



COMP 248 – Winter 2016

Tutorial 1

Getting started in the lab

- Get your computer account from ENCS help desk (H-960)
 - Note that computer science students will keep their account throughout their studies; but non-computer science students will have their account closed at the end of the semester.
- Login using your user account and password, and change your password from the ENCS helpdesk website:
<https://fis.encs.concordia.ca/helpdesk-cgi/change-pwd.cgi>

Java Installation

- **Download Java (Java SE 8u25)**
 - For Windows and Linux, visit the website: <http://www.oracle.com/technetwork/java/javase/downloads/index.html> (This is not needed for Mac OS X, since it is already built in).
 - Select **Download JDK and JRE for windows platform**. (On Windows, you will need admin privileges.). Once the download is complete, install java by clicking on the file you downloaded. This will lead you through the installation process.
 - Check the following website if you do not know whether the OS of your machine is 64 or 32 bits <http://www.stata.com/support/faqs/windows/64-bit-compliance/>

Download and install Java

The screenshot shows the Oracle Java SE Downloads page. At the top, there is the Oracle logo and navigation links for Sign In/Register, Help, Country, Communities, I am a..., and I want to..., along with a search bar. Below this is a main navigation menu with links for Products, Solutions, Downloads, Store, Support, Training, Partners, About, and OTN. The breadcrumb trail indicates the current location: Oracle Technology Network > Java > Java SE > Downloads.

The page content is organized into several sections:












- Left Sidebar:** A list of navigation links including Java SE, Java EE, Java ME, Java SE Support, Java SE Advanced & Suite, Java Embedded, Java DB, Web Tier, Java Card, Java TV, New to Java, Community, and Java Magazine.
- Top Navigation:** Tabs for Overview, Downloads (selected), Documentation, Community, Technologies, and Training.
- Java SE Downloads:** Two main download options are highlighted: Java Platform (JDK) 8u25 and NetBeans with JDK 8, each with a 'DOWNLOAD' button.
- Java Platform, Standard Edition:** A section for Java SE 8u25, noting that this release includes important security fixes and recommending an upgrade for all Java SE 8 users. It provides links to Installation Instructions, Release Notes, Oracle License, Java SE Products, Third Party Licenses, Certified System Configurations, and Readme Files (including JDK and JRE ReadMe). Download buttons for JDK, Server JRE, and JRE are also present.
- Which Java package do I need?:** A section providing guidance on package selection, specifically mentioning the Software Developers: JDK package.
- Right Sidebar:** A list of links for Java SDKs and Tools (Java SE, Java EE and Glassfish, Java ME, Java Card, NetBeans IDE, Java Mission Control) and Java Resources (Java APIs, Technical Articles, Demos and Videos, Forums, Java Magazine, Java.net, Developer Training, Tutorials, Java.com).
- Bottom Right:** A promotional banner for the Virtual Technology Summit, featuring a 'Watch Now!' button and an image of people at a computer.

Download and install Java

Java SE Development Kit 8u25

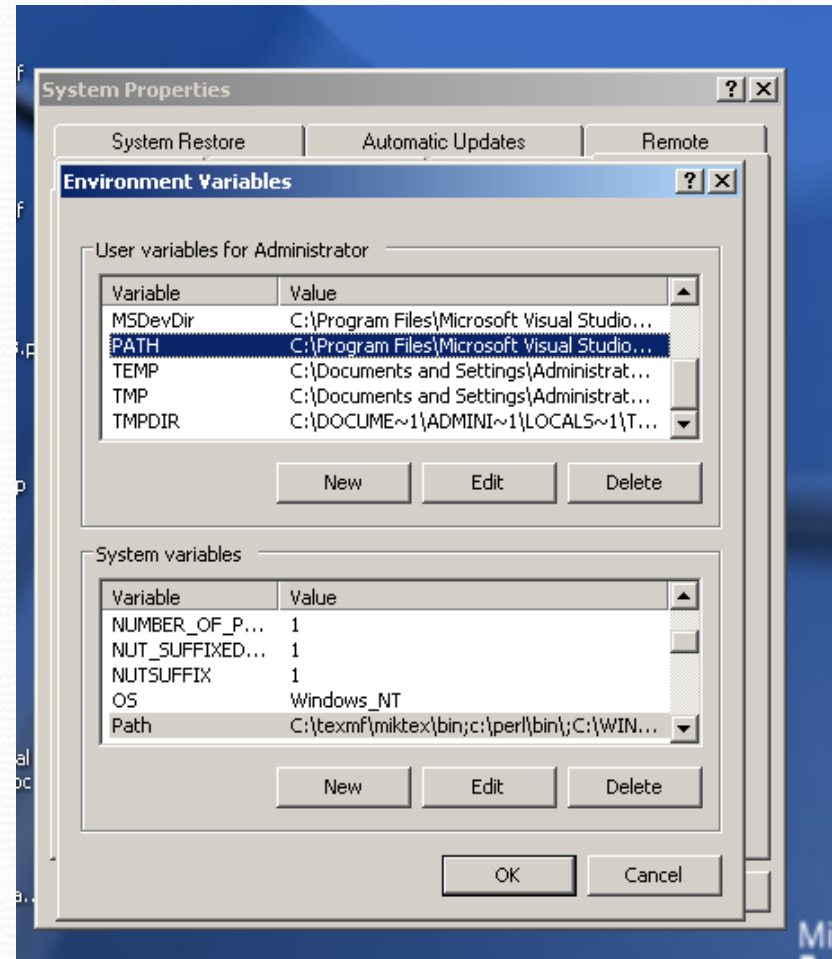
You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

Accept License Agreement Decline License Agreement

Product / File Description	File Size	Download
Linux x86	135.24 MB	 jdk-8u25-linux-i586.rpm
Linux x86	154.88 MB	 jdk-8u25-linux-i586.tar.gz
Linux x64	135.6 MB	 jdk-8u25-linux-x64.rpm
Linux x64	153.42 MB	 jdk-8u25-linux-x64.tar.gz
Mac OS X x64	209.13 MB	 jdk-8u25-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	137.01 MB	 jdk-8u25-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	97.14 MB	 jdk-8u25-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	137.11 MB	 jdk-8u25-solaris-x64.tar.Z
Solaris x64	94.24 MB	 jdk-8u25-solaris-x64.tar.gz
Windows x86	157.26 MB	 jdk-8u25-windows-i586.exe
Windows x64	169.62 MB	 jdk-8u25-windows-x64.exe

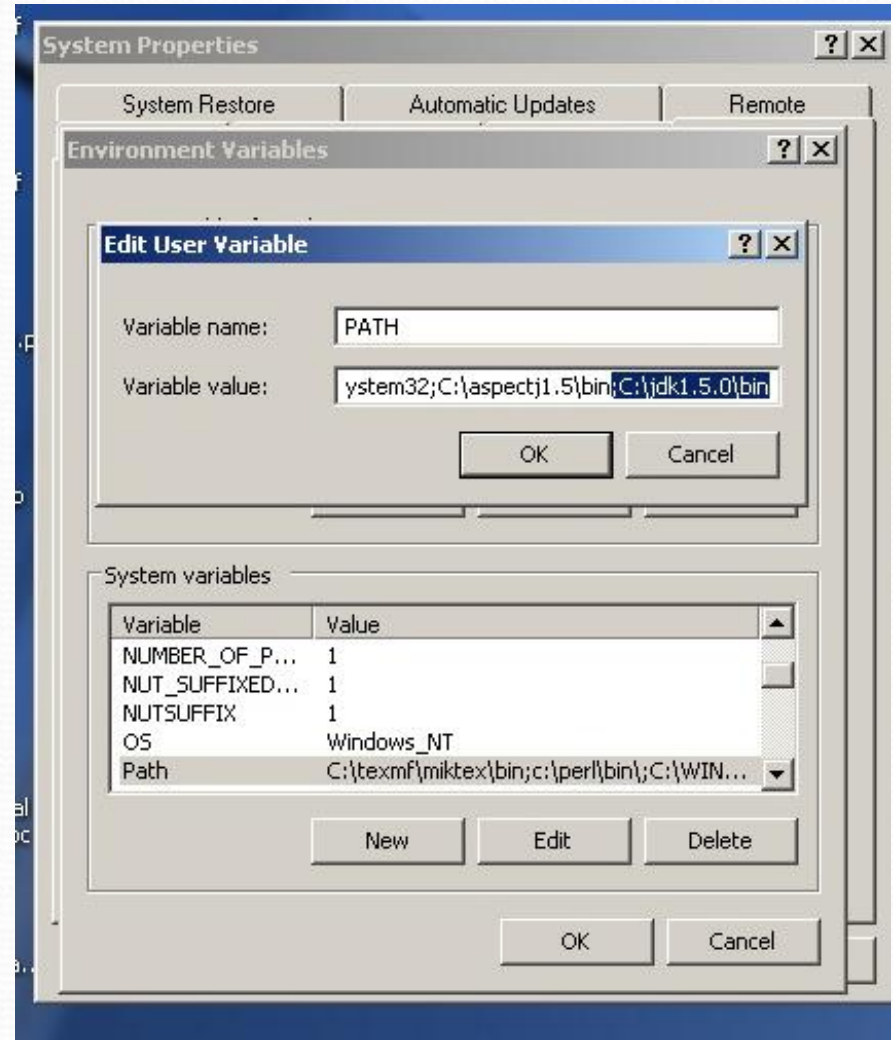
Path Configuration

- Right click on MyComputer
 - Properties
 - Advanced
 - Environment Variables
 - Select PATH
 - Edit



Path Configuration

- Add the path “;C:\Program Files\Java\jdk1.7.0\bin” at the place of highlighted line
- Press Ok
- Redo the same for Path in System variables



Check if JDK is Installed Properly!

```
C:\WINDOWS\system32\cmd.exe

C:\>javac
Usage: javac <options> <source files>
where possible options include:
-g Generate all debugging info
-g:none Generate no debugging info
-g:<lines,vars,source> Generate only some debugging info
-nowarn Generate no warnings
-verbose Output messages about what the compiler is doing
-deprecation Output source locations where deprecated APIs are used
-classpath <path> Specify where to find user class files and annotations
processorpath <path> Specify where to find user class files and annotations
-sourcepath <path> Specify where to find input source files
-bootclasspath <path> Override location of bootstrap class files
-extdirs <dirs> Override location of installed extensions
-endorseddirs <dirs> Override location of endorsed standards path
-processor:<none,only> Control whether annotation processing and/or compilation is done.
-processor <class1>[,<class2>,<class3>... ] Names of the annotation processors to run; bypasses default discovery process
-processorpath <path> Specify where to find annotation processors
-d <directory> Specify where to place generated class files
-s <directory> Specify where to place generated source files
-implicit:<none,class> Specify whether or not to generate class files for implicitly referenced files
-encoding <encoding> Specify character encoding used by source files
-source <release> Provide source compatibility with specified release

-target <release> Generate class files for specific VM version
-version Version information
-help Print a synopsis of standard options
-Akey[=value] Options to pass to annotation processors
-X Print a synopsis of nonstandard options
-J<flag> Pass <flag> directly to the runtime system
-Werror Terminate compilation if warnings occur
@<filename> Read options and filenames from file

C:\>_
```


Compile and Run a Java Program

- There are two ways to compile and run a Java program:
 - Using command line
 - Through a Development Editor like Eclipse

Example of Java program

- Hello World Application

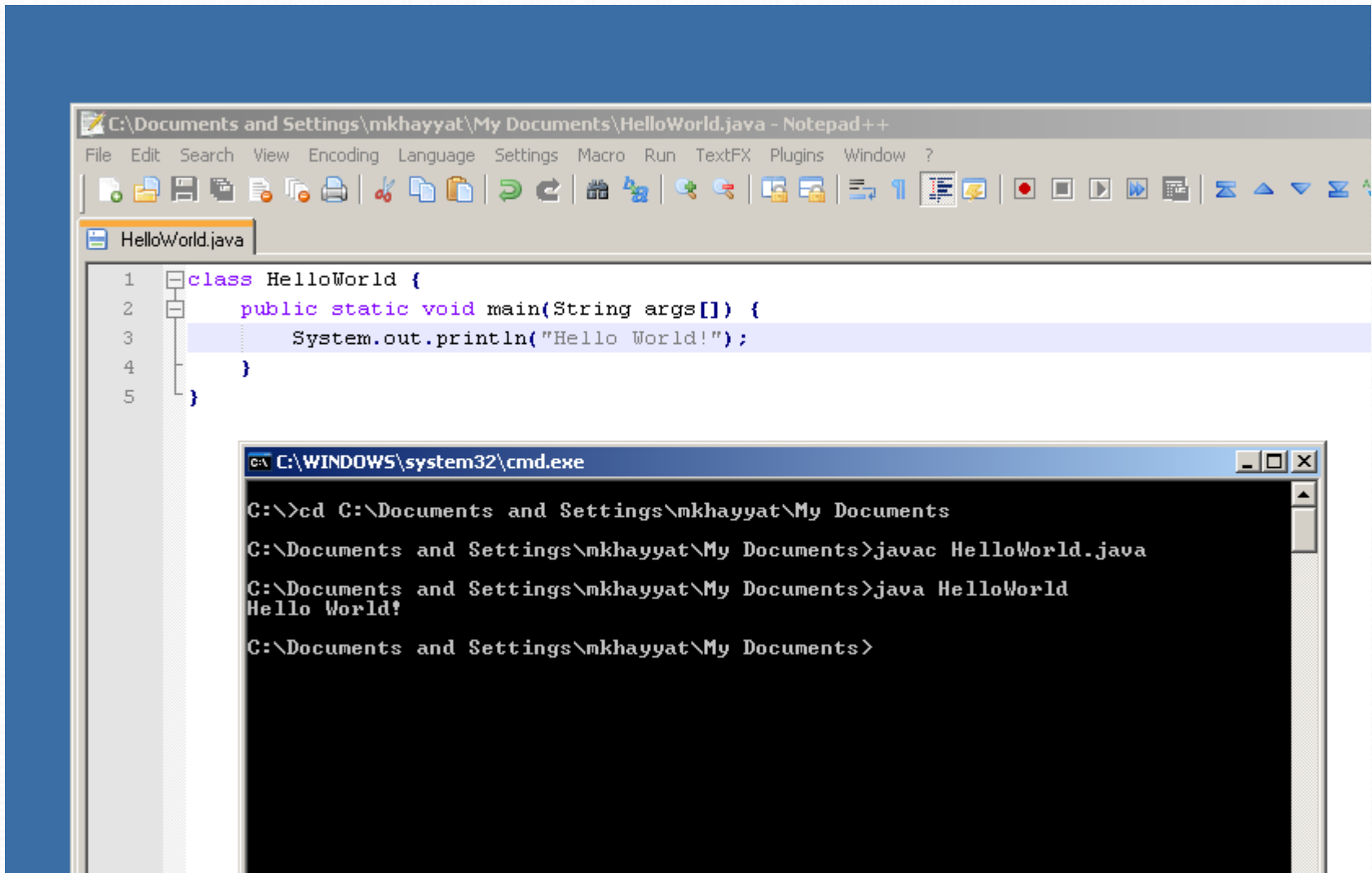
Note, the java file must be named as `HelloWorld.java`

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

Running Java Program Using Command Line

- Write a Java program using any editor (i.e. expL, Notepad) and save it as (FileName.java) file with the same name as the class.
- Go to the directory where you created your program using the command line
- Compile the java file using the following command line:
 - > javac FileName.java
- The above command line will compile the program and create *FileName.class* file, if there are no errors in the program
- Run the file using the following command line:
 - > java filename

Running Java Program Using Command Line



The image shows a Notepad++ window with a Java program named `HelloWorld.java` and a Command Prompt window showing the execution steps.

```
C:\Documents and Settings\mkhayyat\My Documents\HelloWorld.java - Notepad++
File Edit Search View Encoding Language Settings Macro Run TextFX Plugins Window ?
HelloWorld.java
1 class HelloWorld {
2     public static void main(String args[]) {
3         System.out.println("Hello World!");
4     }
5 }
```

```
C:\WINDOWS\system32\cmd.exe
C:\>cd C:\Documents and Settings\mkhayyat\My Documents
C:\Documents and Settings\mkhayyat\My Documents>javac HelloWorld.java
C:\Documents and Settings\mkhayyat\My Documents>java HelloWorld
Hello World!
C:\Documents and Settings\mkhayyat\My Documents>
```

Download Eclipse

- To download Eclipse visit the web page <http://www.eclipse.org/downloads/index.php>
- You may select any mirror site, e.g. "Main Eclipse Download Site". There are several versions of Eclipse, and it is important you install the correct one. Check that the site has the latest

Download Eclipse

The screenshot shows the Eclipse Downloads page. At the top, there is a navigation menu with links for Home, Downloads, Users, Members, Committers, Resources, Projects, and About Us. A search bar is also present. The main heading is 'Eclipse Downloads'. Below this, there is a section for 'Eclipse Helios (3.6.1) Packages for Windows'. A red callout box with the text 'Click on the Link' points to the 'Eclipse IDE for Java Developers' link, which is highlighted with a red border. The page lists various Eclipse IDEs and their download statistics. On the right side, there is a 'Hint' section, a 'Squish' advertisement, an 'Installing Eclipse' section with links to 'Install Guide', 'Known Issues', and 'Updating Eclipse', and a 'Related Links' section with links to 'Source Code', 'Documentation', 'Make a Donation', 'Forums', and several Eclipse versions. At the bottom, there is a footer with links for Home, Privacy Policy, Terms of Use, Copyright Agent, Legal, and Contact Us, along with the copyright notice 'Copyright © 2011 The Eclipse Foundation. All Rights Reserved.'.

Click on the Link

Eclipse IDE for Java Developers 99 MB
Downloaded 1,590,991 Times [Details](#)

Hint:
You will need a [Java runtime environment \(JRE\)](#) to use Eclipse (Java 5 JRE recommended). All downloads are provided under the terms and conditions of the [Eclipse Foundation Software User Agreement](#) unless otherwise specified.

Squish
For Java, Web, Windows, Mac and more

Installing Eclipse

- [Install Guide](#)
- [Known Issues](#)
- [Updating Eclipse](#)

Related Links

- [Source Code](#)
- [Documentation](#)
- [Make a Donation](#)
- [Forums](#)
- [Eclipse Helios \(3.6\)](#)
- [Eclipse Galileo \(3.5\)](#)
- [Eclipse Ganymede \(3.4\)](#)

J2EE - Java Browser SDK
Web content to thumbnail images Print web pages, HTML to PDF
www.webtender.com
[Ads by Google](#)

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Download Eclipse

The screenshot shows the Eclipse IDE for Java Developers download page. The page is titled "Eclipse IDE for Java Developers" and includes a navigation menu with links to Home, Downloads, Users, Members, Committers, Resources, Projects, and About Us. A search bar is also present.

The main content area is divided into several sections:



- Downloads Home**: A sidebar menu with links to Indigo M4 Packages, Helios SR1 Packages, Helios Packages, Galileo Packages, Ganymede Packages, and Europa Packages.
- Package Details**: A section describing the package as "The essential tools for any Java developer, including a Java IDE, a CVS client, XML Editor and Mylyn."
- Feature List**: A table listing various features and their versions.
- Testing Details**: A section listing package testers (Mik Kersten, Steffen Pingel) and the maintainer (Eclipse Mylyn Project).
- Download Links**: A section with links to download the package for different operating systems: Windows 32-bit, Windows 64-bit, Mac OS X (Cocoa 32), Mac OS X (Cocoa 64), Linux 32-bit, and Linux 64-bit. A red box highlights these links, and a red arrow points to them with the text "Select your platform".

The footer of the page includes links to Home, Privacy Policy, Terms of Use, Copyright Agent, Legal, Contact Us, and Login, along with the copyright notice: "Copyright © 2010 The Eclipse Foundation. All Rights Reserved."







Download Eclipse

The screenshot shows the Eclipse website's download page. The browser address bar displays the URL: http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/helios/SR1/eclipse-java-helios-SR1-win32-x86_64.zip. The page title is "Eclipse downloads - mirror selection".

The main content area is titled "Eclipse downloads - mirror selection" and includes the following sections:


- All downloads are provided under the terms and conditions of the Eclipse Foundation Software User Agreement unless otherwise specified.**
- Download eclipse-java-helios-SR1-win32-x86_64.zip from:**
 -  [\[Canada\] University of Waterloo Computer Science Club \(http\)](#)
 - Checksums: [MD5] [SHA1] 
- ...or pick a mirror site below.

Get It Faster Here

-  **SpringSource**
Rapid downloads of Eclipse packages. Free downloads of SpringSource Tool Suite for Spring, AspectJ, Groovy and Grails.
-  **BLU AGE**
Download Eclipse Helios and Modeling Tools. Try agile model transformation and 100% source code generation.
-  **nWire Software**
Blazing fast Eclipse downloads over Limelight CDN. No reg required. Optional code exploration tools.
-  **Genuitec**
Get Eclipse Helios fast with supported mirrors. Free downloads of enterprise Java and iPhone development tools
-  **EclipseSource**
Warp speed from the Amazon cloud plus a choice of hundreds of plug-ins with managed dependencies.
-  **XpoLog**
Accelerated downloads of Eclipse packages. Free trial of XpoLog Log Analysis Platform with Automatic application problem monitoring.


Please choose a mirror close to you

North America

-  [\[Canada\] University of Waterloo Computer Science Club \(ftp\)](#)


Give Back to Eclipse

Donate \$5 or more and Become a Friend of Eclipse!



The Eclipse Foundation is a not-for-profit organization, not a charitable organization, so we are unable to provide charitable tax receipts. Amounts shown are in US dollars.

Featured Member

 **NOKIA**
CONNECTING PEOPLE

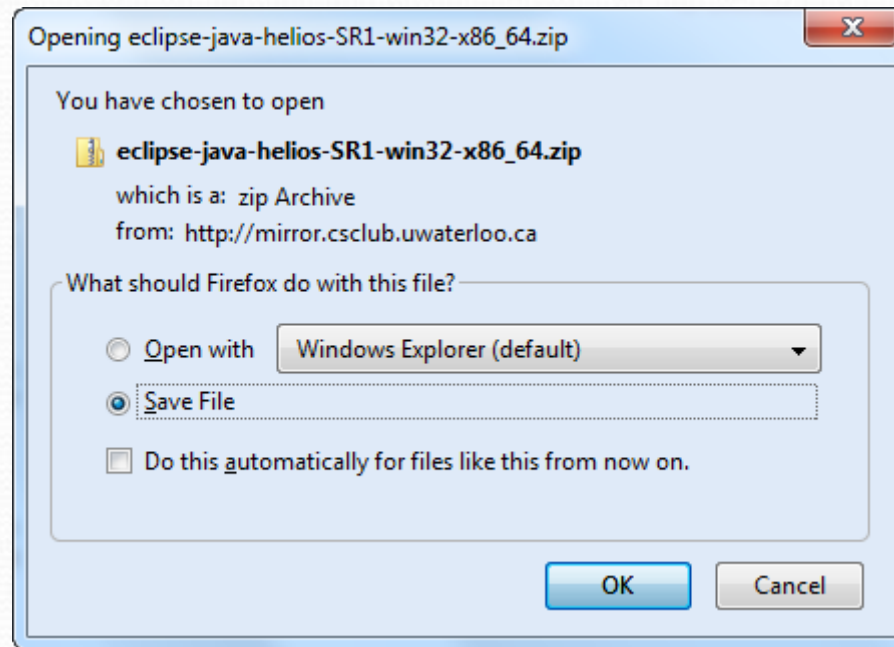
Filter

- HTTP mirrors only (xml)
- FTP mirrors only (xml)
- All mirrors (xml)

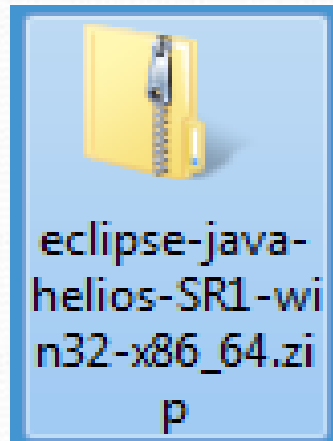
Related Links

- [Friends of Eclipse](#)
- [Becoming a mirror site](#)
- [Updating and installing Eclipse components](#)
- [Eclipse newsgroups](#)

Download Eclipse



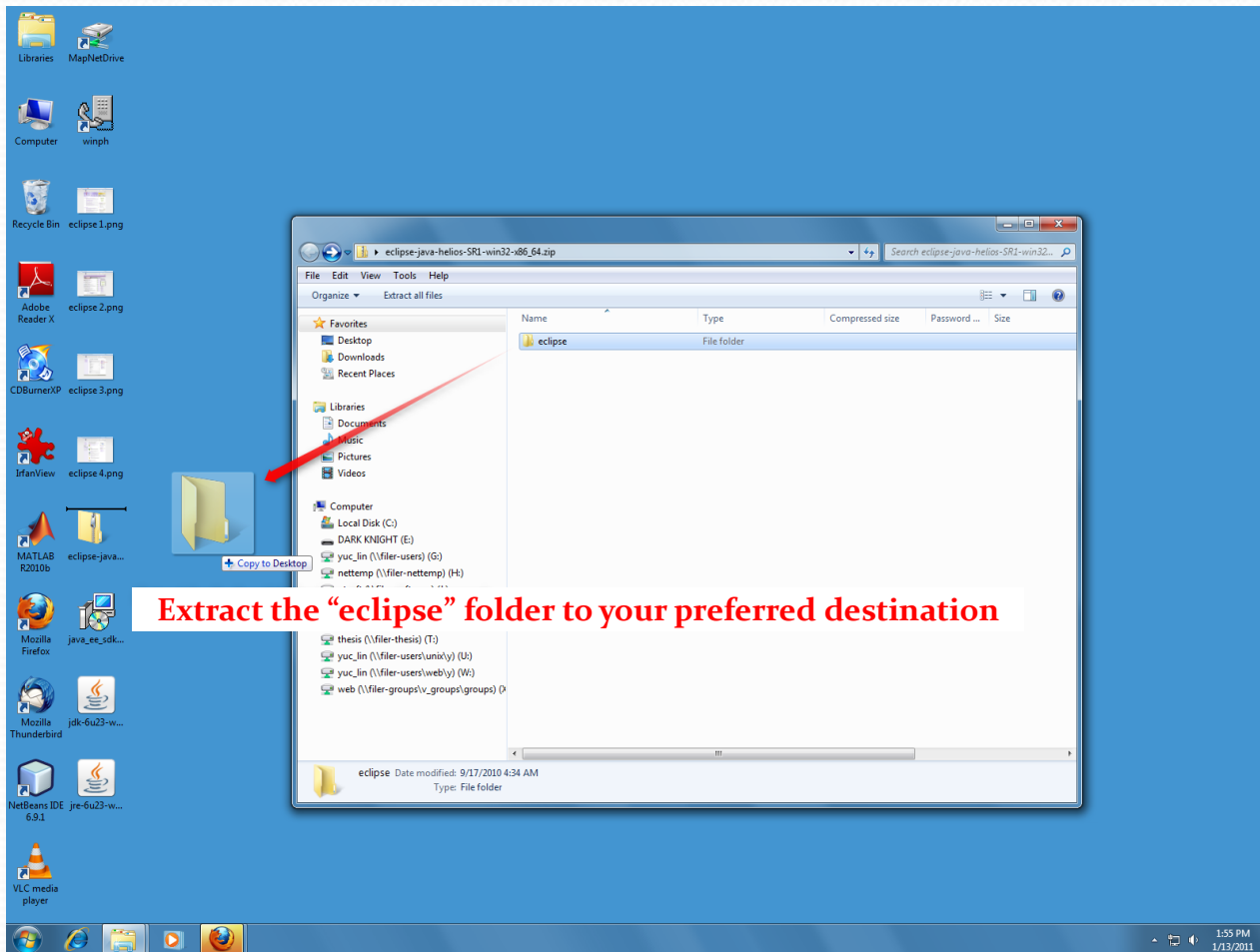
Download Eclipse



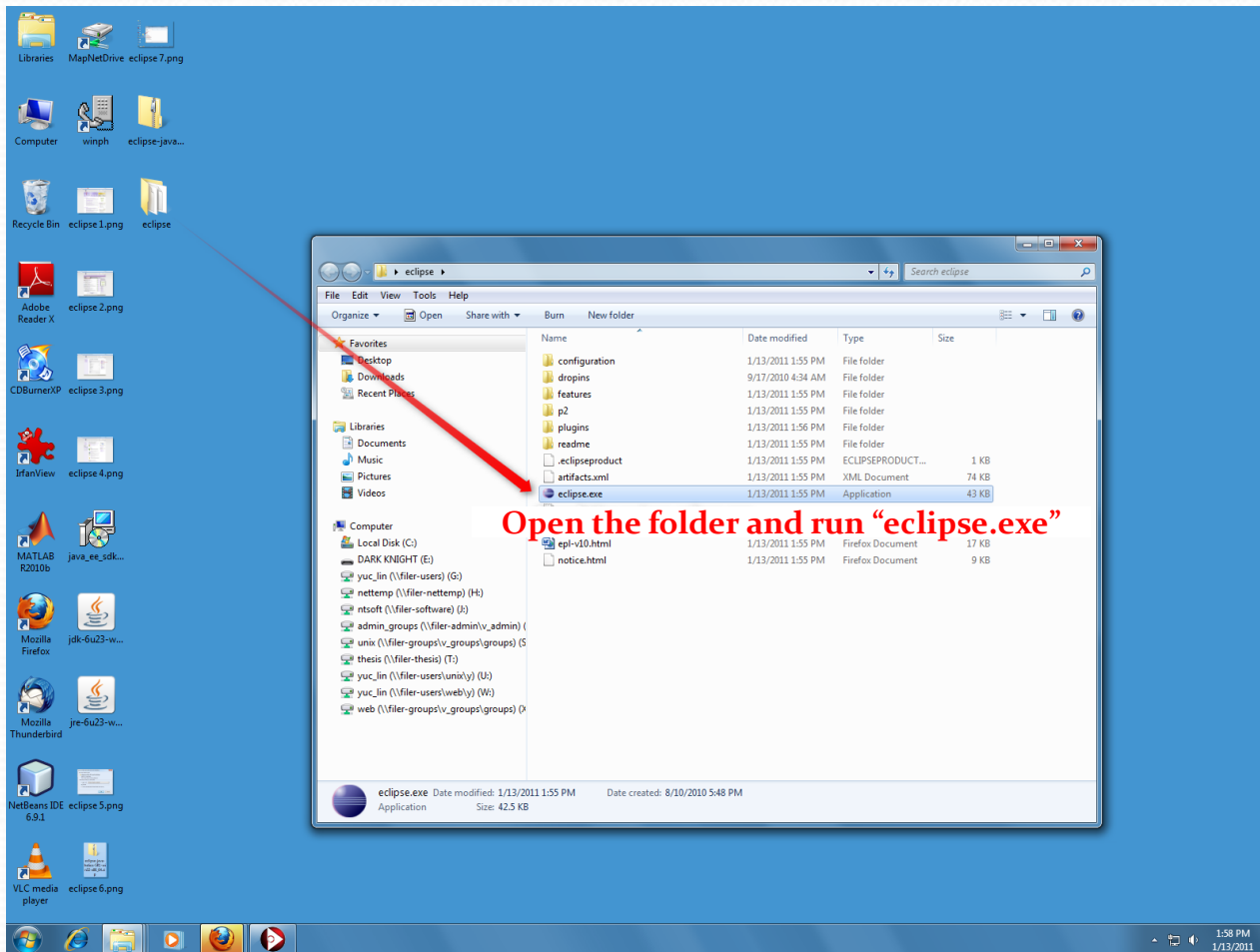
Eclipse Installation

- Unlike most modern software products, Eclipse has not have a fancy installation procedure.
- To install it, simply extract the zip file in the directory where your programs are stored, e.g. **C:\Program Files**. This will create a directory named **eclipse**.
- The executable program file is located in this directory and is called "eclipse.exe".
- On Windows systems, it is a good idea to create a shortcut to this executable on your desktop. To do this, right-click on the "eclipse.exe" file and select "Send To → Desktop".

Eclipse Installation



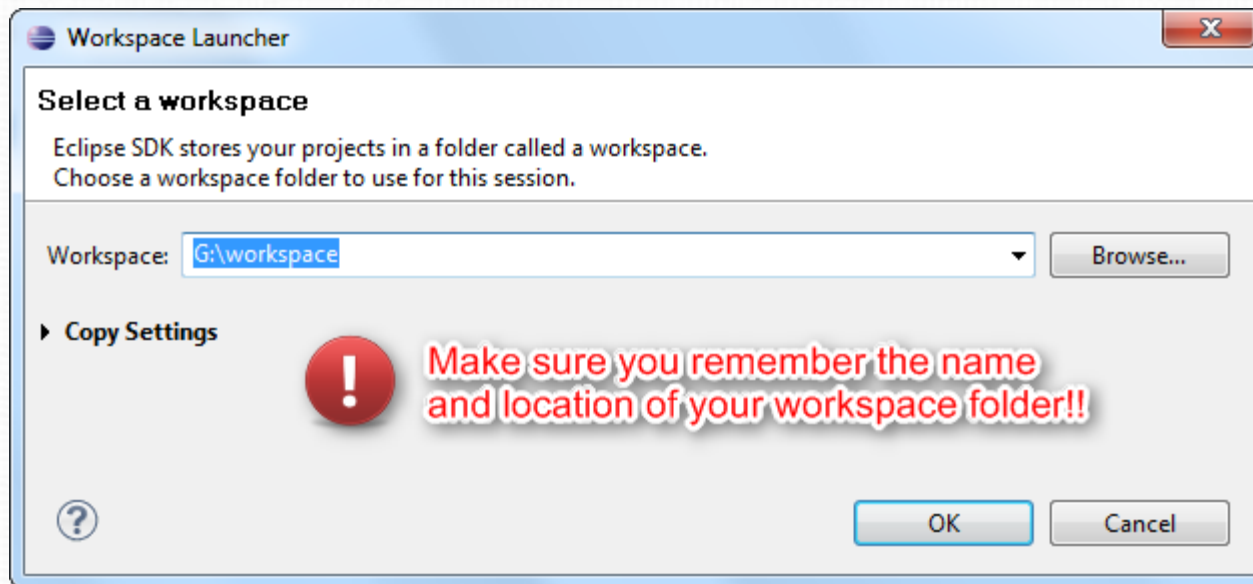
Eclipse Installation



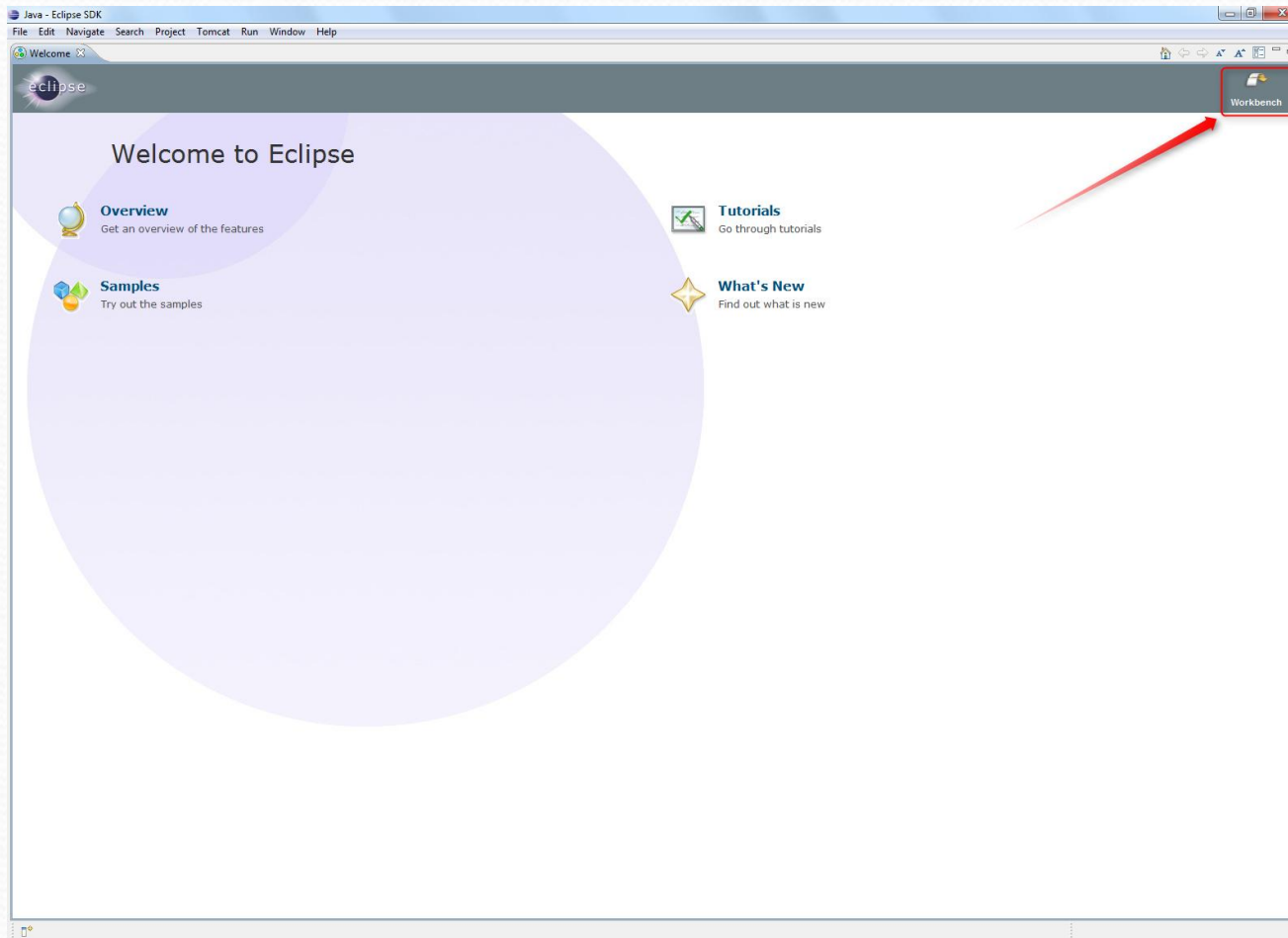
Eclipse Initialization

- Eclipse stores all its files in a directory called it "workspace".
- When Eclipse is running for the first time, it will ask you where you want the workspace to be placed. You can just use the default location (which will be in the directory where eclipse was installed).
- Some people find it more convenient to place the workspace somewhere in their "My Documents" directory, e.g. "My Documents\Eclipse".
- After this, you should see the "Welcome to Eclipse" page. When you see this, you are ready to proceed to the next step.

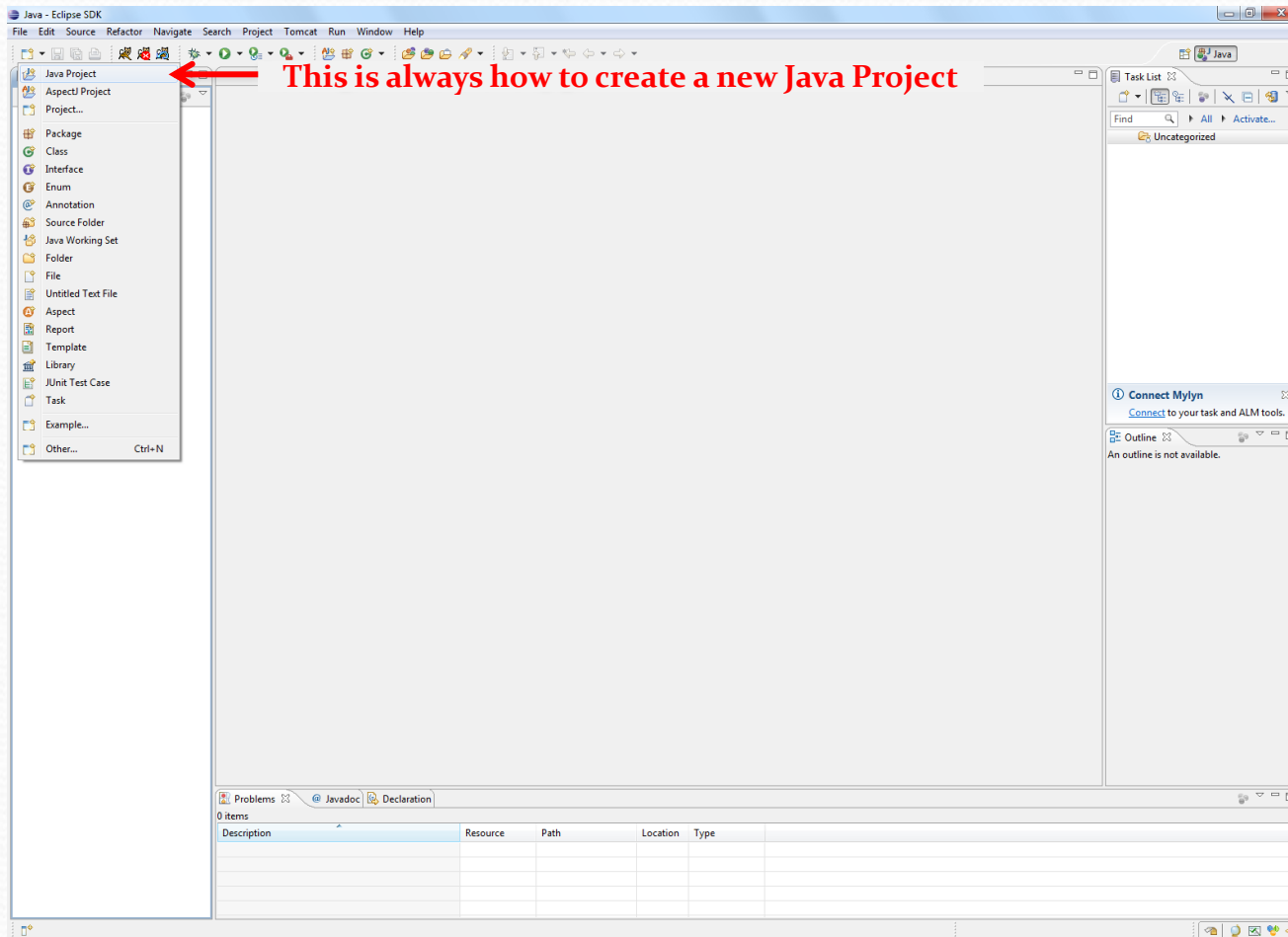
Eclipse Initialization



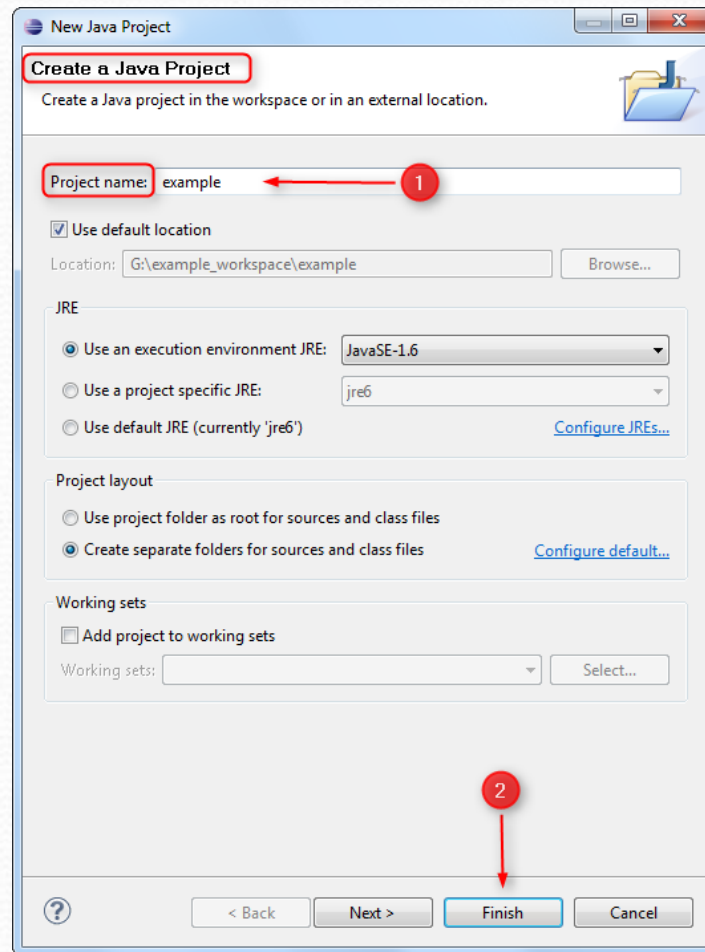
Using Eclipse the first time



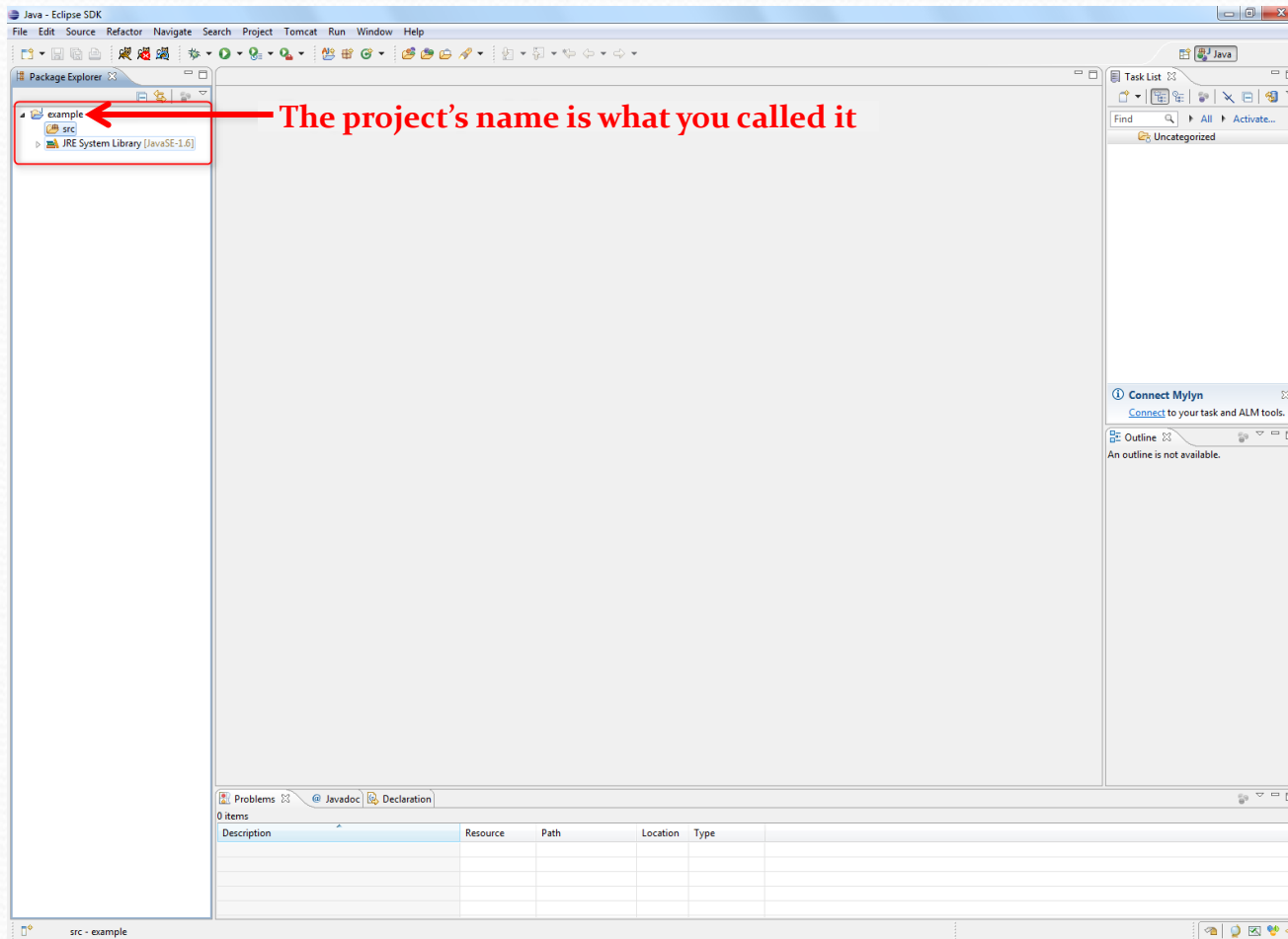
Create a Java Project



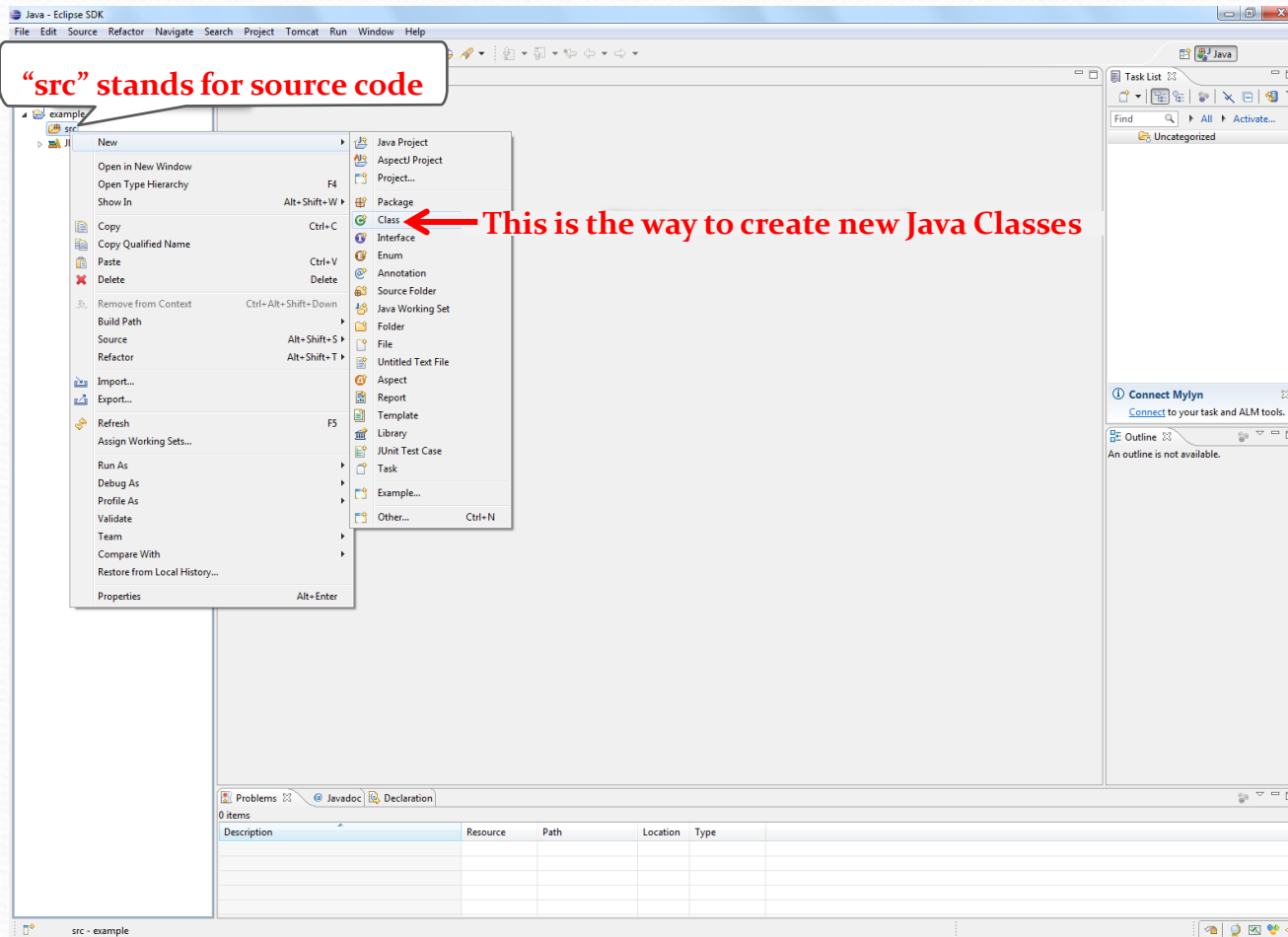
Create a Java Project



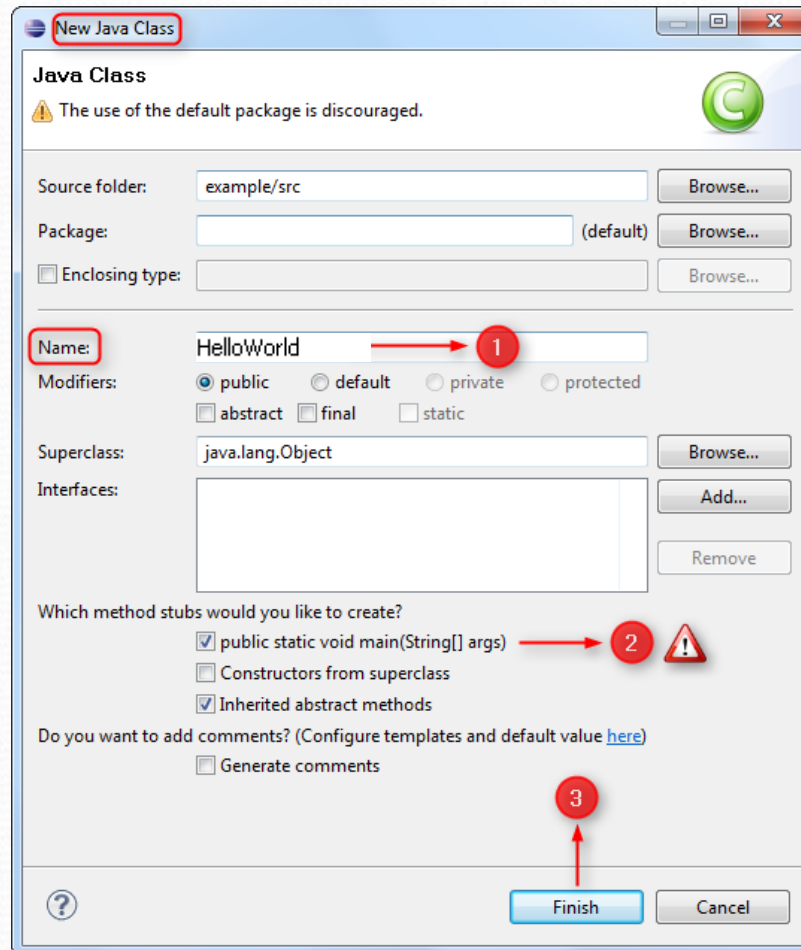
Create a Java Project



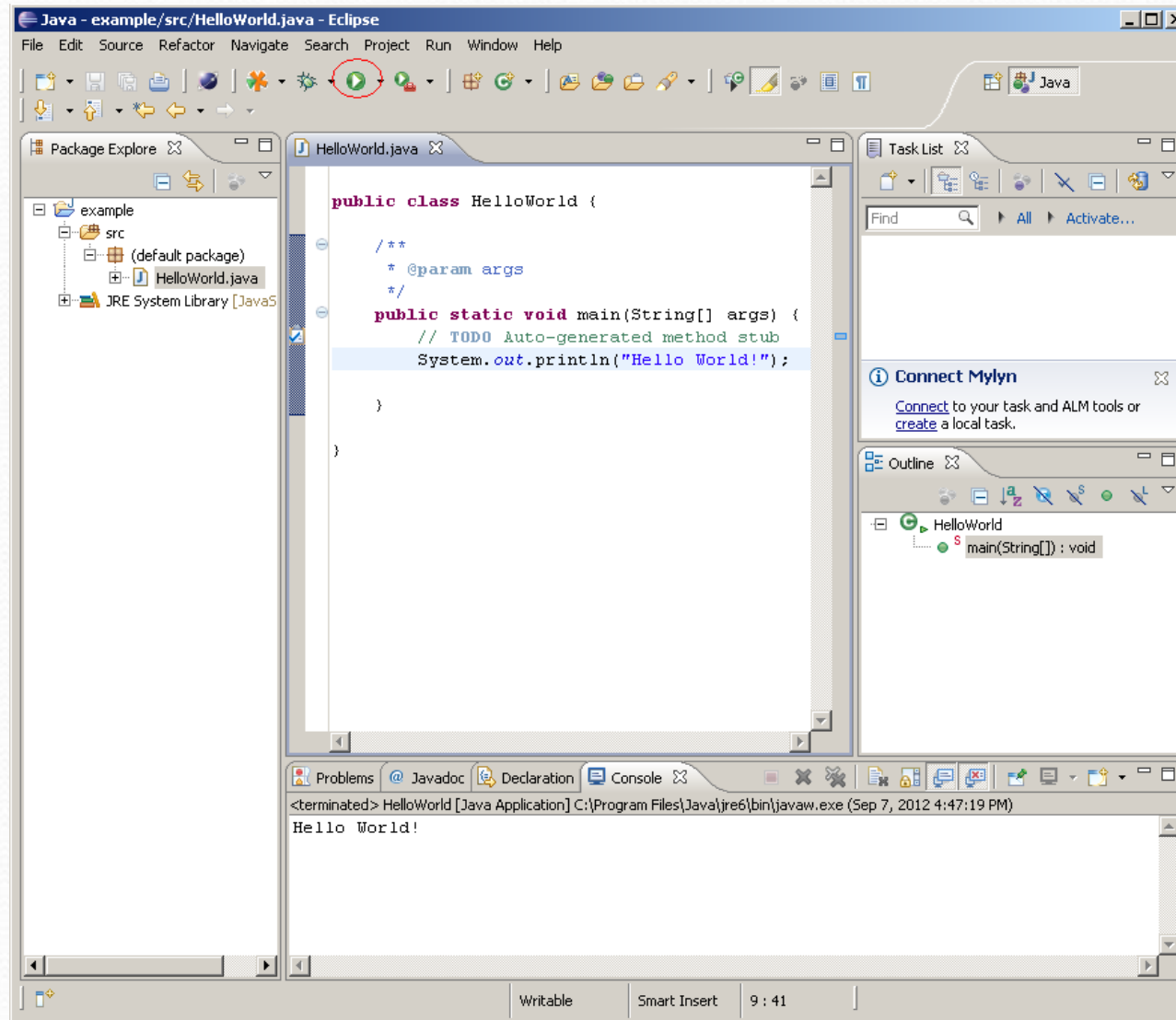
Create a new Java class



Create a new Java class



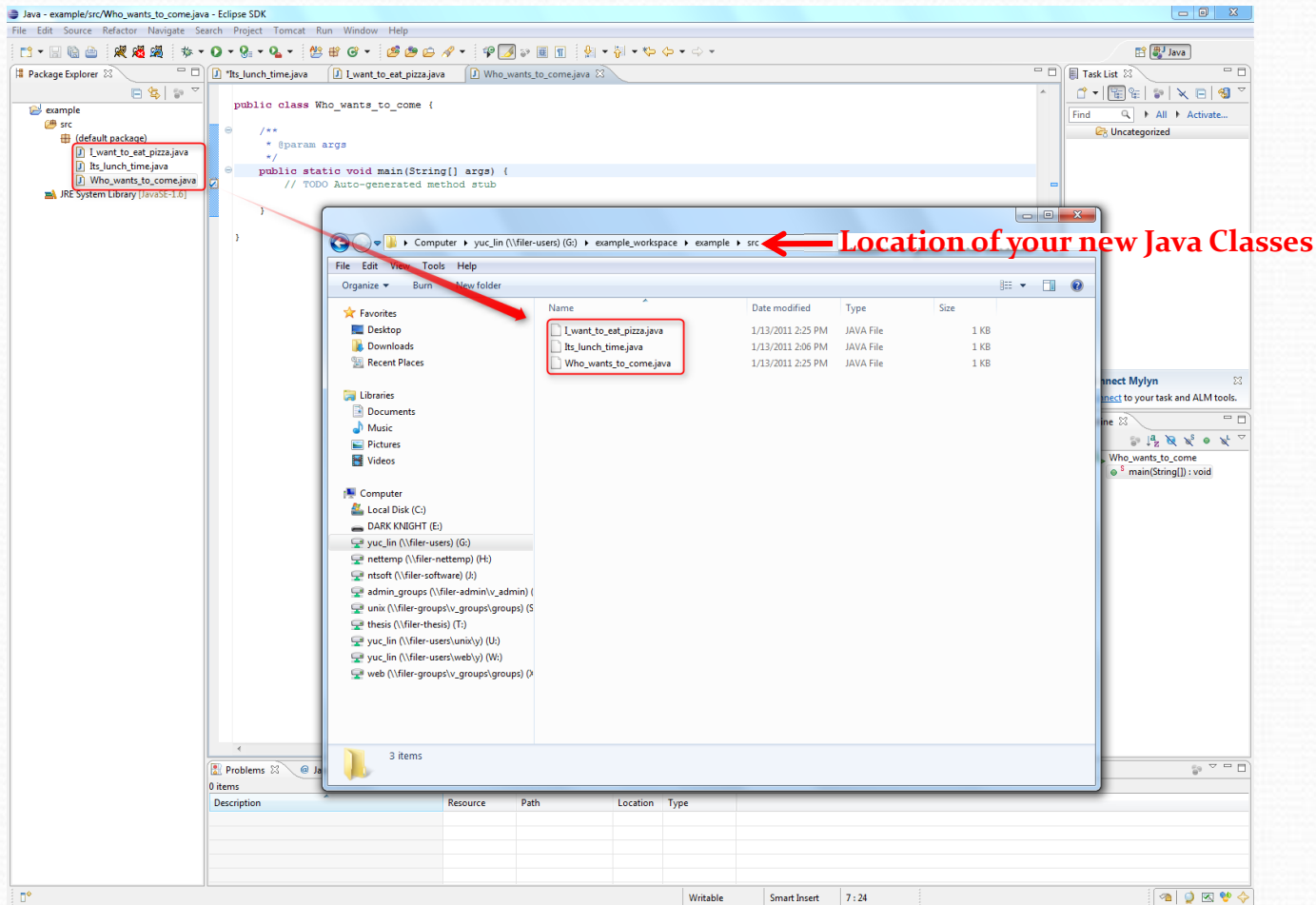
Run a Java program



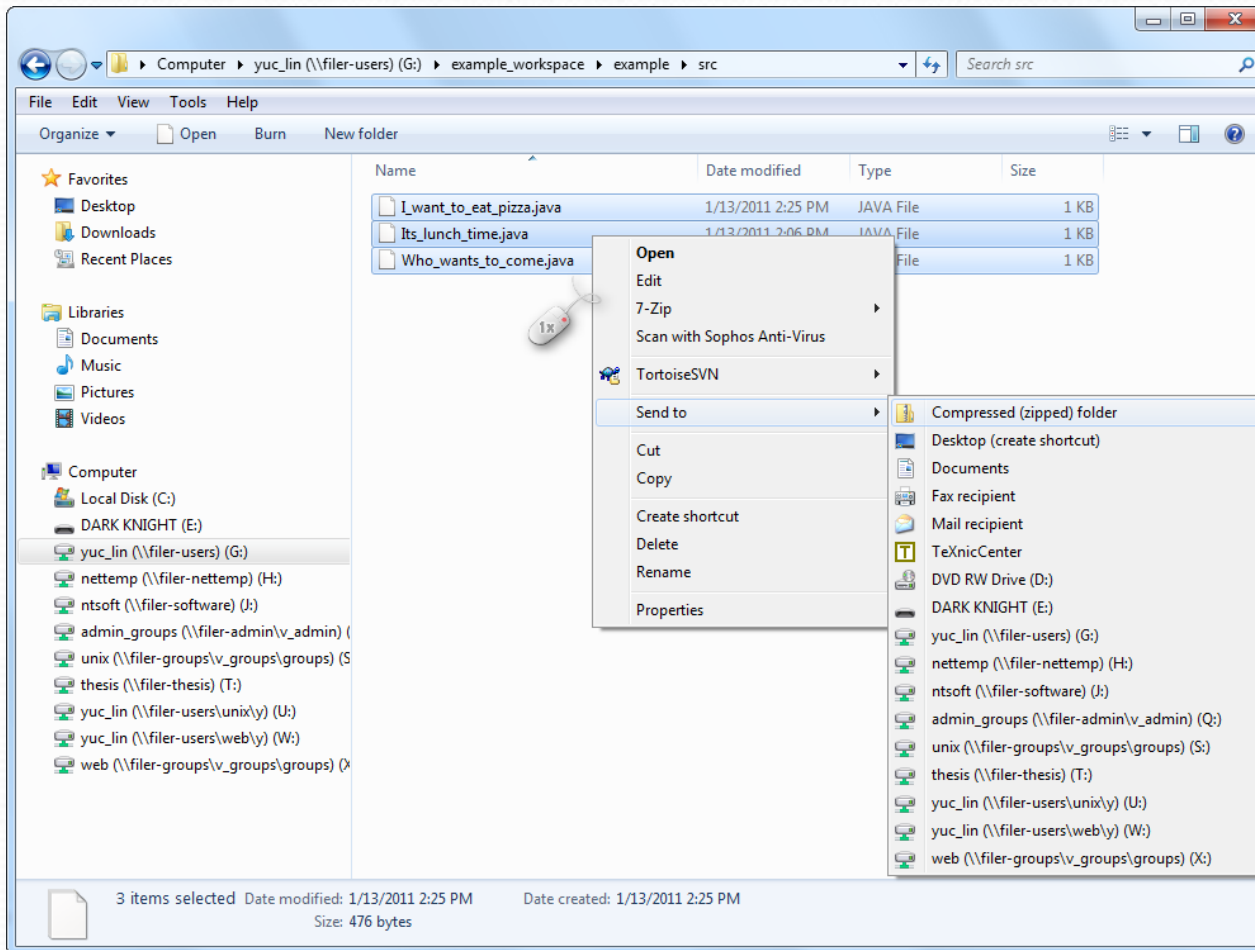
Submission of Assignments and Lab Exercises

- Go to the EAS system website @ <https://fis.encs.concordia.ca/eas/>
- Login with your ENCS username and password
- Click on the "Student" category
- You would expect to see a list of courses you are currently taking
- Scroll down and you will see "Expectations of originality", select "I agree" and continue
- For "Current term course sections", choose COMP248 for this course
- Browse your compressed file (containing your Java files)
- To submit an assignment: select the "submission type" as "programming_assignment"
- To submit a lab exercises, select the "submission type" as "quiz"

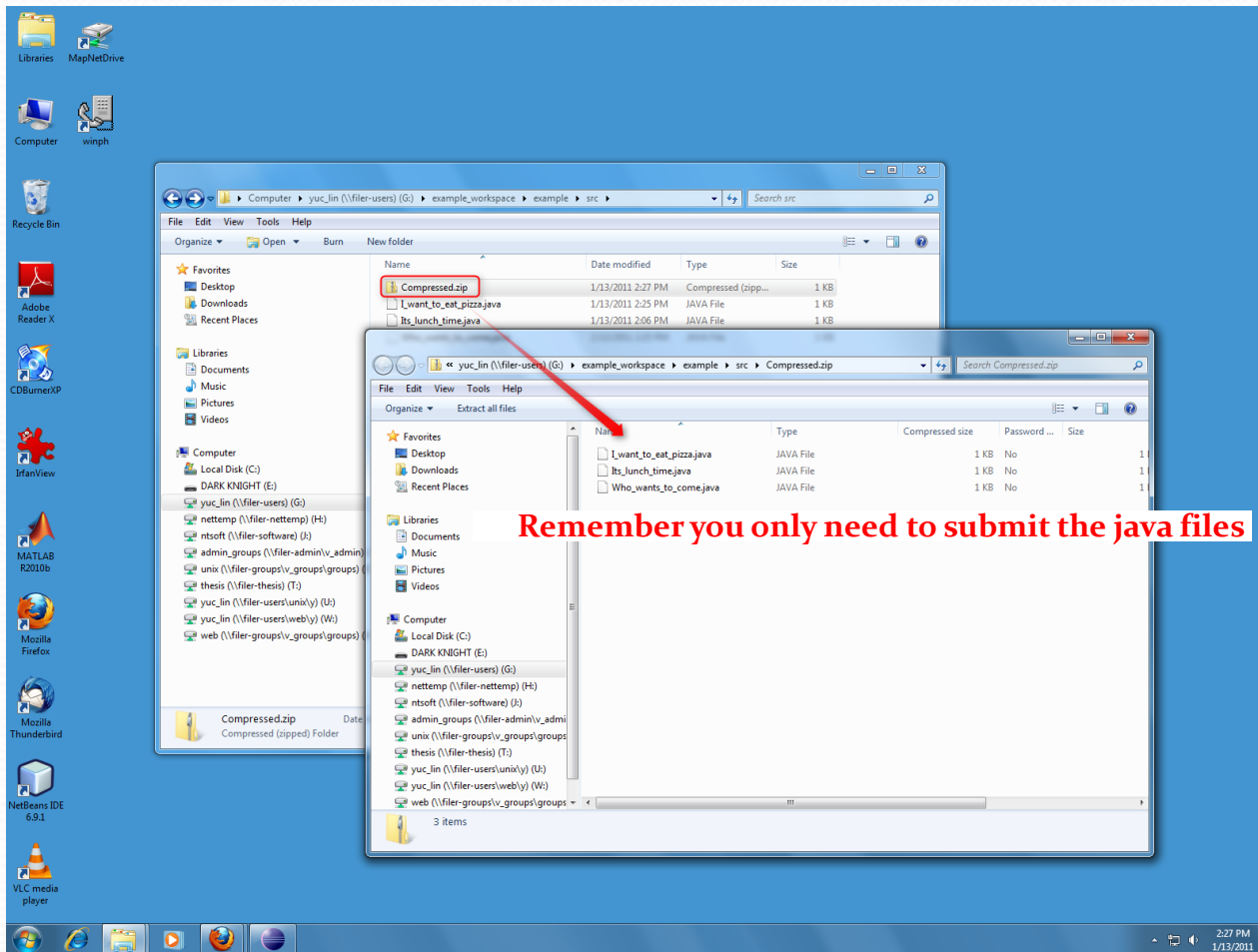
How to compress files



How to compress files



How to compress files



Assignment submission

- Caution --- For "submission number," please be sure to select accordingly
 - assignment #1, please select "1"
 - assignment #2, please select "2"
 - assignment #3, please select "3"
 - etc.