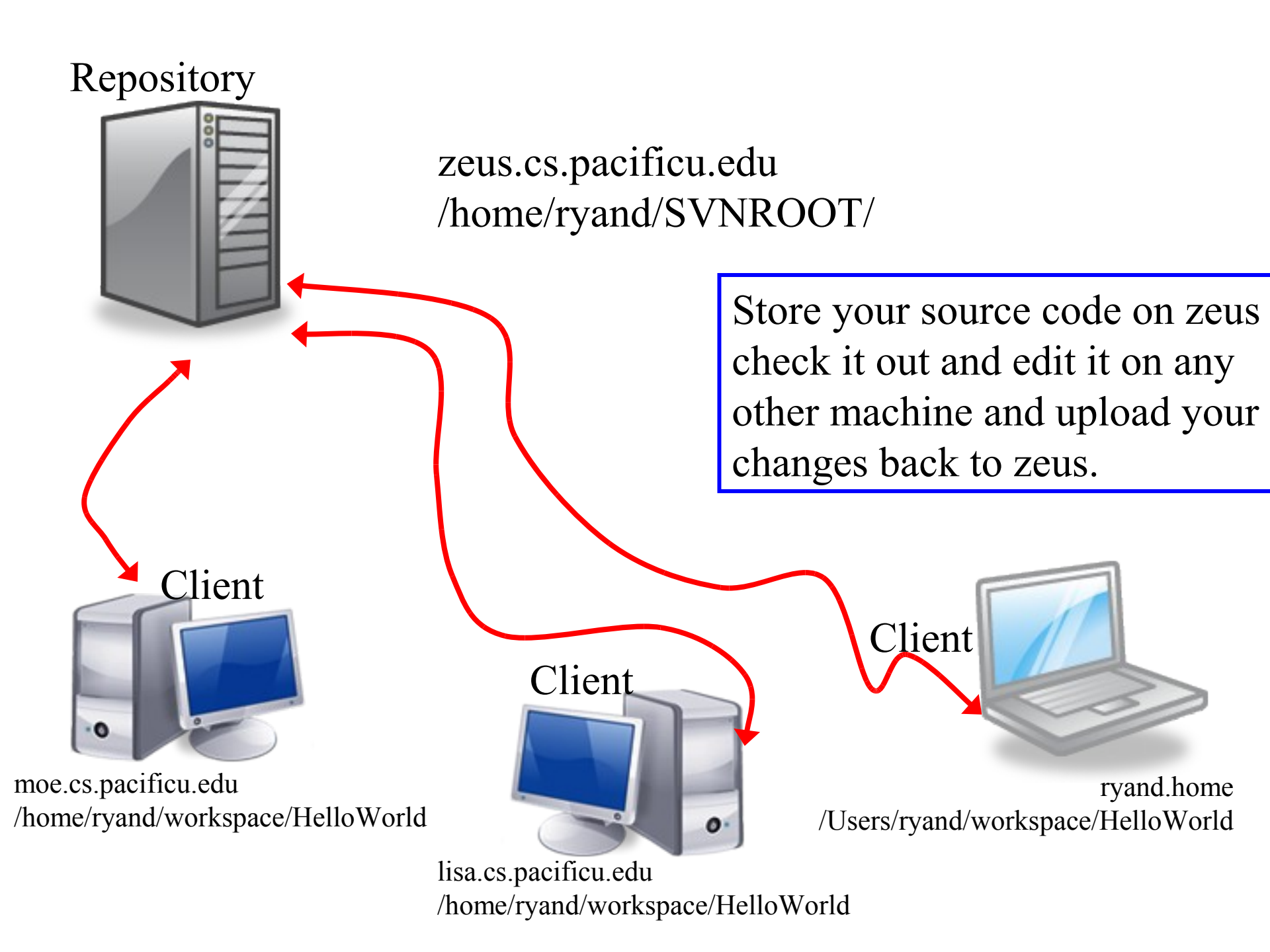
Software Tools Include

- Subversion
  - source control
- Eclipse
  - Integrated Development Environment
- Debugger
  - graphical user interface for GDB inside of Eclipse
  -

This presentation will focus on 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/ryand/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/ryand/workspace/HelloWorld
Client
lisa.cs.pacificu.edu
/home/ryand/workspace/HelloWorld
Client
ryand.home
/Users/ryand/workspace/HelloWorld

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!

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/SVNROOT
```

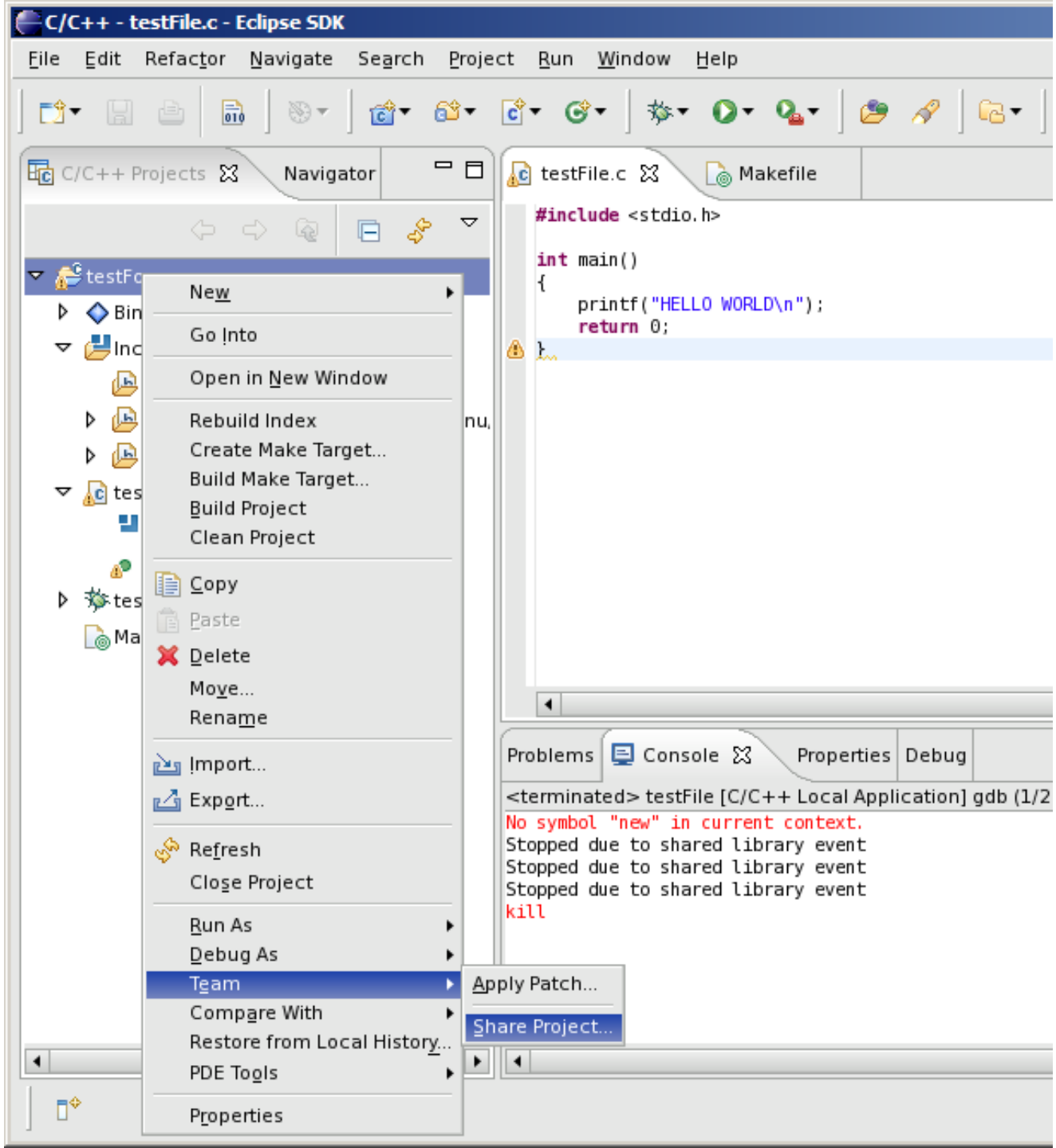
- We will check out source code later…

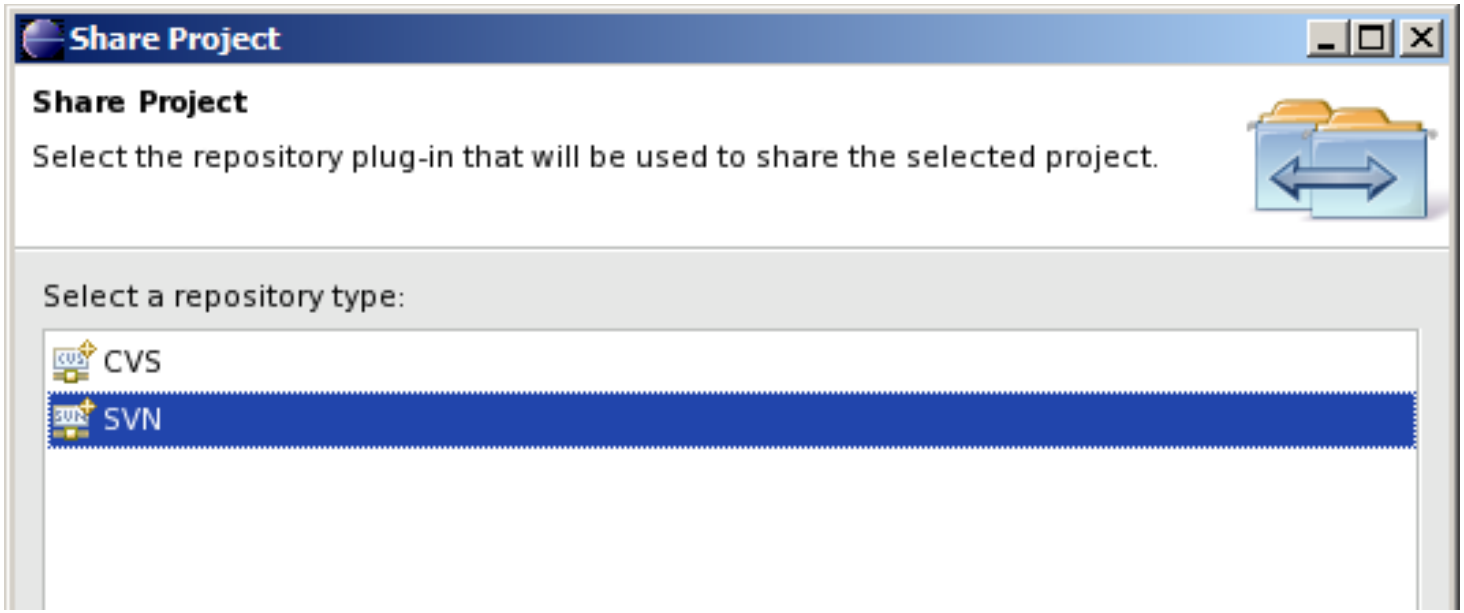
Check in HelloWorld

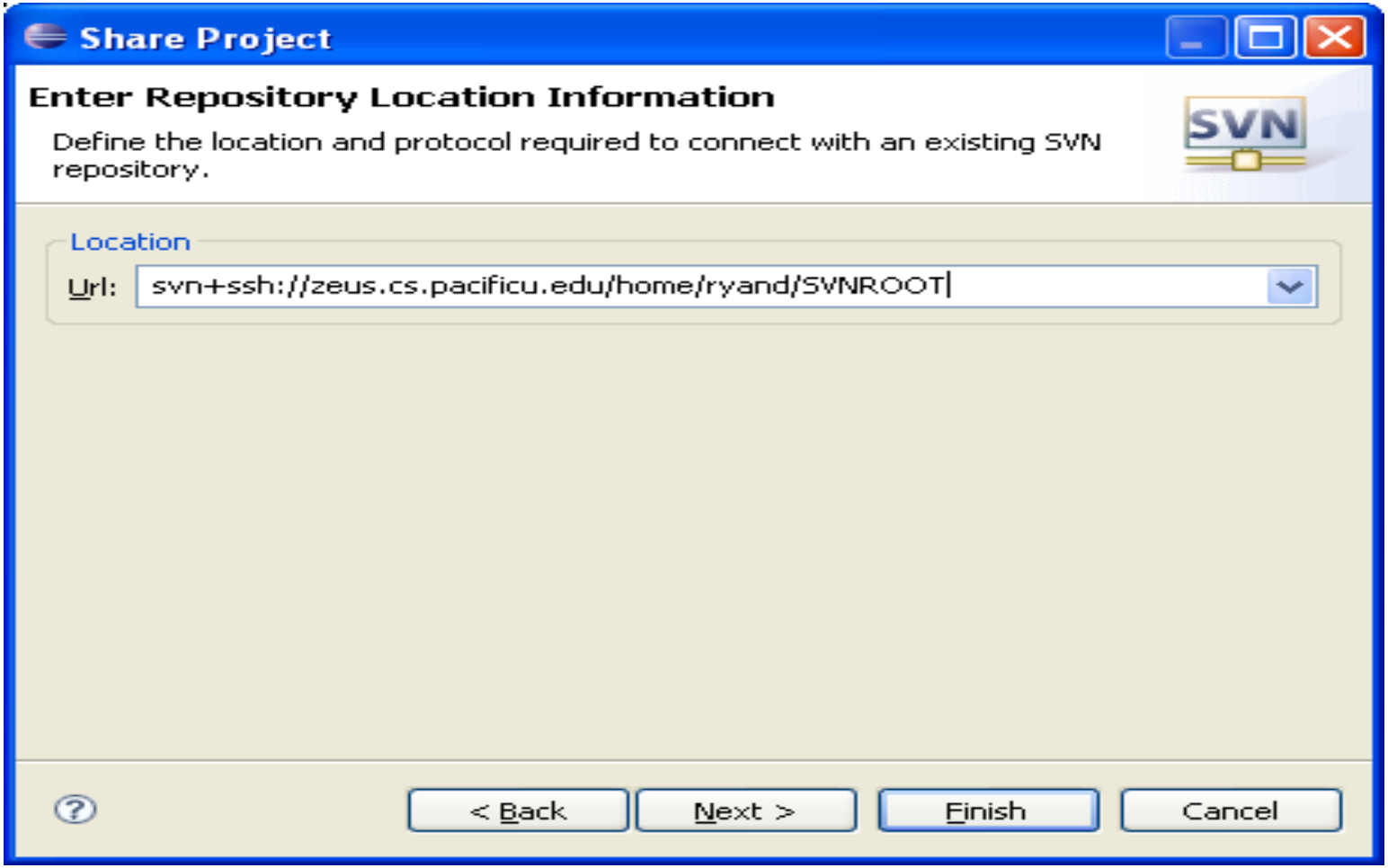
Problem: Each of you have a HelloWorld project. Let's check this project into the repository.

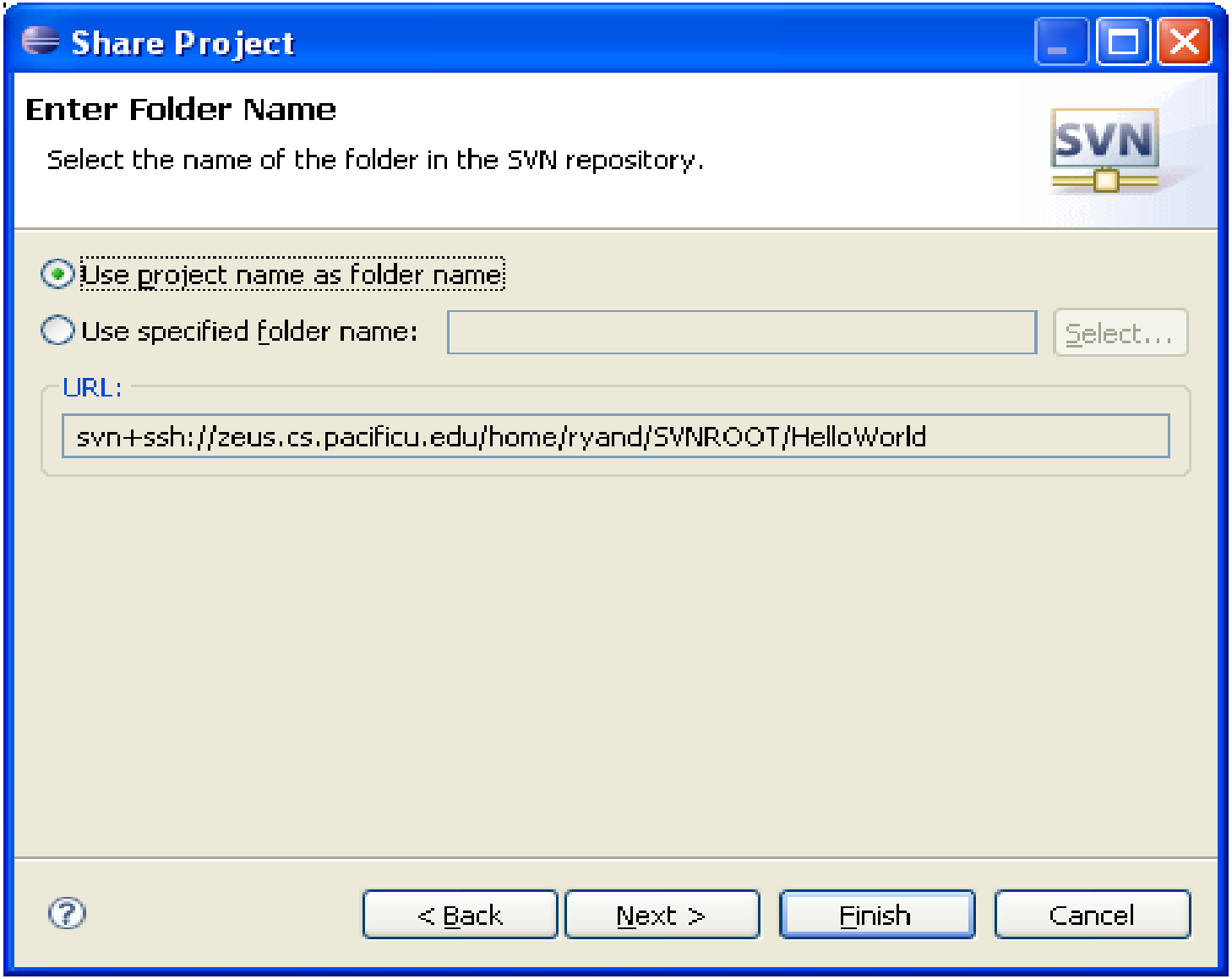
How?

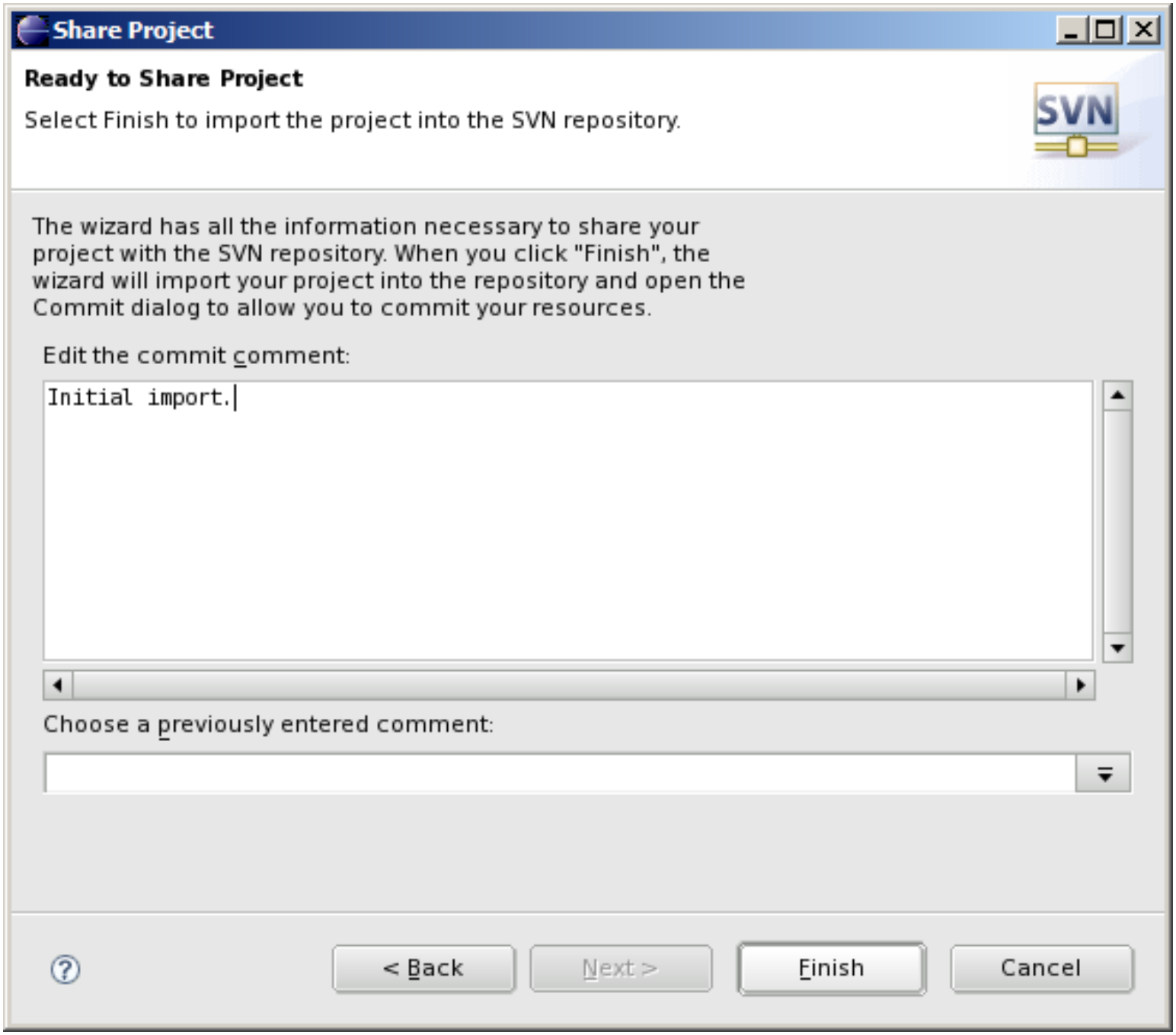
Right click on the HelloWorld project, then Team, then Share Project.


C/C++ - testFile.c - Eclipse SDK
File Edit Refactor Navigate Search Project Run Window Help
C/C++ Projects
Navigator
testFile.c
Makefile
#include <stdio.h>
int main()
{
printf("HELLO WORLD\n");
return 0;
}
New
Go Into
Open in New Window
Rebuild Index
Create Make Target...
Build Make Target...
Build Project
Clean Project
Copy
Paste
Delete
Move...
Rename
Import...
Export...
Refresh
Close Project
Run As
Debug As
Team
Compare With
Restore from Local History...
PDE Tools
Properties
Apply Patch...
Share Project...
Problems
Console
Properties
Debug
<terminated> testFile [C/C++ Local Application] gdb (1/2
No symbol "new" in current context.
Stopped due to shared library event
Stopped due to shared library event
Stopped due to shared library event
kill


Share Project
Share Project
Select the repository plug-in that will be used to share the selected project.
Select a repository type:
CVS
SVN


Share Project
Enter Repository Location Information
Define the location and protocol required to connect with an existing SVN repository.
SVN
Location
Url:
svn+ssh://zeus.cs.pacificu.edu/home/ryand/SVNROOT
< Back
Next >
Finish
Cancel


Share Project
Enter Folder Name
Select the name of the folder in the SVN repository.
SVN
Use project name as folder name
Use specified folder name:
Select...
URL:
svn+ssh://zeus.cs.pacificu.edu/home/ryand/SVNROOT/HelloWorld
< Back
Next >
Finish
Cancel


Share Project
Ready to Share Project
Select Finish to import the project into the SVN repository.
SVN
The wizard has all the information necessary to share your project with the SVN repository. When you click "Finish", the wizard will import your project into the repository and open the Commit dialog to allow you to commit your resources.
Edit the commit comment:
Initial import.
Choose a previously entered comment:
< Back
Next >
Finish
Cancel

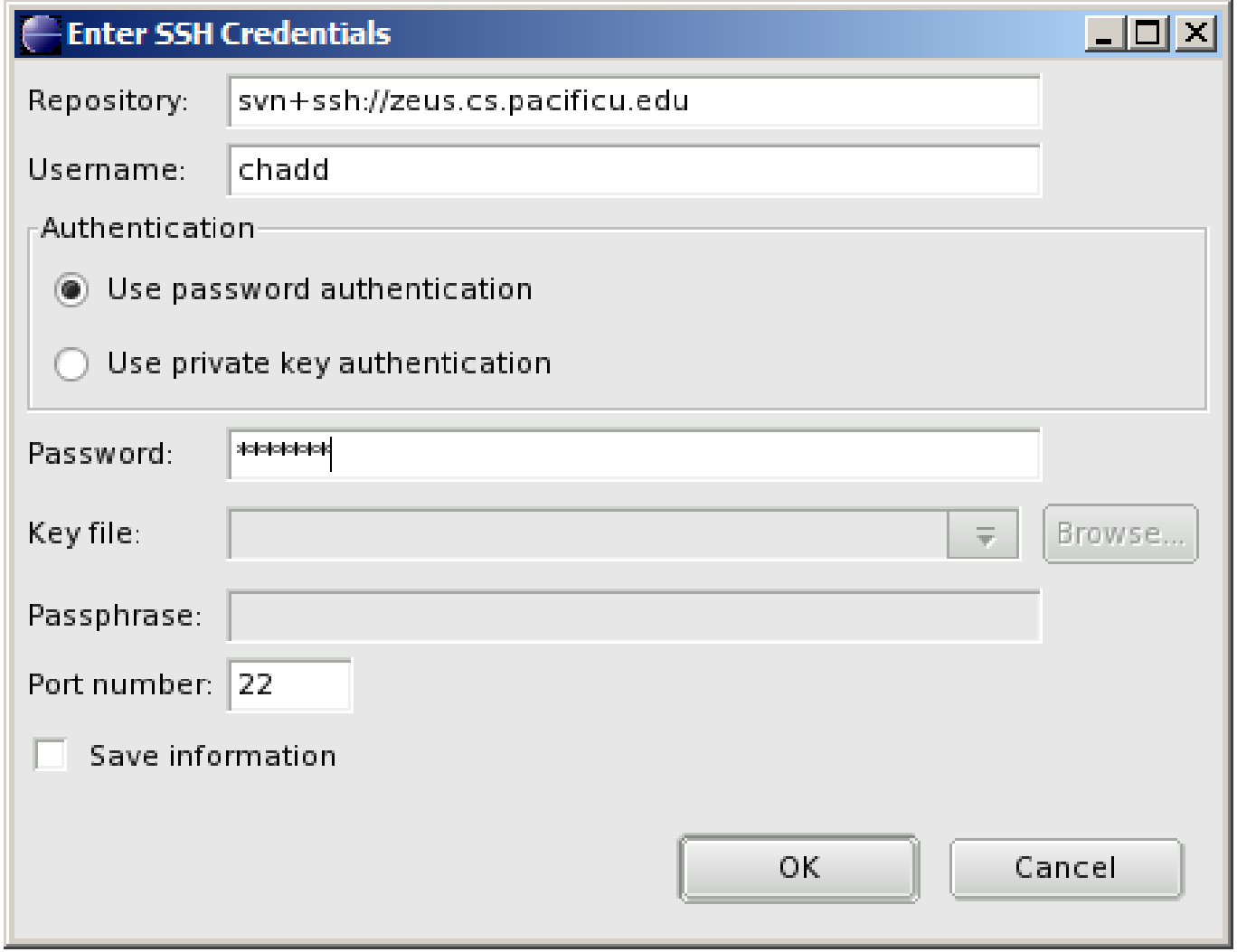
Important!!!

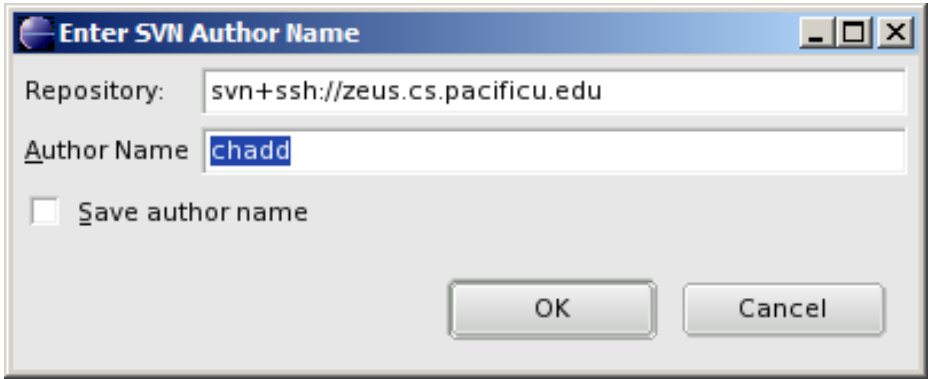
The Initial Import does not commit any code

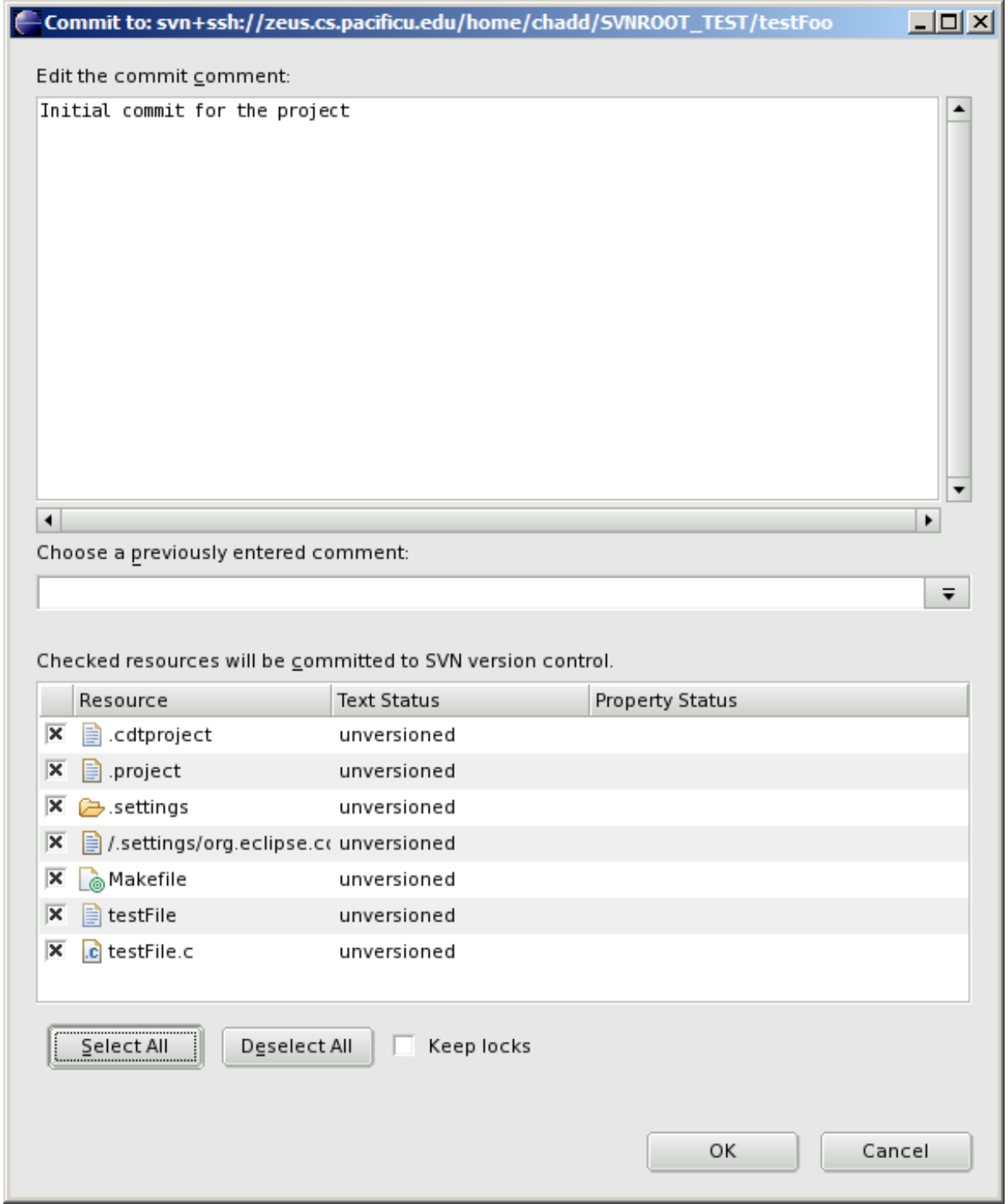
How to do a code commit

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

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

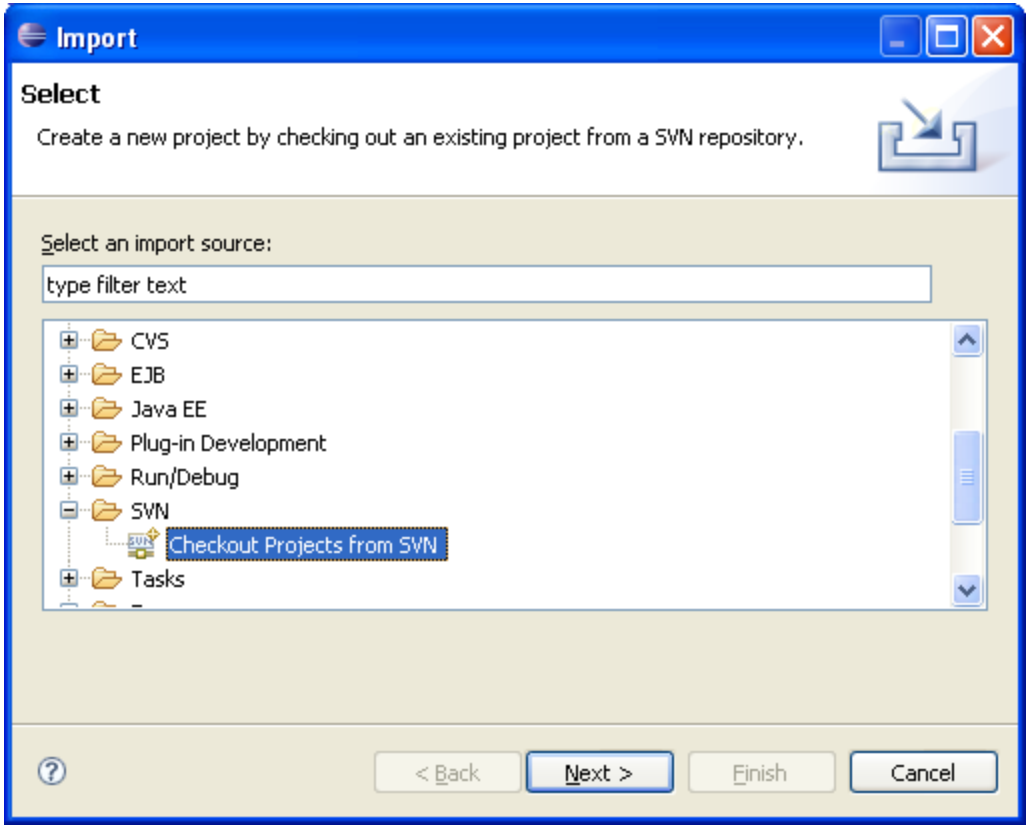

Enter SSH Credentials
Repository:
svn+ssh://zeus.cs.pacificu.edu
Username:
chadd
Authentication
Use password authentication
Use private key authentication
Password:
****
Key file:
Browse...
Passphrase:
Port number:
22
Save information
OK
Cancel


Enter SVN Author Name
Repository:
svn+ssh://zeus.cs.pacificu.edu
Author Name
chadd
Save author name
OK
Cancel

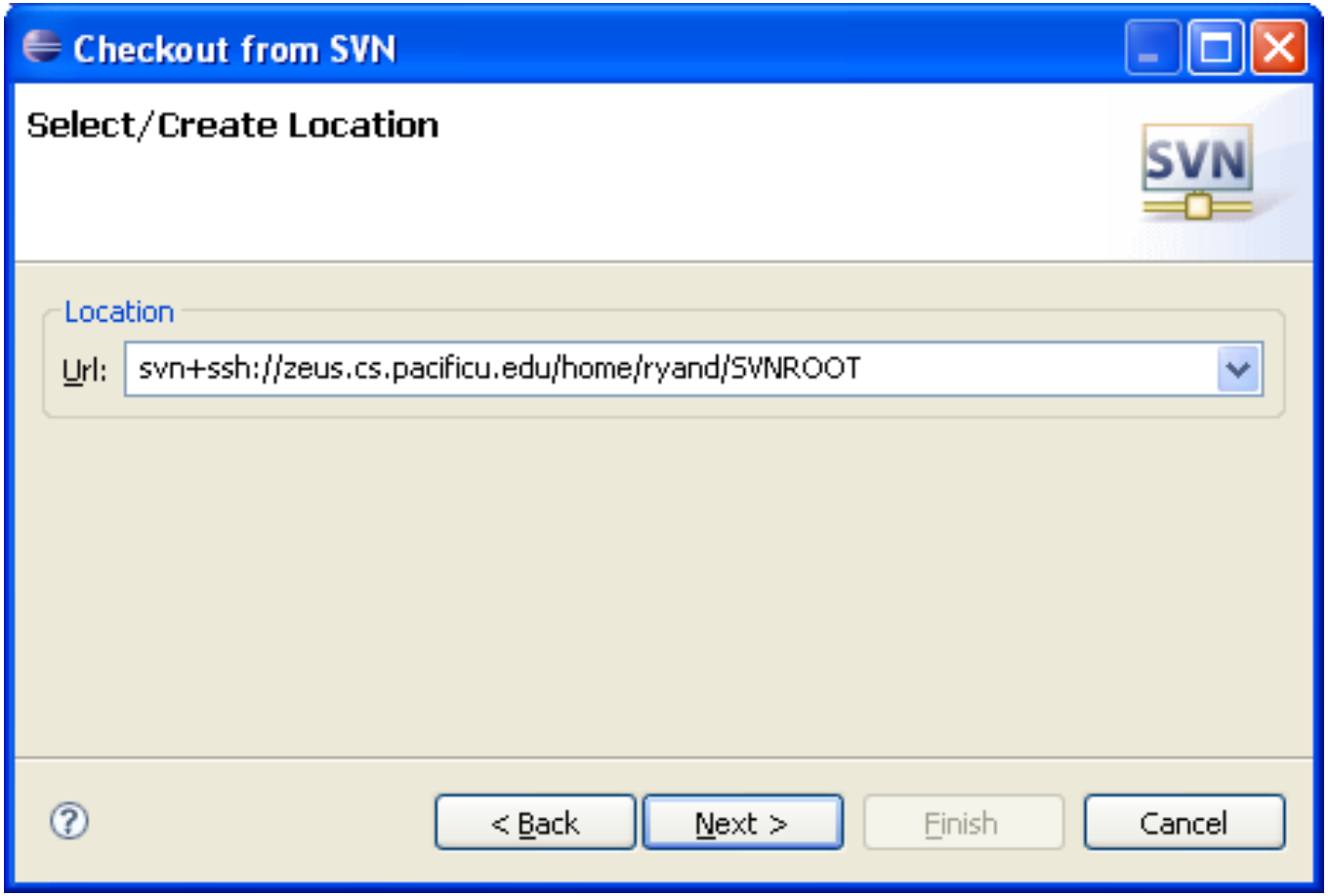

Commit to: svn+ssh://zeus.cs.pacificu.edu/home/chadd/SVNROOT_TEST/testFoo
Edit the commit comment:
Initial commit for the project
Choose a previously entered comment:
Checked resources will be committed to SVN version control.
Resource
Text Status
Property Status
.cdtproject
unversioned
.project
unversioned
.settings
unversioned
/.settings/org.eclipse.c
unversioned
Makefile
unversioned
testFile
unversioned
testFile.c
unversioned
Select All
Deselect All
Keep locks
OK
Cancel

How to checkout

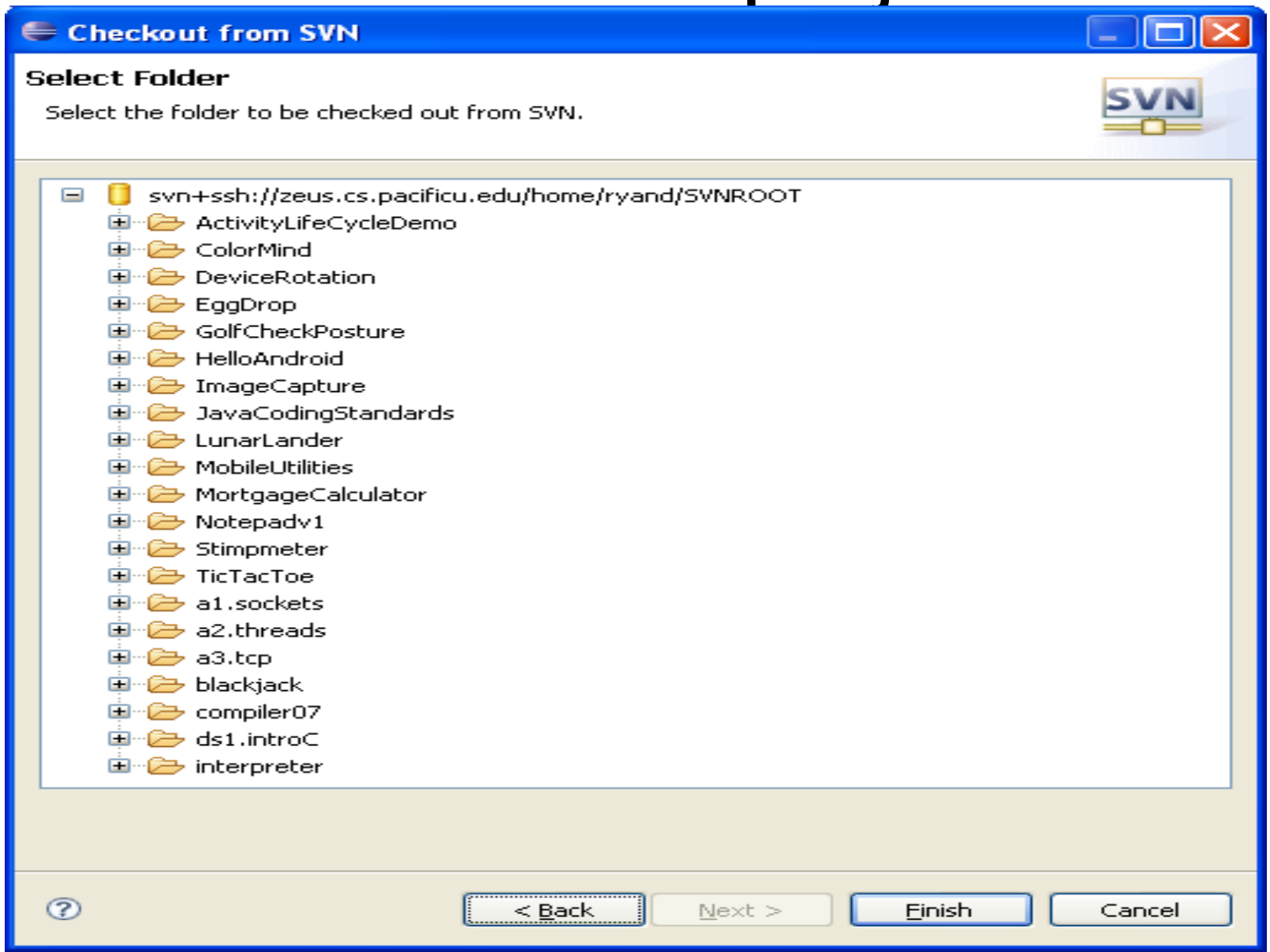
To checkout a project, File → Import, then



Finish checking out HelloWorld



Select the project



Using Subversion by hand

- Close down ALL windows on your machine
- Open a single shell prompt
- Create a folder called Junk and change into it
- Check out HelloWorld project in Junk directory
- Type

```
$ svn checkout svn+ssh://zeus/home/chadd/SVNROOT/HelloWorld
```

- Using a simple text editor from the Utilities folder, change Hello World to Hello followed by your name. Save the file contents.

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 HelloWorld
```

- In a new Window, open Eclipse and do an update on HelloWorld. Your changes should show up.

submit Script

- Must run on zeus!

```
zeus$ submit cs360s07 test.c
SUCCESS: Receipt file: test.c.cs360s07.receipt
DO NOT REMOVE OR ALTER THIS FILE IN ANY WAY!

File transferred successfully!
```

- If anything goes wrong, the receipt file is your proof that you submitted the assignment!
  - don't try to forge the receipt ;-)