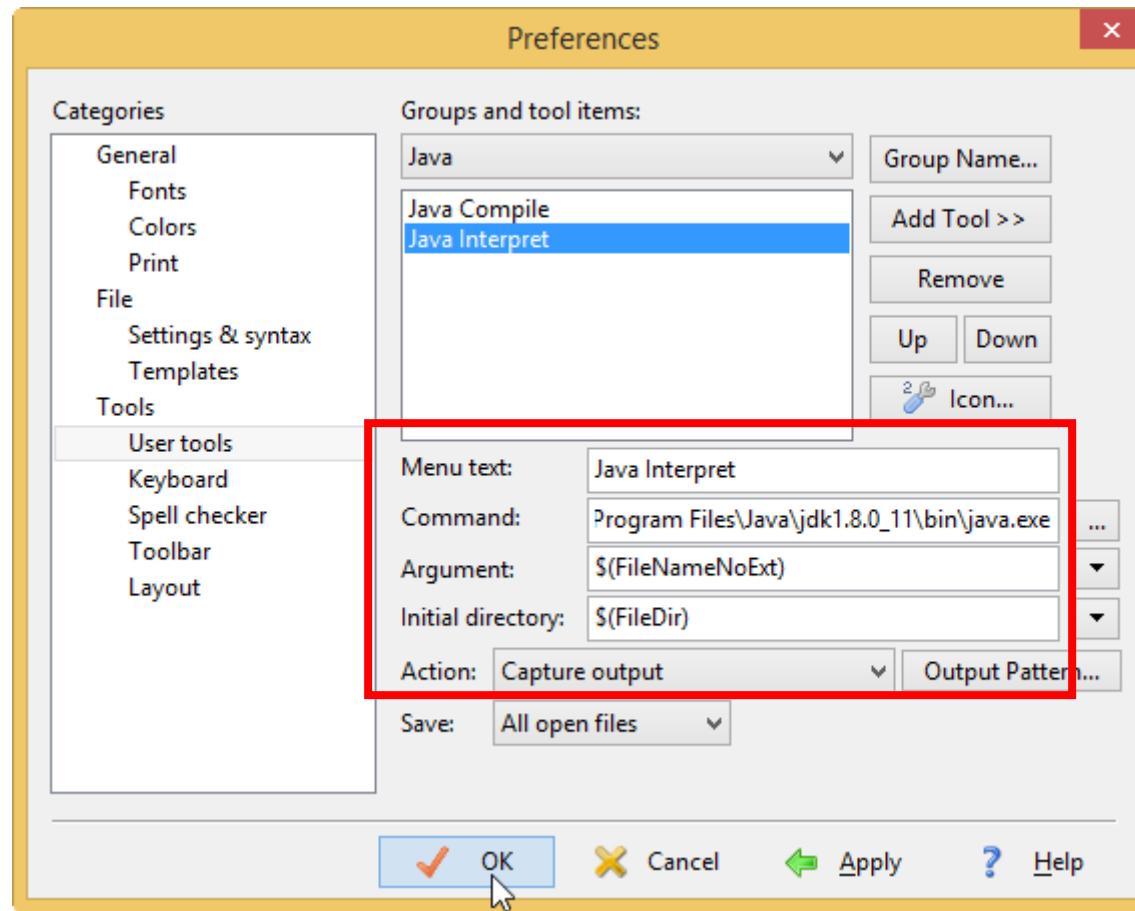
A red box highlights the message in the status bar:

----- Java Compile -----
Output completed (0 sec consumed) - Normal Termination

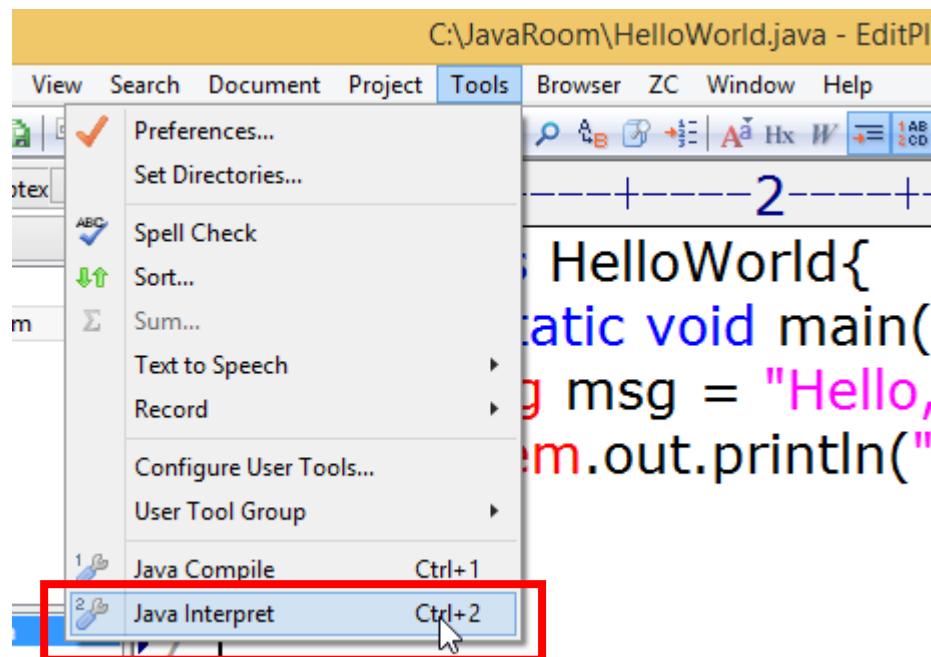
Register Interpreter Tool



Register Interpreter Tool (Cont.)



Register Interpreter Tool (Cont.)



Register Interpreter Tool (Cont.)

The screenshot shows the EditPlus text editor interface. The title bar reads "C:\JavaRoom\HelloWorld.java - EditPlus". The menu bar includes File, Edit, View, Search, Document, Project, Tools, Browser, ZC, Window, and Help. The toolbar contains various icons for file operations like Open, Save, Print, and Find. The left sidebar shows a directory tree with "C:\JavaRoom" selected. The main code editor window displays the following Java code:

```
1 public class HelloWorld{  
2     public static void main(String[] args) {  
3         String msg = "Hello, World";  
4         System.out.println("msg = " + msg);  
5     }  
6 }  
7
```

The status bar at the bottom shows "For Help, press F1", "In 7 col 1 7 00 PC ANSI", and a series of empty status fields.

In the bottom right corner of the code editor, there is a small terminal window titled "Java Interpret" which displays the output of the program execution:

```
----- Java Interpret -----  
msg = Hello, World  
Output completed (0 sec consumed) - Normal Termination
```

This output window is highlighted with a red border.

Eclipse Setting on Ubuntu Platform



Connect to <http://www.eclipse.org>

The screenshot shows a Mozilla Firefox browser window displaying the Eclipse Luna website. The title bar reads "Eclipse Luna - Mozilla Firefox". The address bar shows the URL "www.eclipse.org". The page content includes the Eclipse logo, navigation links for "GETTING STARTED", "MEMBERS", "PROJECTS", and "MORE". A prominent orange button labeled "DOWNLOAD" is highlighted with a red box. Below it, text promotes Java 8 support and various Eclipse tools. A "HIGHLIGHTS" section at the bottom lists Java 8 support features. The footer contains the URL "www.eclipse.org/downloads/".

Eclipse Luna - Mozilla Firefox

Eclipse Luna

www.eclipse.org

Google

Create account Sign in

eclipse

Search eclipse.org

GETTING STARTED MEMBERS PROJECTS MORE

DOWNLOAD

Are you ready for Java™ 8?

Eclipse Luna includes official support for Java 8 in the **Java development tools, Plug-in Development Tools, Object Teams, Eclipse Communication Framework, Maven integration, Xtext, Xtend, Web Tools Platform, and Memory Analyzer.**

★ Projects Downloads Demo Camps

Friends of Luna

HIGHLIGHTS

- Java 8 support including language enhancements, search and refactoring, Quick Assist and Clean Up to migrate anonymous classes to lambda expressions and back, and new formatter options for lambdas.

www.eclipse.org/downloads/

Eclipse Downloads from <http://www.eclipse.org/downloads/>

The screenshot shows a Mozilla Firefox window displaying the Eclipse Downloads page at www.eclipse.org/downloads/. The page is titled "HOME / DOWNLOADS" and "PACKAGES / JAVA™ 8 SUPPORT". A dropdown menu above the packages lists "Eclipse Luna (4.4) Release for Linux". Below this, the "Eclipse Standard 4.4" package is highlighted with a red box. It has a blue icon, a download count of 1,066,533 times, and a link to "Other Downloads". A description states it's a standard package for Java and plug-in development. It offers "Linux 32 Bit" and "Linux 64 Bit" download links, with the "Linux 64 Bit" link being orange and underlined, indicating it's the selected version. A "Download Eclipse Standard 4.4 Linux 64 Bit" button is also present. At the bottom of the page, there are links for "Package Solutions" and "Filter Packages". The Firefox status bar at the bottom shows the URL and a privacy notice about data collection.

Eclipse Downloads - Mozilla Firefox

Eclipse Downloads

www.eclipse.org/downloads/

HOME / DOWNLOADS

PACKAGES / JAVA™ 8 SUPPORT

Eclipse Luna (4.4) Release for Linux

Eclipse Standard 4.4, 204 MB
Downloaded 1,066,533 Times [Other Downloads](#)

Standard Eclipse package suited for Java and plug-in development plus adding new plugins; already includes Git, Marketplace Client, source code and...

[Linux 32 Bit](#)
[Linux 64 Bit](#)

[Download Eclipse Standard 4.4 Linux 64 Bit](#)

Package Solutions

Filter Packages ▾

Eclipse IDE for Java EE Developers, 257 MB
Downloaded 708,231 Times

Tools for Java developers creating Java EE and Web applications, including a Java IDE, tools for Java EE, JPA, JSF, Mylyn...

www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/luna/R/eclipse-standard-luna-R-linux-gtk-x86_64.tar.gz

Firefox automatically sends some data to Mozilla so that we can improve your experience. Choose What I Share

Eclipse Downloads from <http://www.eclipse.org/downloads/> (Cont.)

Screenshot of a Mozilla Firefox browser window showing the Eclipse downloads mirror selection page at www.eclipse.org/downloads/download.php?file=/technology/epp/do.../R/eclipse-standard-luna-R-linux-gtk-x86_64.tar.gz&mirror_id=466.

The page title is "Eclipse downloads - mirror selection - Mozilla Firefox". The URL in the address bar is "www.eclipse.org/downloads/download.php?file=/technology/epp/do.../R/eclipse-standard-luna-R-linux-gtk-x86_64.tar.gz&mirror_id=466".

Amounts shown are in US dollars.

Eclipse downloads - mirror selection

All downloads are provided under the terms and conditions of the [Eclipse Foundation Software User Agreement](#) unless otherwise specified.

Download eclipse-standard-luna-R-linux-gtk-x86_64.tar.gz from:

 [Korea, Republic Of] KAIST (http)

Checksums: [\[MD5\]](#) [\[SHA1\]](#) [\[SHA-512\]](#)

...or pick a mirror site below.

Get It Faster Here

EclipseSource
 Warp speed from the Amazon cloud plus a choice of hundreds of plug-ins with managed dependencies.

Genuitec
 Native installers for all OS platforms, lightning fast downloads. Manage plugins and dependencies. For free.

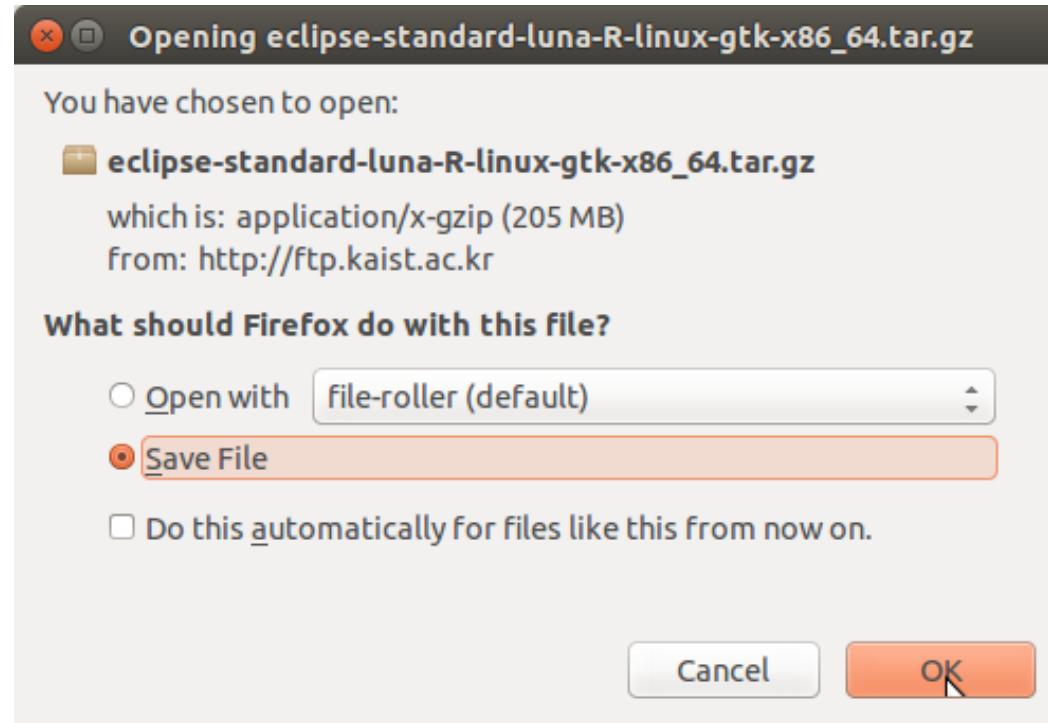
Spring by Pivotal
Rapid downloads of Eclipse packages. Free downloads of SpringSource Tool Suite for Spring, AspectJ, and Gant.

www.eclipse.org/downloads/download.php?file=/technology/epp/do.../R/eclipse-standard-luna-R-linux-gtk-x86_64.tar.gz&mirror_id=466

Firefox automatically sends some data to Mozilla so that we can improve your experience.

Choose What I Share

Eclipse Downloads from <http://www.eclipse.org/downloads/> (Cont.)



```
instructor@Ubuntu64-00:~/Downloads$ ls
eclipse-standard-luna-R-linux-gtk-x86_64.tar.gz
instructor@Ubuntu64-00:~/Downloads$
```

Unzip Files

```
instructor@Ubuntu64-00:~/Downloads$  
instructor@Ubuntu64-00:~/Downloads$ tar xvfz eclipse*.tar.gz
```

```
instructor@Ubuntu64-00:~/Downloads$ ls  
eclipse eclipse-standard-luna-R-linux-gtk-x86_64.tar.gz  
instructor@Ubuntu64-00:~/Downloads$
```

Move Files

- **\$ sudo mv eclipse /usr/local/Eclipse**
- pse**

```
instructor@Ubuntu64-00:~/Downloads$ sudo mv eclipse /usr/local/Eclipse  
[sudo] password for instructor: █
```

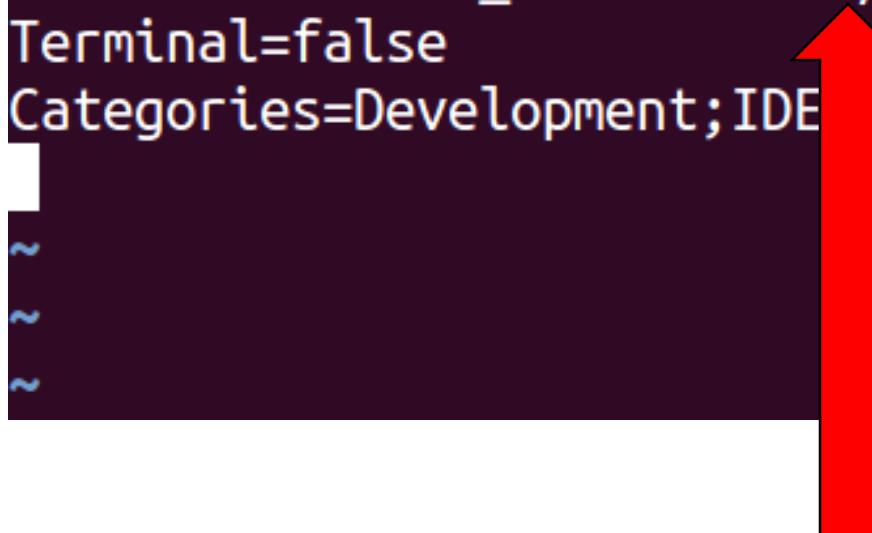
Creates desktop shortcut file

- \$ sudo vi /usr/share/applications/eclipse.desktop

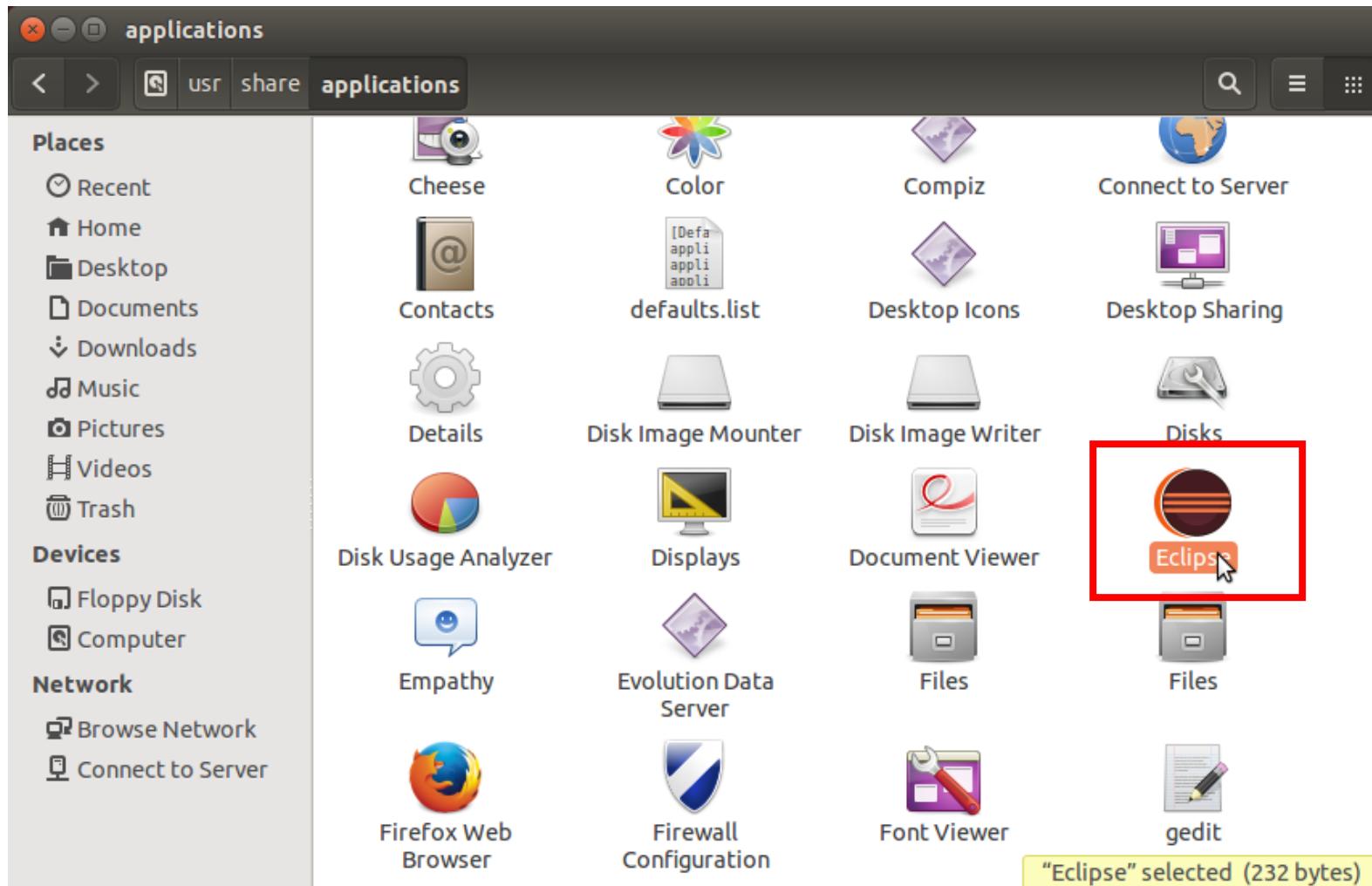
```
instructor@Ubuntu64-00:~/Downloads$ sudo vi /usr/share/applications/eclipse.desktop
```

Creates desktop shortcut file (Cont.)

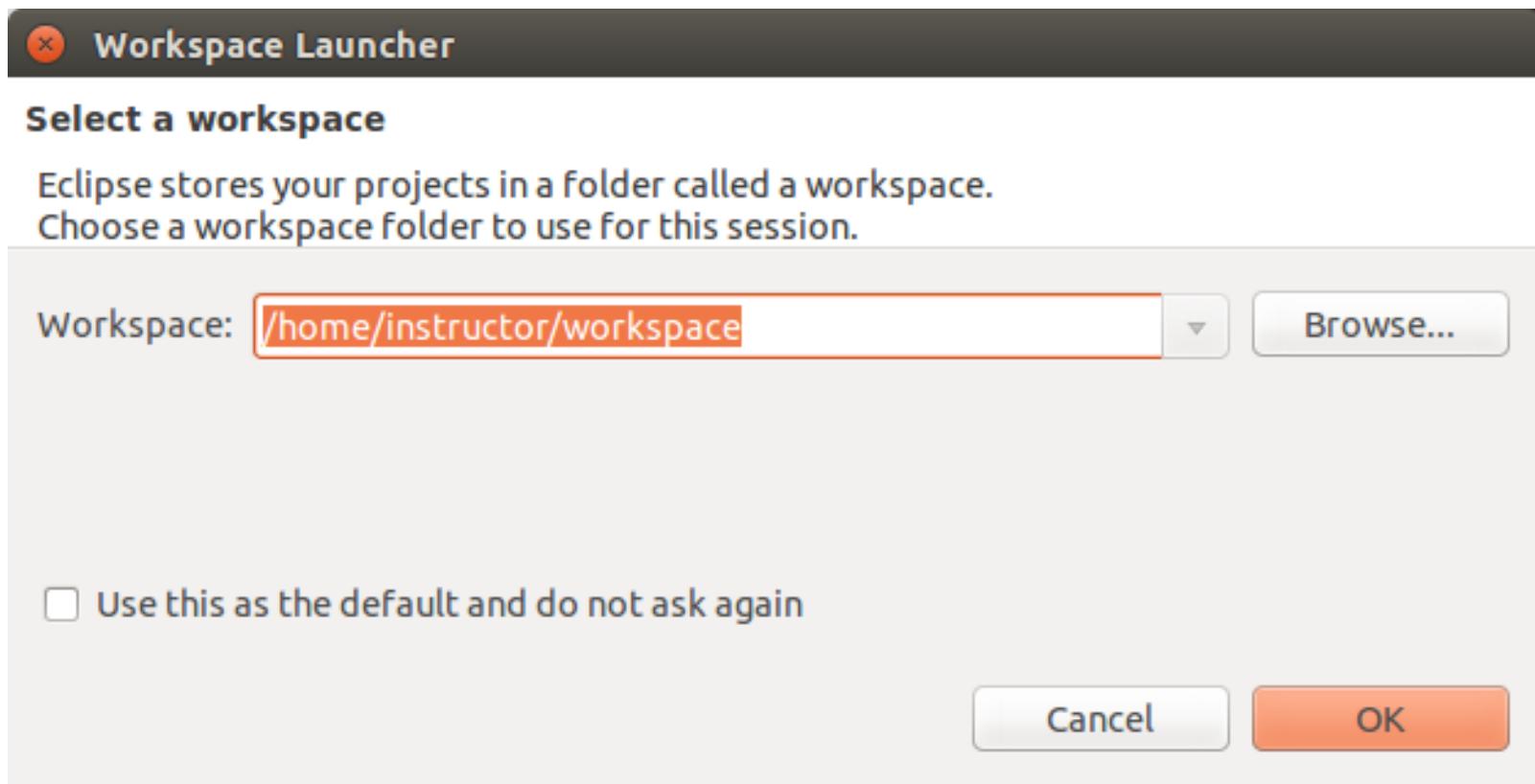
```
instructor@Ubuntu64-00: /usr/share/applications
[Desktop Entry]
Type=Application
Name=Eclipse
Comment=Eclipse Integrated Development Environment
Icon=/usr/local/Eclipse/icon.xpm
Exec=env UBUNTU_MENUPROXY= /usr/local/Eclipse/eclipse
Terminal=false
Categories=Development;IDE;Java;
```



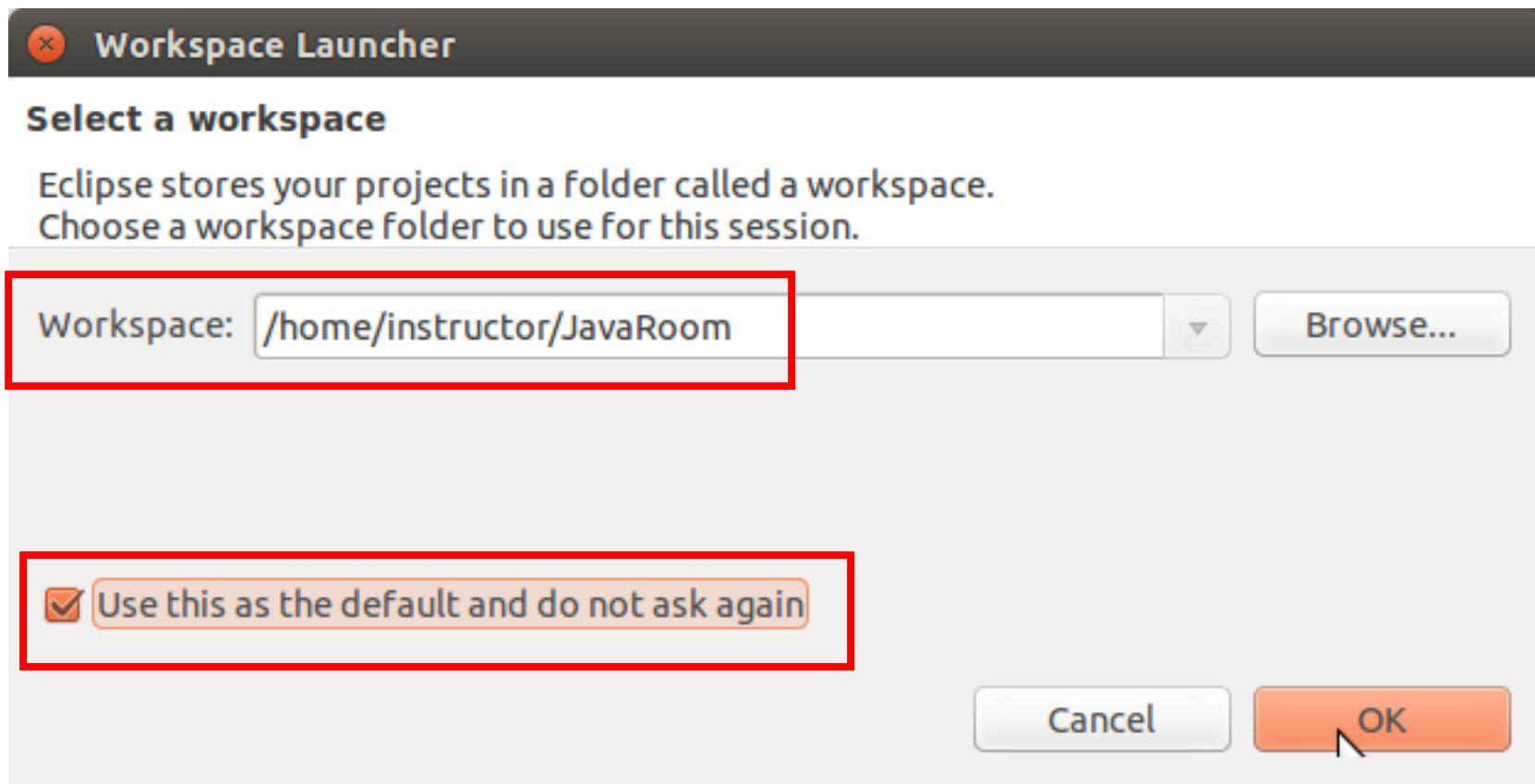
Running Eclipse



Running Eclipse (Cont.)



Setting Workspace



Java - Test/src/HelloWorld.java - Eclipse

File Edit Source Refactor Navigate Search Project Run Window Help

Quick Access Java

Package Explorer

Test

src

(default package)

HelloWorld.java

JRE System Library [JavaSE-1.8]

HelloWorld.java

```
1 public class HelloWorld {  
2     public static void main(String[] args) {  
3         String msg = "Hello, World";  
4         System.out.println("msg = " + msg);  
5     }  
6 }  
7  
8
```

Problems @ Javadoc Declaration Console

<terminated> HelloWorld [Java Application] /usr/lib/jvm/jdk1.8.0_11/bin/java (Jul 30, 2014)
msg = Hello, World

Writable Smart Insert 8 : 1

