

SUBVERSION

Subversion

- What is source code version control?
 - <http://svnbook.red-bean.com/>
 - allow multiple people to modify the same source code
- ☑ • allow one person to manage multiple versions of their source code
 - move from computer to computer to develop
 - track all changes

Repository



zeus.cs.pacificu.edu
/home/shereen/SVNROOT/

Store your source code on zeus
check it out and edit it on any
other machine and upload your
changes back to zeus.

Client



moe.cs.pacificu.edu
/home/shereen/workspace/HelloWorld

Client

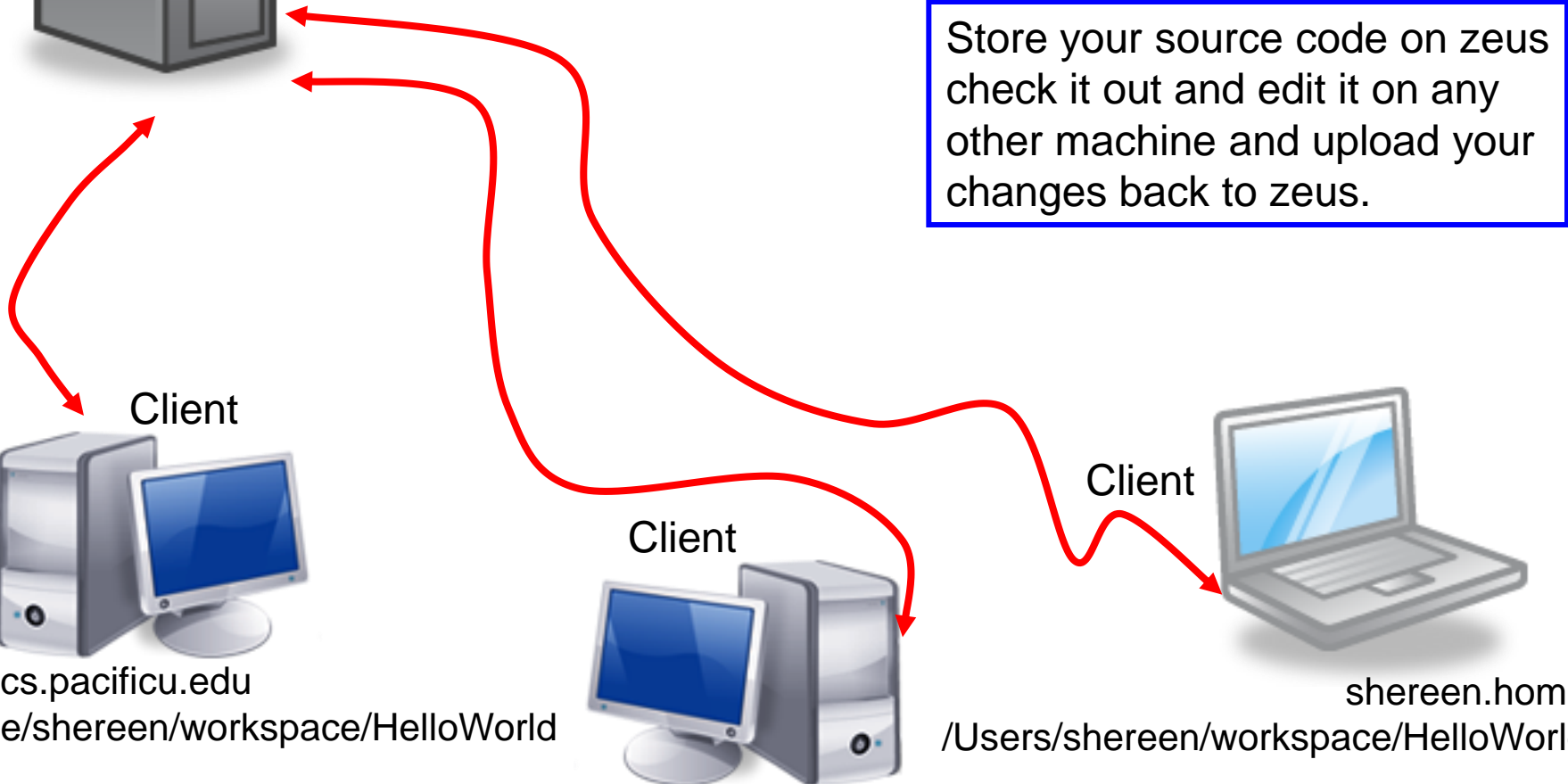


lisa.cs.pacificu.edu
/home/shereen/workspace/HelloWorld

Client



shereen.home
/Users/shereen/workspace/HelloWorld



Topics

- Subversion
 - Source Control
 - Check in
 - Check out
 - Update
 - Commit
 - Merge Conflict
 - Revert a file

SVNTest

- Make sure preferences for SVN interface are set to SVNKit (Pure Java)
- Import CS300SVNTest
File->Import->SVN->Checkout Projects from SVN
svn+ssh://zeus/home/CS300Public/2014/SVNROOT_CS300_2014
- Right-click on project
Team->Disconnect
Make sure and delete meta data

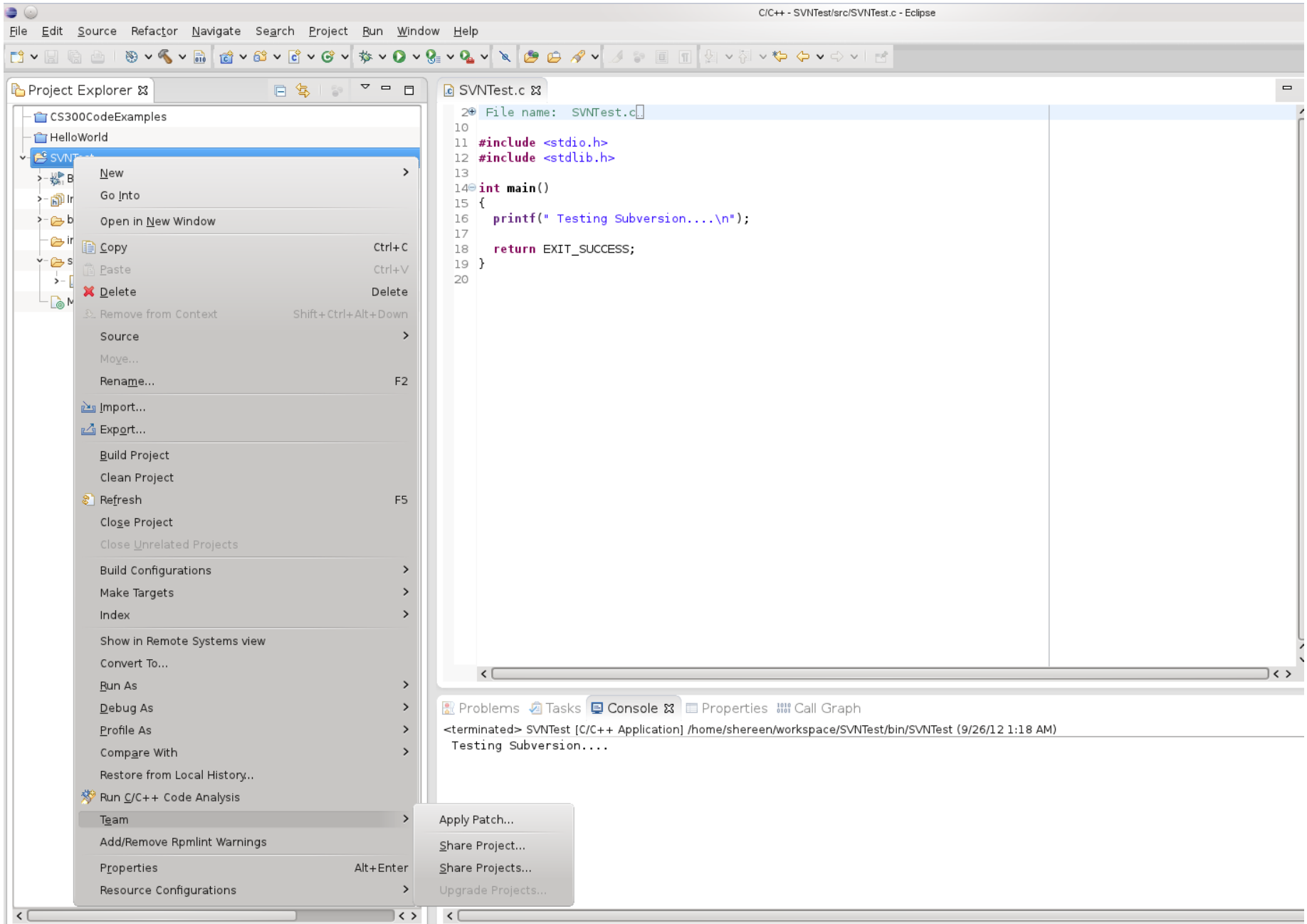
How to get this to work

- Create a repository on zeus
 - do this exactly once
 - use this one repository for all your projects
- login to zeus

```
zeus$ svnadmin create /home/ryand/SVNCS300REPOS
```

Check in SVNTest

- Problem: Let's check this project into the repository.
- How?
- Right click on the SVNTest project, then Team, then Share Project.
 - See next slide



Share Project

Share Project

Select the repository plug-in that will be used to share the selected project.

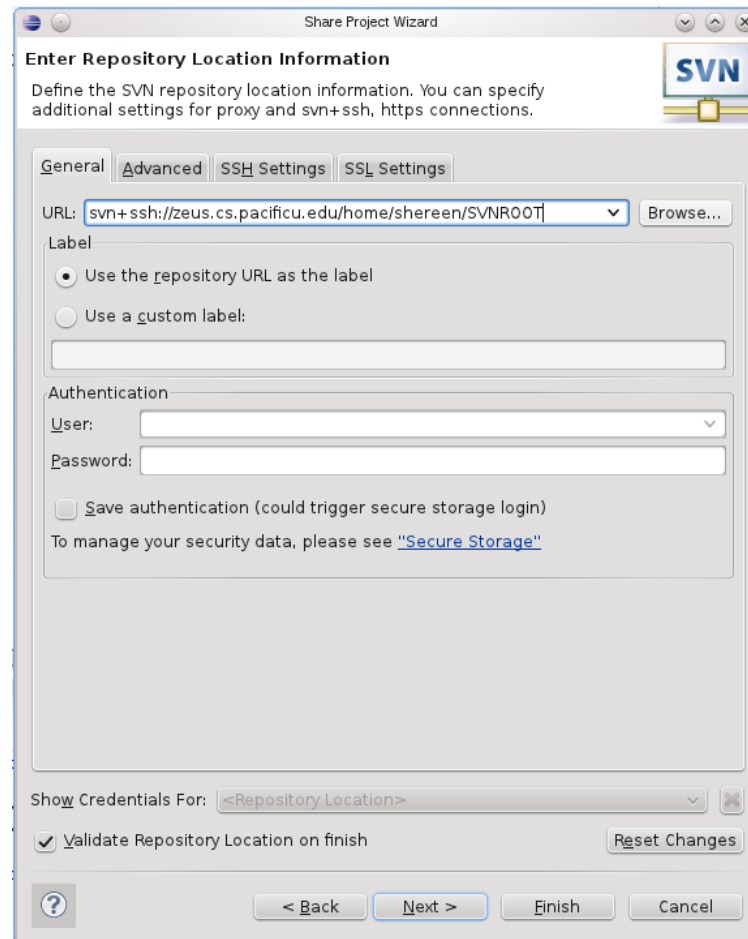


Select a repository type:

 CVS

 SVN

URL should use /home/punetid/SVNCS300REPOS on all subsequent slides




The screenshot shows a 'Share Project Wizard' window with the title 'Share Project Wizard'. The main heading is 'Enter Repository Location Information'. Below the heading is a sub-heading: 'Define the SVN repository location information. You can specify additional settings for proxy and svn+ssh, https connections.' There is an SVN logo in the top right corner. The window has four tabs: 'General', 'Advanced', 'SSH Settings', and 'SSL Settings'. The 'General' tab is selected. The 'URL:' field contains 'svn+ssh://zeus.cs.pacificu.edu/home/shereen/SVNR00T' and has a 'Browse...' button to its right. Below the URL field is the 'Label' section with two radio buttons: 'Use the repository URL as the label' (selected) and 'Use a custom label:'. There is an empty text input field below the radio buttons. The 'Authentication' section has a 'User:' dropdown menu and a 'Password:' text input field. Below these is a checkbox labeled 'Save authentication (could trigger secure storage login)' which is unchecked. Below the checkbox is a link: 'To manage your security data, please see "Secure Storage"'. At the bottom of the dialog, there is a 'Show Credentials For:' dropdown menu with '<Repository Location>' selected. Below that is a checked checkbox 'Validate Repository Location on finish' and a 'Reset Changes' button. At the very bottom are four buttons: '?', '< Back', 'Next >', 'Finish', and 'Cancel'.

Share Project Wizard

Specify the project(s) location

Specify the project(s) location in the SVN repository



Simple Mode:

URL:

Advanced Mode:

Name on Repository

Use project name

Use empty name

Use specified name:

Project Repository Layout


Use Repository Location layout

Use single project layout

Use multiple projects layout with the specified root name:

Use Subversion recommended layout ('trunk', 'branches' and 'tags')


Project files location on the repository will be different depending on the selected layout type. You can see future files location below:



Share Project Wizard

Enter a commit comment


Type the commit comment for the Share Project operation.



Share project "SVNTest" into "svn+ssh://zeus.cs.pacificu.edu/home/shereen/
SVNROOT"

Choose a previously entered comment or template:

Launch the Commit Dialog for the shared resources



User Credentials

Provide authentication information

svn+ssh://zeus.cs.pacificu.edu



General SSH Settings

Authentication

User: shereen

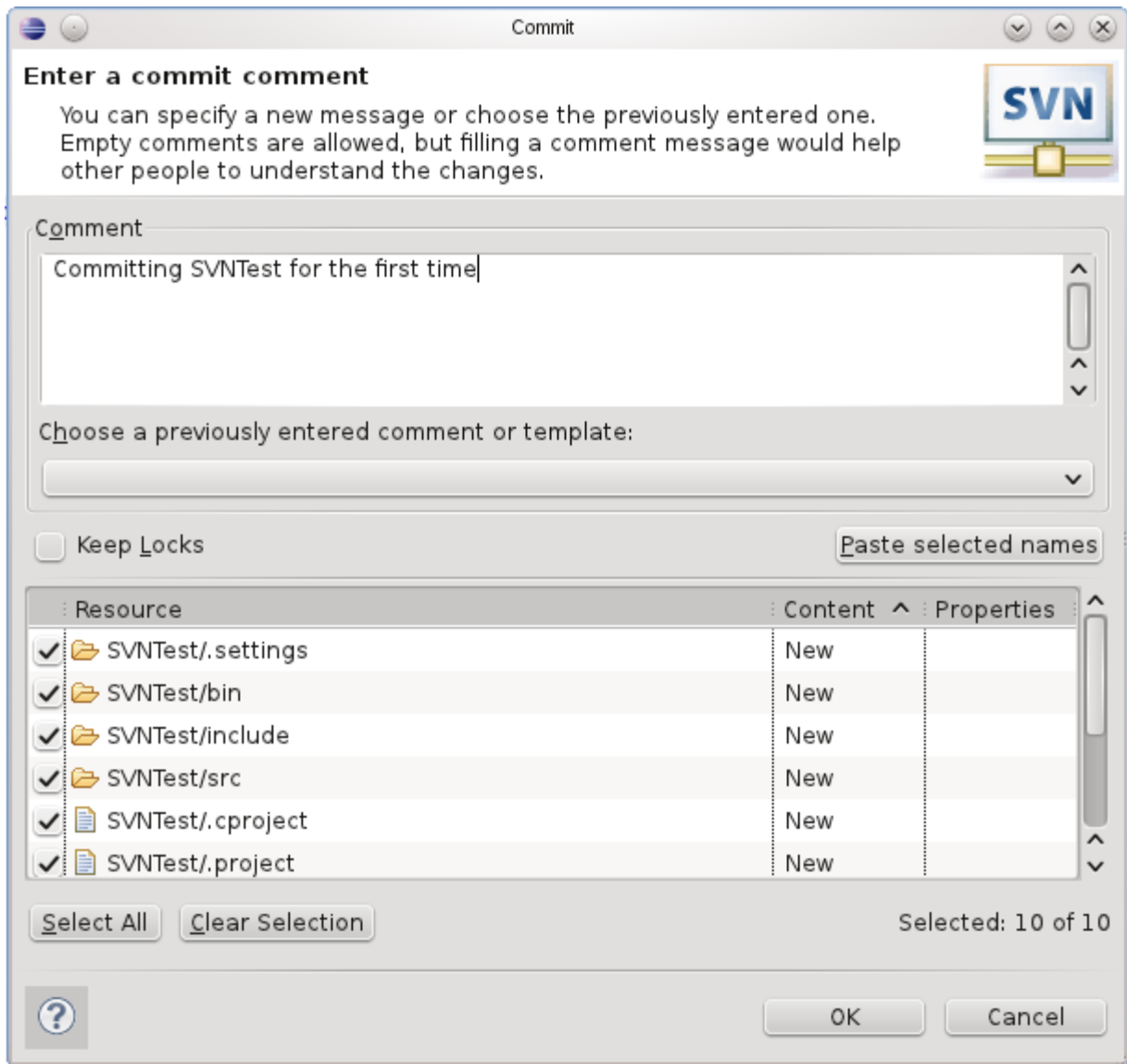
Password: ●●●●●●●●

Save authentication (could trigger secure storage login)

To manage your security data, please see ["Secure Storage"](#)

Apply To: svn+ssh://zeus.cs.pacificu.edu

? OK Cancel



How to do a code commit

To commit a project, right click on the project folder → Team → Commit

Do not commit (i.e. uncheck) any binary files!!!!!!

Add very descriptive comments for EACH code commit. You will not be sorry.

Version Control

- Each change you make to the source code is a **revision** stored in the repository
 - can annotate your change with a note
 - why did I do that?
 - you can browse back through the repository to find old revisions of file
 - changed a data structure and it did not work
 - rewrote an algorithm and it got slower!
 - check out the old (working) revision from the repository

Hmmm....

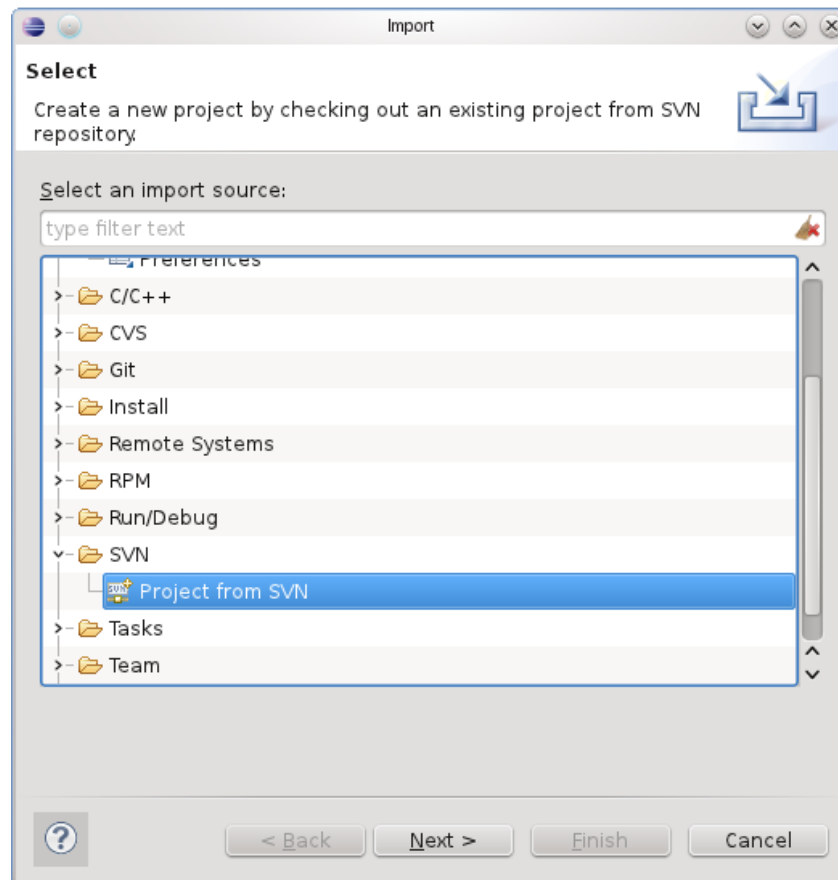
- How often should I *update* and *commit*?
 - every major change
 - once every 15 minutes
 - right before you do something you think may be a bad idea
 - be sure to update and commit before you log off of a lab machine!
 - Or before you leave the lab
 - Someone may reboot your machine!

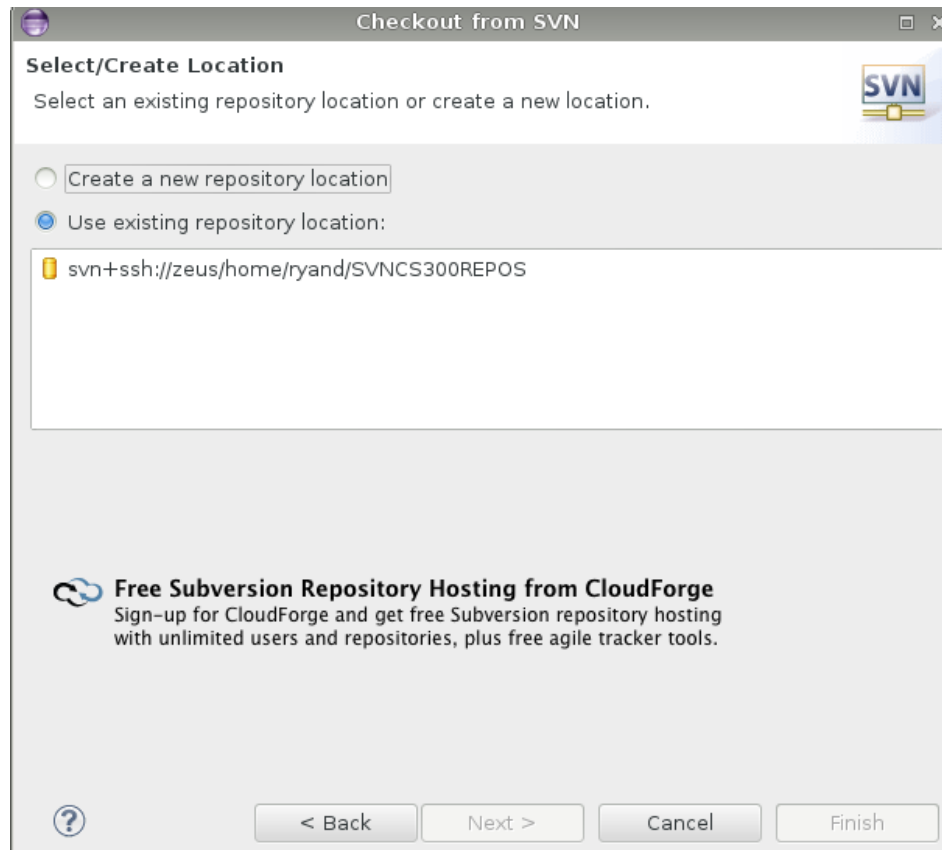
Let's Delete SVNTest

- Right Click the SVNTest project -> Delete
- CHECK → Delete project contents on disk

How to checkout

To checkout a project, File → Import, then






Checkout from SVN

Select Resource

Select a resource which will be checked out as project.



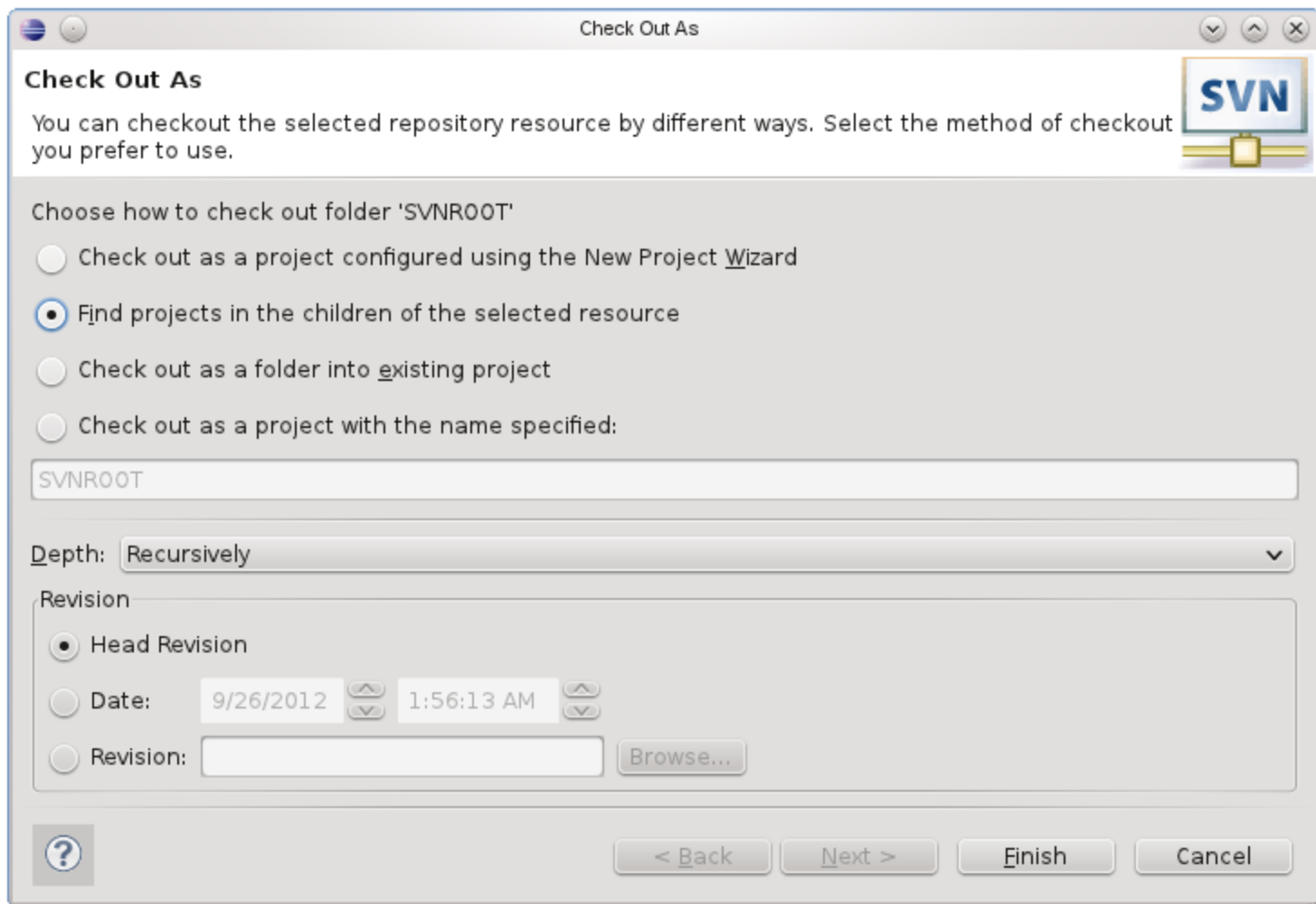
URL: Browse...

Revision

Head Revision

Date:


Revision:



Check Out Projects

Selected projects will be checked out into the workspace

Following list contains projects that were automatically found on the repository. You can select project set you wish to be checked out into the workspace.



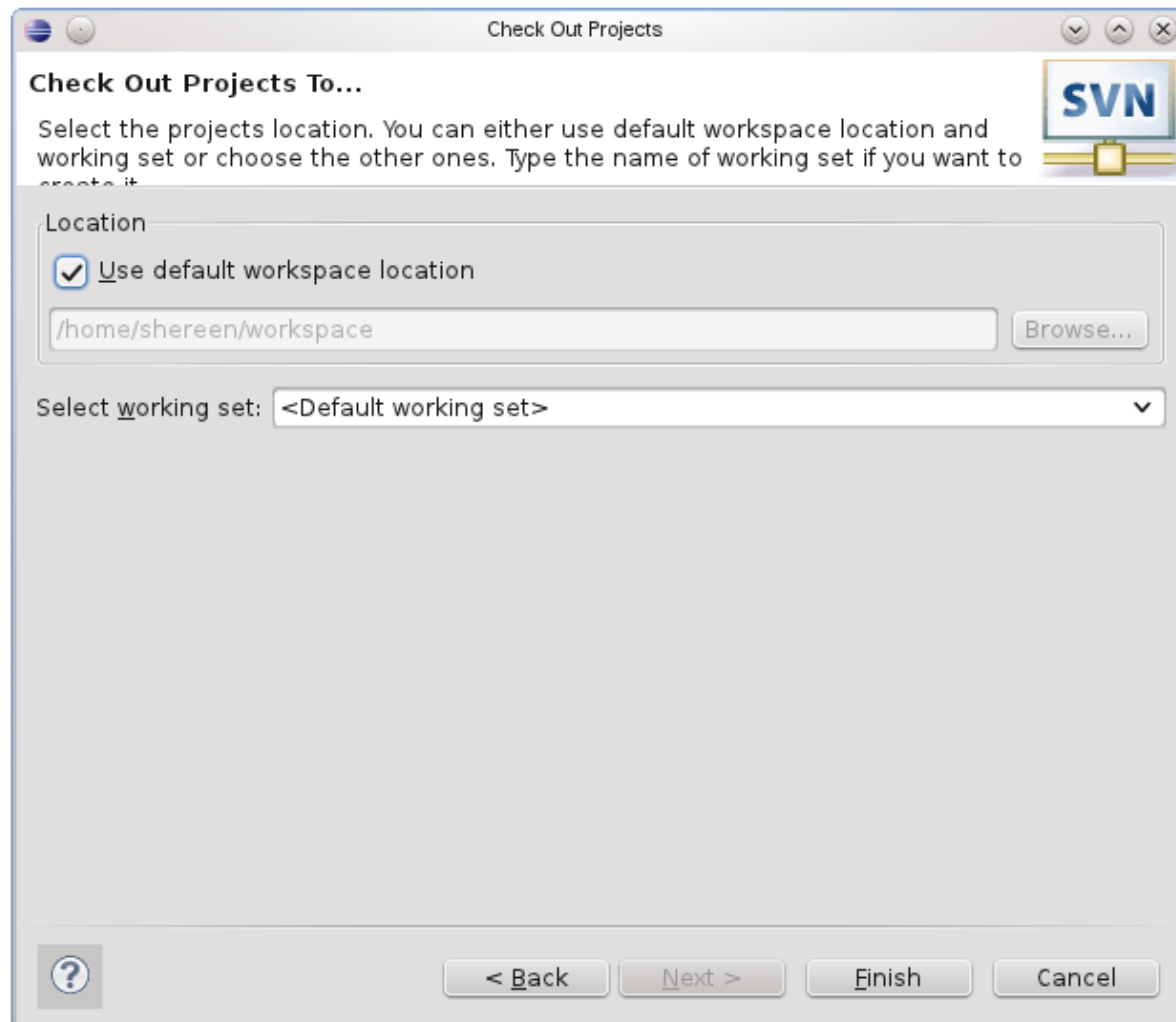
Check out as a folders into existing project

Check out as a projects into workspace

Repository URL	Project Name	Project Type
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	01 GamePieces	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	CS300CodeExamples	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	MyAddition	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	Assignment3-CreditCar	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	CodeLayout	Eclipse Project
<input checked="" type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	SVNTest	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	HelloWorld (1)	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	HelloWorld	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	TestingPython	Eclipse Project
<input type="checkbox"/> svn+ ssh://zeus.cs.pacificu.edu/home/sher	Tutorial2D	Eclipse Project

Select All Clear Selection Respect projects hierarchy

? < Back Next > Finish Cancel



Make a change in Eclipse

- Add `printf("I love CS 300!\n");` to `main()`
- Build and run (just to be sure)
- Commit to SVN:
 - Right Click SVNTest | Team | Commit
- Do NOT commit .o or executable files!

Show History

- In Eclipse
- Right Click a File
 - Team | Show History

When things go bad...

- Let's revert ONE FILE back to before the last change
- Right Click the project to revert
- Replace With | Revision
 - Revisions listed with comments
 - Double-click a revision

Using Subversion by hand

- Open a single shell prompt
- Create a folder called Junk and change into it
- Check out SVNTest project in Junk directory

- Type

```
$ svn checkout
```

```
svn+ssh://zeus/home/shereen/SVNROOT/SVNTest
```

- Using Geany, add a printf to main().

Using Subversion by hand

- From a command line, find the Makefile and re-make the project and run it.
- Now commit the changes to the repository by hand.

```
$ svn commit -m "add second printf"
```

- In Eclipse and do an update on SVNTest. Your changes should show up.
Right Click SVNTest | Team | Update to HEAD

Check out on Zeus

```
ssh to zeus.
```

```
zeus~> mkdir cs300
```

```
zeus~> cd cs300
```

```
zeus~> svn checkout
```

```
svn+ssh://zeus/home/shereen/SVNROOT/SVNTest
```

```
zeus~> cd SVNTest
```

```
zeus~> make clean
```

```
zeus~> make
```

This is how you should test on zeus from now on.