Eclipse
Quick Review

- scp 02piF14.c from /home/CS300Public/2014 to the directory Documents/CS300 on your machine
- Rename 02piF14.c to 02piPUNetID.c (use your punetid)
- From the command line, compile your program
  gcc -Wall -g -o 02piPUNetID 02piPUNetID.c
- Execute your program
  ./02piPUNetID
- Create a tarball
  tar czf 02piPUNetID.tar.gz 02piPUNetID.c
- scp the tarball to your directory Documents/CS300 on zeus
- Go to zeus and extract the tarball
  tar xzf 02piPUNetID.tar.gz
- Compile and run the program to make sure it still works
- Submit your tarball
  submit cs300f14 02piPUNetID.tar.gz
Eclipse 4.4 Luna

- Integrated Development Environment (IDE)
- Has a plugin architecture to add features
  - support for C development is via a plugin, CDT
  - http://www.eclipse.org/cdt/
- Can use the gcc compiler and gdb debugger
- Requires a Java Runtime Environment
- http://www.eclipse.org/downloads
  - Eclipse IDE for C/C++ Developers
DANGER!

- Does Eclipse run on Windows?
  - Yes

- Can I write C code on Windows?
  - Yes, with the Cygwin suite installed

- Can I write C code on Windows for this class?
  - No
Start Eclipse

Select a workspace
Eclipse stores your projects in a folder called a workspace. Choose a workspace folder to use for this session.

Workspace: /home/ryand/workspace/SVNCS300REPOS

Use this as the default and do not ask again
Select the perspective for coding

Make sure the perspective is C/C++ not Java
Create a new **HelloWorld** project

- File → New → C Project

- Makefile Project → Empty Project → Linux GCC

- Name it “HelloWorld”

- Then click Next

- Then click Finish
A HelloWorld project

Expand helloworld and see that no source file exists
Create helloworld.c

- In HelloWorld project:
  - Create a folder called **src**
  - Create a folder called **bin**
  - Create a folder called **include**
  - Then create a new Source File called **helloworld.c** in the sources folder

- Type in the following:

```c
#include <stdio.h>

int main (void)
{
    printf ("Hello World\n");
    return 0;
}
```
```c
#include <stdio.h>

int main (void)
{
    printf ("Hello world\n");
    return 0;
}
```
Create a Makefile

- You need to create a file called Makefile in the helloworld folder. A Makefile specifies rules of how the executable is to be created.
- Right Click HelloWorld → New → File
- Call the file Makefile
- The makefile text must be (a single tab character precedes gcc):

```
all: bin/helloworld

bin/helloworld: src/helloworld.c
    gcc -o bin/helloworld src/helloworld.c
```
Makefile created
How to build your project?

Click on HelloWorld, then Project → Build Project
How to run your program?

Right click on helloworld and Run As → Local C/C++ Application.
Choose gdb/mi if given the option.
Run versus Debug

Debug  Run
Printing

- Window | Preferences
  - General | Appearance | Colors and Fonts
  - C/C++ | Editor | C/C++ Editor Text Font
  - Edit Default … | Use Courier 10 Pitch, Size 8

- This changes the font on the screen!
  - You may want to change back after printing

- Print doubled sided!
Coding Standards

- Copy the CodingStandardsProfile CS300PrefsF14.xml from the CS 300Public/2014 directory on zeus
  - Sets tabs, newlines, spacing to match the coding standards
  - Does not fix everything!
- Window | Preferences | C/C++ | Code Style | Formatter | Import
  - Select the CS300PrefsF14.xml file
- Open your .c file, then do one of the following:
  - Source | Format
  - Shift+Control+F
Add Make Target

- Open Makefile
- Open Make Target panel
  - Window | Show View | Make Target
- New Make Target
  - type name of existing target in the Makefile

This is just for your convenience.
Helpful Commands

- **F3 while cursor on function call**
  - go to that function

- **Control-L**
  - go to line

- **Control-A**
  - select all

- **Control-I**
  - correct indentation

Be sure to look through the Source and Navigate menu!
Other tips

- **Window | Preferences**
  - search for template to setup .c and .h file templates
    - you can add the file comment header automatically!
  - search for margin
    - set the print margin column to 80!
  - search for name style
    - to set naming conventions
  - search for code analysis
    - setup error/warnings in code style