C Primer #1

Thursday, Sept. 8th, 2016

UNIVERSITY OF MINNESOTA

Driven to Discover℠

Administrative (1/2)

- Class Moodle Site
  - https://ay16.moodle.umn.edu/course/view.php?id=6052
- Office Hour / Contact Information
- CSE Lab account
  - Use your X500 username and password
  - Contact operator@cselabs.umn.edu for any problems
- Accessing CSE machines
  - Windows: Putty
  - Unix(Linux + Mac): regular terminal

Administrative (2/2)

- SSH (Secure Shell)
  - ssh <username>@<machine_name>
    - ssh randy@kh2170-01.cselabs.umn.edu
    - *ssh -X randy@kh2170-01.cselabs.umn.edu*
- SCP (inter-domain copying)
  - *scp main.c randy@kh2170-01.cselabs.umn.edu:~/main.c (copy main.c from current local directory TO remote account's home directory)*

Other Useful Linux Commands

- cd : change directory
- ls : list files in the directory
- mkdir : create a new directory
- mv : rename a file or a directory
- rm –rf : delete a file or a directory

Writing a C program

- 1. Write the program using a text editor (not word processor) of your choice (emacs, vim, vi, pico, gedit, etc...)
- 2. Save your file with a .c extension.

  e.g. helloworld.c
- 3. Compile your program:

  % gcc -Wall -o helloworld helloworld.c
- 4. Run your program and see if it works:

  % ./helloworld

Hello World

- String
- header/include
- structure

Function and Statement

- CalculateMin.c

I/O in C

- scanf()
  - We'll cover more on address operators and pointers next time.
- Data types in c
- getInput.c

Data types

Data types in C	Size: 32 bit machine (bytes)	Size: 64 bit machine (bytes)
char	1	1
short int	2	2
int	4	4
long	4	8
long long	8	8
float	4	4
double	8	8
long double	12	16

Data types – Format Strings

Datatype	Format string
char	%c
int	%i, %d
unsigned int	%u
unsigned int (hex)	%x
unsigned int (octal)	%o
float	%f
double	%g
double (scientific)	%e
string (null-terminated)	%s
pointer (hex)	%p