

Intro to Programming

COEN 10

Lecture 1

Overview

★Administrative Info

★Introduction

◎What is this course about?

◎Environment

Administrative Info

★Classes: M/W/F at 10:30am

★Lab: W/W/Th/Th

★Office Hours: T/Th, 11am-12pm

★TA

◎several TAs

★<http://www.cse.scu.edu/~sfigueira>

◎lecture notes

◎bulletin board

◎reading information

Administrative Info

★Grade

◎final (30%)

◎2 midterms (30%)

◎quizzes (20%)

◎labs (20%)

◊10 labs -- 10% each

◊late submissions - penalty

◊No grade after 2 weeks

Administrative Info

★Homeworks

- ◎help for exams
- ◎not mandatory
- ◎do not count for final grade

Administrative Info

★Tests every Friday

- ◎Quizzes - weeks 2, 3, 5, 6, 8, 9
- ◎Midterms - weeks 4, 7

Administrative Info

★Lab projects

- ◎mandatory
- ◎individual
- ◎require demo

★Environment

- ◎Unix -- OS X
- ◎HTML/PHP
- ◎C

Administrative Info

★Integrity

- ◎It is ok to help other students
- ◎It is absolutely not ok to share code
- ◎It is absolutely not ok to post course materials or exams

Administrative Info

- ★ Text books
 - ◎ C Primer Plus
Stephen Prata
- ★ Other books
 - ◎ A Web-Based Introduction to Programming
Mike O'kane
 - ◎ The C Programming Language
Kernighan and Ritchie, 2nd Edition,
Prentice Hall, 1989.
 - ◎ Practical C Programming
Steve Oualline

What is this course all about?

- ★ Learn how to program
- ★ Learn basic data structures
- ★ Learn basic coding techniques
- ★ Start with web programming
 - ◎ html/php
- ★ Learn computer programming
 - ◎ C language

Environment -- Unix

- ★ Machine -- Mac
- ★ Operating System -- OS X
 - ◎ Interface -- command line
 - ◎ Editor -- vi

Environment

- ★ Command line
 - ◎ OS X terminal
 - ❖ Typing instead of clicking



Environment

★Command line

◎Using your own computer

- ◊ Mac - Terminal
- ◊ Windows
 - Prompt window
 - cygwin -- <http://cygwin.com/>
 - PuTTY

Environment

★Command line

◎From your computer's terminal

- ◊ Remote login to the DC
 - ssh -l uname mac.dc.engr.scu.edu
 - ssh -l uname linux.scudc.scu.edu

Environment

★Shell

◎Interface between the user and the operating system

◎Accept commands from the command line and execute scripts

Files and Directories

★Directory hierarchy

◎Files are organized in a hierarchical structure

◎The user can traverse the hierarchy with absolute or relative paths

★Special directories

◎Home directory

- ◊ The directory into which you login

◎Working directory

- ◊ The directory from which the user is executing a program

Shell Commands

- ★ Create a directory
 - ◎ `mkdir coen10`
- ★ Move into the directory
 - ◎ `cd coen10`
- ★ Move back up
 - ◎ `cd ..`
- ★ Show current directory
 - ◎ `pwd`

Shell Commands

- ★ List directory contents
 - ◎ `ls [dir1 dir2 ...]`
- ★ Look at the contents of files
 - ◎ `cat file1 [file2 file3 ...]`

Shell Commands

- ★ Copy a file to another file
 - ◎ `cp file1 file2`
- ★ Copy file(s) somewhere else
 - ◎ `cp file1 [file2 file3 ...] dir`

Shell Commands

- ★ Change the name of a file
 - ◎ `mv file1 file2`
- ★ Move file(s) somewhere else
 - ◎ `mv file1 [file2 file3 ...] dir`

Shell Commands

★ Remove files

◎ `rm file1 [file2 file3 ...]`

★ Remove empty directories

◎ `rmdir dir1 [dir2 dir3 ...]`

★ Info on commands

◎ `man <cmd>`

Shell Commands

★ Edit a file with vi

◎ `vi filename` 

vi

★ The programmer's favorite editor!!

★ 2 modes: viewing and inserting

◎ Initially in viewing mode

vi

★ Some commands

◎ To change to insert mode:

- ❖ `i` - inserts at the spot
- ❖ `a` - inserts in the next spot
- ❖ `o` - opens a line below for insertion
- ❖ `O` - opens a line above for insertion

◎ To change to viewing mode

❖ `esc`

vi - Viewing Mode

★Traversing the text

- ◎^f - next page
- ◎^b - previous page
- ◎^u - up half page
- ◎^d - down half page

vi - Viewing Mode

★Moving the cursor

- ◎<return>
 - ❖Next line
- ◎<dash>
 - ❖Previous line

vi - Viewing Mode

★Moving the cursor

- ◎<space>
 - ❖moves the cursor to the right
- ◎<delete> or <backspace>
 - ❖moves the cursor to the left

vi - Viewing Mode

★Moving the cursor

- ◎h, j, k, l - or arrows
 - ❖move the cursor to the left, down, up, and right, respectively

vi - Viewing Mode

★ Deleting and copying (based on the cursor position)

- ◎x - deletes this character
- ◎dw - deletes this string
- ◎dd - deletes this line
- ◎yy - copies this line
- ◎yw - copies this string
- ◎p - pastes the text copied or deleted

vi - Viewing Mode

★ Replacing (based on the cursor position)

- ◎r<ch>
- ◎replaces this character by <ch>
- ◎s<str><esc>
- ◎substitutes this character by <str>
- ◎cw<str><esc>
- ◎changes this string by <str>

vi - Viewing Mode

☞ Saving and quitting

- ◎:w - saves
- ◎:q - quits
- ◎:wq - saves and quits
- ◎:q! - quits without saving

vi - Viewing Mode

★ Searching

- ◎/<str><return> - searches for <str>
- ◎n - finds the next

vi - Viewing Mode

★Helpful! 

◎*u* - undo

◎period - repeats the last command

◎A number before some commands determines repetition of the command

vi

★More on the COEN 10 webpage!