Eclipse
Quick Review

- scp piF17.c from /home/CS300Public/2017 to the CS300 directory on your local machine.

- Rename piF17.c to piPUNetID.c (use YOUR punetid).
  
  mv piF17.c PUNetID.c

- From the command line, compile your program:
  
  gcc piPUNetID.c

- Execute your program:
  
  ./a.out

- Create a tarball:
  
  tar czf piPUNetID.tar.gz piPUNetID.c

- scp the tarball to your directory Documents/CS300 on zeus:
  
  scp piPUNetID.tar.gz PUNetID@zeus.cs.pacificu.edu:~/Documents/CS300

- Go to zeus and extract the tarball:
  
  tar xzf piPUNetID.tar.gz

- Compile and run the program to make sure it still works.

- Submit your tarball:
  
  submit cs300f17 piPUNetID.tar.gz
Eclipse

- 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
DANGERS!

- 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/shereen/workspace

Copy Settings

Cancel OK
Select the perspective for coding

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

- File → New → C Project
- Executable → Hello World ANSI C Project → Linux GCC
- Name it “HelloWorld”
- Then click Next
- Then click Finish
A HelloWorld project

```c
#include <stdio.h>
#include <stdlib.h>

int main(void) {
    puts("!!!Hello World!!!"); /* prints !!!Hello World!!! */
    return EXIT_SUCCESS;
}
```
How to build your project?

Click on HelloWorld, then Project → Build Project
Right click on HelloWorld and Run As → Local C/C++ Application. Choose gdb/mi if given the option.
Run versus Debug

![Image of a development environment toolbar with options for Build, Debug, and Run]
Create helloworld.c

- In HelloWorld project:
  - Build and Run the project
  - Open the file examstats.c from last time
  - Replace the contents of HelloWorld.c with examstats.c
  - Rename HelloWorld.c to examstats.c
  - Rename the project HelloWorld to ExamStats
  - Clean and Rebuild the project
  - Run your program

- Let’s look at the code and use the debugger
Coding Standards

- Copy the CodingStandardsProfile CS300PrefsF17.xml from the CS 300Public/2017 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 CS300PrefsF17.xml file

- **C/C++ | Code Style | Formatter | Edit**
  - Maximum line width 75 (leaving 5 for output of line #’s)

- Open your .c file, then do one of the following:
  - Source | Format
  - Shift+Control+F
Printing

- Window | Preferences
  - General | Appearance | Colors and Fonts
  - C/C++ | Editor
  - Edit Default … | Use Courier 10 Pitch Regular

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

- Print doubled sided!
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 75!
  - search for name style
    - to set naming conventions
  - search for code analysis
    - setup error/warnings in code style