

HW0: Getting Started!

Introduction

This homework will serve as a warm-up for web app development. In it, you will practice several skills:

- Setting up Eclipse for Java EE development
- Accessing a Subversion repository
- Running a Java EE web app

The homework will introduce you to several tools that you will be using throughout the semester: Eclipse, Tomcat, and Subversion (SVN). These are professional-quality tools commonly used in practice.

Step 1. Download and install Tomcat 6

Download and install Apache Tomcat version 6 on your machine. Tomcat is a widely used Java EE Web Container. You will use Tomcat as a server for your Java EE web apps. Note that the version you must use in this course (version 6) is not the latest version.

How you download/install Tomcat depends on your platform:

- **Windows:** Go to <http://tomcat.apache.org/download-60.cgi>, and get the appropriate Binary Distribution (probably **32-bit Windows zip** or **64-bit Windows zip**).
- **Mac:** Go to <http://tomcat.apache.org/download-60.cgi>, and get the appropriate Binary Distribution (probably **zip** or **tar.gz**). Unpack the files. Most people place them in **/Library/**. Alternatively, you can install MacPorts (<http://www.macports.org/>), and then install the **tomcat6** package. Note that MacPorts installs the Tomcat files in **/opt/local/share/java/tomcat6/**.
- **Linux:** There should be a **tomcat6** package that you can install using your distro's package management system.

Step 2. Download and set up Eclipse for Java EE

Download and install the latest version (*Juno*) of Eclipse for Java EE on your machine. Eclipse is the most widely used Integrated Development Environment (IDE) for Java. It includes facilities for editing, running, and debugging Java EE web apps.

Before you can run Eclipse, you'll need to install a Java JDK (many of you will already have this). The preferred version for Juno appears to be Java 6 (aka 1.6):

http://www.java.com/en/download/manual_v6.jsp

To download Eclipse, navigate to the following webpage:

<http://www.eclipse.org/downloads/>

You will want the version called *Eclipse IDE for Java EE Developers*.

Once you've unpacked/installed the software (exactly what you do here depends on your platform), fire up Eclipse for the first time. You will be asked to create a workspace directory (aka a *folder*). This workspace directory is where all the files for your Java EE projects will be stored.

Step 3. Install the Eclipse Subversion plugin


To download the example web app, you will need a Subversion plugin for Eclipse. Subversion is a tool that enables you to store your project files in a central repository and to keep track of the different revisions of your files. Later, you will use Subversion to turn in homework/project assignments and to collaborate on code with your team.

Follow these steps to install Eclipse's Subversive SVN Team Provider plugin:

1. Click **Help** → **Install New Software...** This should pop up an **Install** window.
2. In the **Install** window's **Work with:** dropdown, select **--All Available Sites--**. In the filter field (which initially contains the words "type filter text"), enter **Subversive**. This should cause the **Name/Version** columns to update. Note: Eclipse may be *very slow* in updating the table. Be patient and wait for it!
3. Check the box next to **Subversive SVN Team Provider**, and click the **Next** button. Click through the installation wizard by clicking **Next/Finish/etc.**, and restart Eclipse when prompted. When Eclipse starts, it should pop up an **Install Connectors** window.
4. From the **Install Connectors** window, select the newest version of **SVN Kit** (*do not use JavaHL*), and click **Finish**. This should cause an installation wizard to pop up.
5. Click through the installation wizard by clicking **Next/Finish/etc.**, and restart Eclipse when prompted. When Eclipse restarts, you should be back at the **Welcome** screen.

Note: If you mess up the **Install Connectors** bit and can't get that window to pop up again, try removing your workspace folder (I assume you have no valuable work in there at this point), and then restarting.

So what did this installation procedure do? It added a **SVN Repository Exploring** perspective to Eclipse. To open the perspective starting from the Welcome screen, do the following:

1. Click the **Workbench** button that looks like this: . This should open the **Java EE** perspective.
2. Click **Window** → **Open Perspective** → **Other...** This should pop up a list of perspectives.
3. Select **SVN Repository Exploring** from the list to open the perspective. The left column of the main Eclipse window should have a **SVN Repositories** view instead of the usual **Project Explorer** view.

Step 4. Create a Tomcat server in Eclipse

To run a web app in Eclipse, you must configure Eclipse so that it knows where a web server is located on your system.

Starting from Java EE perspective, do the following to add a Tomcat server to Eclipse.

1. Click **File** → **New** → **Other...** This should open a wizard-selection window.
2. Expand **Server** folder, select the **Server** wizard, and click **Next**. This should start the **Server** wizard.
3. Expand the **Apache** folder, select **Tomcat v6.0 Server**, and click **Next**. This should take you to a dialog box that asks for configuration information about the server.
4. To fill in the **Tomcat installation directory** field, click **Browse**. Find the folder where your system installed Tomcat. It's probably a folder called **tomcat6**, and the folder should contain subfolders, such as **bin**, **common**, **conf**, **lib**, **logs**, **shared**, **temp**, **webapps**, and **work**. Once you have set the **Tomcat installation directory**, click **Next**. This should bring up the last dialog box of the wizard.
5. Click **Finish**. In the **Project Explorer**, you should see a **Servers** folder. Expand the folder, and you should see your Tomcat server.

Step 5. Checkout the example web app

To download the example web app, you'll need to use Subversion to “checkout” a copy of the example source code.

Go to the **SVN Repository Exploring** perspective (see Step 3), and perform the following steps to do the checkout:

1. At the top of the **SVN Repositories** view is a **New Repository Location** button—click it. This should open a **New Repository Location** window with fields for you to fill in.
2. Fill in the fields as follows, and click **Finish**.
 - **URL:** <https://utopia.cs.memphis.edu/course/comp4081-2012fall/examples/>
 - **User:** anonymous
 - Leave the **Password:** field blank.This should add the repository to the **SVN Repositories** view. You may get a message about “master password” and/or “password recovery”. This is your OS trying to help you keep track of your passwords. Whatever option you choose is probably fine.
3. Expand the contents of the repository by clicking the triangle. You should see a **KnockKnockJoke** folder.
4. Expand the **KnockKnockJoke** folder, and you should see three folders: **trunk**, **branches**, and **tags**.
5. Right click on **trunk**, and select **Find/Check Out As...** This should pop up a **Check Out As** dialog.
6. Select option **Check out as a project configured using the New Project Wizard**, and click **Finish**. This should bring up a wizard-selection dialog.
7. Expand the **Web** folder, select **Dynamic Web Project**, and click **Next**. This should start the **New Dynamic Web Project** wizard.

8. In the **Project Name:** field, enter **KnockKnockJoke**. Make sure that the **Target runtime** and **Configuration** fields say **Apache Tomcat v6.0**. Click **Next**. This brings up a configuration dialog for source and output folders.
9. There's nothing to do here, click **Next**. This brings up web-module configuration dialog.
10. Uncheck the **Generate web.xml deployment descriptor** checkbox, and click **Finish**. This brings up a prompt to switch to the **Java EE** perspective. Click Yes. If you see the **KnockKnockJoke** project in the **Project Explorer**, the checkout was successful.

Step 6. Run the web app

To run the web app, perform the following steps from the **Java EE** perspective.

1. Right-click on the **KnockKnockJoke** project in the **Project Explorer**, and then click **Run As → Run on Server**. This should bring up the **Run on Server** wizard.
2. Click **Finish** to launch the web app.

One last task

For future assignments, you will need a username and password to commit to the Subversion repository.

To set up a username/password, do the following:

1. Go to <http://www.cs.memphis.edu/~sdf/util/htpasswd/>, and fill out the form. Use your U of M UUID (the name before the @ in your university email address) as your username. Once you've filled in your username and password, press the button.
2. Copy all of the **encrypted password** string, and paste it into an email to me.

Note that this username/password is independent from all your other university accounts. Don't forget this password! If you need to change it, simply repeat the above steps.

Submitting

To receive credit for this homework, you must

- demonstrate that you can run the web app at the start of class on the day the homework is due, and
- email me your encrypted password before class on the day the homework is due.