

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 file2 ...]`

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!