▸ Eclipse/Subversion/Linux Script Complete before Wednesday!

The first time you start Eclipse it will be unresponsive for about 45 seconds as it builds your profile. You will get an error message about GNOME & SVN. Press Cancel.

You may get other pop up messages (would you like to provide user stats?)

▸ Change the SVN Connector

Window | Preferences | Team | SVN | Client: **SVNKit (Pure Java)**

▸ Install the C Coding Style Template into Eclipse

Download the C Coding Style Template from
http://zeus.cs.pacificu.edu/chadd/cs480s13/CS300PrefsF10.xml
(also linked from the class schedule web page).
To install the coding standards: **Window | Preferences | C/C++ | Code Style | Import**.
Shift-Ctrl-F will now format the file you are currently editing.

▸ Build a C Project in Eclipse

New Project
C/C++
Create a New C Project (named CS480_simple)
    Choose Makefile Project
    EmptyProject
    Toolchain: Linux GCC
Next
Advanced
C/C++ Build
    Generate Makefile Automatically (Should already be unchecked!)
Finish

Add a directory (src)
Add a directory (bin)

Add a C Source file (src/simple.c)
http://zeus.cs.pacificu.edu/chadd/cs480s13/Lectures/simple.c.html
Rename the file simple.c to CS480_simple.c

Add a File (Makefile)
http://zeus.cs.pacificu.edu/chadd/cs480s13/Lectures/makefile.html

Create Make Targets (all, CS480_simple, clean)
Build executable (click clean, click all)

Run executable
Run Debugger

▸ Check into SVN
    Team | Share Project
    svn+ssh://zeus.cs.pacificu.edu/home/***login***/SVNROOT_CS480
STOP HERE BEFORE WEDNESDAY.

▸ Import an existing project

Download http://zeus.cs.pacificu.edu/chadd/cs480s13/Lectures/CS480_Lab.tar.gz

Open a terminal (Lizard | Applications | System | Terminal | Terminal Program (Konsole)). Terminal may also be listed in your *Favorites* in the start menu.

Note: You can right click on the Terminal Program icon to copy the icon to your desktop

```
login@machine:> cd Downloads
login@machine:> tar zxf CS480_Lab.tar.gz
```

In Eclipse,
File | Import | General | Existing Projects into Workspace
Next
Browse (find Downloads/CS480_Lab)
Copy Projects into workspace

Finish

Open the project.

Project | Clean

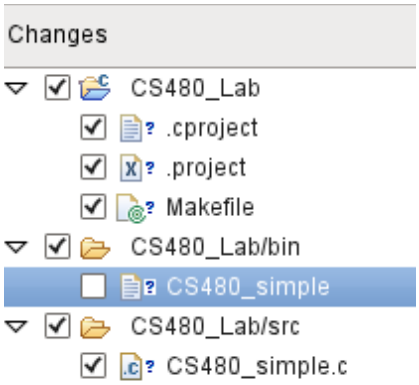
Project | Build All

▸ Check into SVN

Right Click CS480_Lab Project | Team | Share Project
svn+ssh://zeus.cs.pacificu.edu/home/***login***/SVNROOT_CS480

Right Click CS480_Lab Project | Team | Commit

Select the following files. Do not commit the executable or .o files.



▸ Run make from command line

```
login@machine:> cd ~/workspace/CS480_Lab
login@machine:> ls -al
login@machine:> gmake
login@machine:> gmake clean
login@machine:> gmake
login@machine:> cd bin
login@machine:> ./CS480_simple
login@machine:> cd ..
login@machine:> bin/CS480_simple
```

▸ Capture Output to a File

```
login@machine:> bin/CS480_simple > simple.out
login@machine:> cat simple.out
login@machine:> cat simple.out | more
login@machine:> less simple.out
login@machine:> diff -Bwa src/CS480_simple.c simple.out
```

Download http://zeus.cs.pacificu.edu/chadd/cs480s13/Lectures/simple2.out to the root directory of the project.

```
login@machine:> diff -Bwa simple.out simple2.out
```

▸ Running Valgrind

```
login@machine:> valgrind -v --leak-check=yes bin/CS480_simple
```

Look for “Invalid read” or “Invalid write”
Look through the LEAK SUMMARY

Fix the code!

▸ Running Valgrind from Make

Edit the Makefile to add a **run_valgrind** make target that will run the above command.
Add a make target to Eclipse
Run valgrind by clicking the make target

▸ Printing from Eclipse

Window | Preferences | General | Appearance | Colors and Fonts | C/C++ | Editor

Use size **Courier 10 Pitch size 8** font to print.
(Don't print anything right now).

▸ Commit to Subversion

Commit the fix from your Valgrind work above and your changes to the Makefile.

Right click the project **`CS480_Lab`** | Team | Commit

Select the appropriate files
    do not commit .o or executable files.
    Do commit .cproject and .project files!

Give a meaningful commit message. Select OK.

Make a second change:

Make a change to **`CS480_simple.c`**
    Change printer("GOODBYE WORLD"); to printer("GOODBYE CRUEL WORLD!");

Save file
Rebuild
Run

Right click **`CS480_simple.c`**| Team | Commit

Give meaningful commit message. Select OK.

▸ Pull the project out of Subversion a second time

After this you will have two projects visible in Eclipse.

File | Import | SVN | Checkout Projects from SVN | NEXT

Use existing repository location: NEXT

Select Project (`CS480_Lab`) | NEXT

Project Name (**`CS480_Lab2`**) | FINISH

Build
Run

▸ Commit a simple, non-conflicting change to Subversion

In **`CS480_Lab`** edit CS480_simple.c
    add printer("New Commit!");

Commit

In **`CS480_Lab2`**, right click **`CS480_simple.c`** | Team | Update to HEAD

You should see your newest change.

▸ Induce a Merge Conflict!

In **CS480_Lab2**, edit **CS480_simple.c**
Change printer("GOODBYE CRUEL WORLD!"); to printer("SEE YA LATER!");

Save file
Commit

In **CS480_Lab**, edit **CS480_simple.c**
Change printer("GOODBYE CRUEL WORLD!"); to printer("BYE BYE");

Save file
Commit – should give conflict!

Right Click on **CS480_simple.c (in CS480_simple)** | Team | Update to HEAD

Look for <<< ==== >>>>
Fix the code (remove the SEE YA LATER! line)
Right Click **CS480_simple.c** | Team | Mark Resolved
Choose "Conflicts have been resolved in the file." OK
Now commit the fixed file!

Go back to CS480_Lab2
Right click **CS480_simple.c** | Team | Update to HEAD

▸ Close CS480_Lab2

Right click the project CS480_simple2 | Close Project

▸ View Revision History

Right click the project **CS480_Lab** | Team | Show history

This shows the Revision number, date, author, comment and list of affected files.

▸ Compare to previous version

In **CS480_Lab**, right click **CS480_simple.c** | Compare with | Revision

Double click revision you want to view
Workspace file: file on your computer
Repository file: file in SVN

You can navigate the changes (previous/next)
You can **copy** individual differences from SVN to the current version (the icon with the left pointing arrows in the **C Compare Viewer** Pane).

▸ Revert to previous version

In **`CS480_Lab`**, right click **`CS480_simple.c`** | Replace with | Revision

Double click the earliest revision

Right click the earliest revision line in the Structure Compare Pane.

> **Get Contents** puts the contents of the selected revision into the current workspace file **(this is most often what you want to do)**
>
> **Get Revision** puts the contents of the selected revision into the current workspace file *and* sets the revision of the current workspace file back to the selected revision.

Get Contents for the earliest revision. Look at CS480_simple.c to see that the local file has reverted back to the first revision.

Commit this change to SVN.

▸ Build a testing script

Add a directory at the root of **CS480_Lab** named: tests

Add a file in tests: testSimple.sh
Close testSimple.sh if it pops open outside of Eclipse.
Right click file testSimple.sh: **Open With | Text Editor**

Copy text from http://zeus.cs.pacificu.edu/chadd/cs480s11/Lectures/testSimple.sh.html
Right click testSimple.sh: **Properties | Resource |** Select **Execute** for **Owner**
Apply | OK

▸ Run a testing script from the command line

```
login@machine:> cd tests
login@machine:> ./testSimple.sh
```

▸ Run a testing script from inside Eclipse

Add an External Tools Run Configuration

Run | External Tools | External Tools Configurations
Double click Program to make a new configuration
Name: testSimple.sh
Location: (Browse Workspace | tests/testSimple.sh)
Working Directory: (Browse Workspace | CS480_Simple/tests)
Apply | Run

To run the script again:

Click down arrow near External Tools icon (white arrow in green circle with red tool box)
testSimple.sh

Commit the test script and tests directory to subversion.

▸ Test on Zeus

```
login@machine:> ssh zeus
login@zeus:> svn co svn+ssh://zeus/home/login/SVNROOT/CS480_Lab CS480_Lab
login@zeus:> cd CS480_Lab
login@zeus:> gmake clean
login@zeus:> gmake
login@zeus:> bin/CS480_simple
login@zeus:> cd tests
login@zeus:> ./testSimple.sh
```