

# Linux Users Group

UT Arlington

How to compile C/C++ programs on Linux.

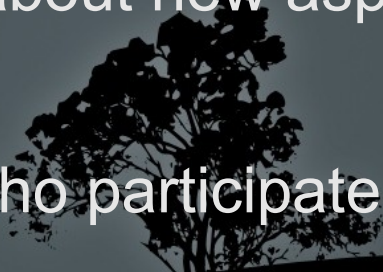


# Agenda

- About our organization
- Writing C/C++ programs on Linux
  - The GNU compiler collection
  - Working with the vi editor
  - Using Makefiles to automate the build



# About LUG@UTA

- The Linux user group is an officially recognized student organization at UTA.
  - The goals of the Linux user group are to:
    - promote the use of the Linux operating system and other open source software.
    - provide a venue for students to gain experience giving technical presentations.
    - provide a forum for students to learn about new aspects of Linux and open source software.
    - promote fellowship among students who participate in the group.
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# Why join?

- Expand your knowledge – past topics include using LaTeX, using GPG, geeky stuff
- Meet new people
- Build leadership skills – we have many unclaimed officer positions right now



# LUG@UTA Roster

- President – Martin Dickson
- Secretary – Sean Pierce
- Vice-President – Rohit Rawat
- Treasurer – David Miller
- Adviser – Dr W. Alan Davis



# More information

- [LUGUTA@LISTSERV.UTA.EDU](mailto:LUGUTA@LISTSERV.UTA.EDU)
- <http://lug.frop.net/>
- MavOrgs – search for LUGUTA



# gcc / g++

- gcc inputfile.c
- g++ inputfile.cpp
- Default executable name 'a.out'
- To run:  
./a.out





# Common gcc options

- -o outputfile (give an alternate name for a.out)
- -c (compiles only, doesn't link)
- -o3 (optimization level)
- -g (add debugging information)
- -Wall (displays all warnings)






# Common gcc options

- -I includepath (add a new location to look for include files)
- -L librarypath (add a location to search for libraries)
- -l libname (link against that library, e.g. -lboost\_system)



# The vi editor

- To each his own
  - Launch: vi filename
  - 'i' enters insert mode at cursor.
  - 'Esc' key enters command mode, when in doubt hit it twice
  - ':w' writes the file to disk
  - ':q' quits, ':q!' quits without saving changes
  - ':wq' saves then quits
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# Some commands I use

- '/' search
- 'a' insert after current character
- 'A' insert at end of line
- 'I' insert at beginning of line
- 'o' insert in a new line below
- 'dd'/'yy' delete or copy the current line
- 'p' paste
- 'cw' change word



# Makefiles

- A project with mutiple source files:  

```
g++ file1.cpp file2.cpp -o result
```
- Can get unmanageable for a bigger project.
- 'make' utility – looks for a file 'Makefile' for build instructions
- Format:  

```
target: prerequisites  
[tab] commands
```



# make targets

- Default target, first in file
- You can always specify one by name
  - make counter
    - Will search for and build the target 'counter'
- 'clean' is a commonly used target to delete build outputs

