Class days, times, building, and room number:

For class, tutorial, and laboratory schedules, see the Summer Schedule of Classes.

Instructor

Dr. Kamran Eftekhari
mailto:eftekharikamran@fhda.edu
Office Hours: TH 5:00-6:00

Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Computer Information Systems 10.

Four hours lecture, one and one-half hours laboratory (66 hours total per quarter).

Course description

Introduction to the features of the UNIX/LINUX operating system including text editing, text file manipulation, electronic mail, Internet utilities, directory structures, input/output handling, and shell features.

Student Learning Outcome Statements (SLO)

Use the Unix/Linux Operating System utilities and shell features for basic file manipulation, networking, and communication.

Suggested texts and readings

A Practical Guide to Linux Commands, Editors, and Shell Programming, Mark G. Sobell

ISBN-10: 013308504X • ISBN-13: 9780133085044

Evaluation structure

Lab 70% of the grade Midterm 15% of the grade   Final   15% of the grade

Expectations of the course

You are responsible for completing all work assigned in this class in a timely fashion.
You do not have to contact me with a reason of absence.
You should be enrolled in the class at De Anza College for getting course access and to attend the class.

Withdrawing

Once you are added to the class it is your responsibility to withdraw. I will not drop you from the class. The earned grade will be assigned at the end of the quarter.

Academic Dishonesty

You are encouraged to discuss the ideas presented in the class. Copying or Cheating of work will result in zero grade for that assignment and may result in a failing grade. Basically I cannot tolerate cheating. You must work your solutions independently and all assignments and tests should be your own original work NO MAKEUP TESTS WILL BE GIVEN. You must pass the final to get a passing grade in this class.

Course Objectives

A. Edit text using the vi editor
B. Maintain file and directory system
C. Establish security and file permission
D. Utilize the shells
E. Perform basic file maintenance and use information utilities
F. Run shell commands
G. Implement quoting rules
H. Communicate with email and communication utilities
I. Apply filters
J. Use networking utilities
K. Implement basic regular expression

Essential Student Materials

None

Essential College Facilities

Access to a computer running the UNIX / LINUX operating system

Expanded Description: Content and Form

A. Edit text using the vi editor
1. Basic data input and editing
2. Text and command mode

3. Editing and file manipulation
4. Local, range, and global commands
5. Handling text objects
6. Cutting, pasting, and deleting
B. Maintain file and directory system
1. File names and wild cards
2. File types
3. Regular files (text and binary)
4. Directories (special directories, path and pathnames, relative pathnames, absolute pathnames)
5. File system implementation (file system structure, inodes, hard and soft links)
6. Operations applied only to directories (pwd, ls, mkdir, cd, and rmdir)
7. Operations applied only to regular files (more, lpr)
8. Operations applied to both directories and regular files (cp, mv, ln, rm, find)
C. Establish security and file permission
1. Users and groups
2. Security levels
3. /etc/passwd file
4. Permissions for files and directories
5. Changing permission (symbolic and octal)
6. User masks
7. Changing ownership and group
D. Utilize the shells
1. Job control
2. Aliases
3. Variables
4. Shell/environment customization
E. Perform basic file maintenance and use information utilities
1. History
2. Types of UNIX / LINUX systems available
3. Hardware platforms running UNIX / LINUX
4. Logging in/out
5. Basic attributes of UNIX / LINUX commands and filenames
6. Commands such as date, cal, who, passwd, echo, and man
7. Script command
F. Run shell commands
1. Standard files
2. Redirection (input, output, and error)
3. Pipes and Tee command
4. Command execution (sequence commands, group commands, chained commands)
5. Command line editing and history files
G. Implement quoting rules
1. Quotes (backslash, single quote, double quote)
2. Command substitution
H. Communicate with email and communication utilities
1. talk

2. write
3. email
I. Apply filters
1. Concept
2. cat, head, and tail commands
3. cut and paste commands
4. sort command including multiple-field and multiple-pass sorting
5. tr, unique, and wc commands
J. Use networking utilities
1. telnet
2. ftp
K. Implement basic regular expression
1. Atoms (single character, dot, class, anchor)
2. Operators (sequence, alternation, repetition, group)

Assignments

A. Reading in text
B. 5-7 homework assignments to be done on a Unix/Linux system

VII. Methods of Instruction

Lecture and visual aids
Discussion of assigned reading
Discussion and problem solving performed in class
Quiz and examination review performed in class
Collaborative learning and small group exercises
Laboratory discussion sessions and quizzes that evaluate the proceedings weekly laboratory exercises
Homework and extended projects

Methods of Evaluating Objectives

A. Evaluation of assignments for completeness and correctness
B. Exams and quizzes
C. Comprehensive final exam

Lab Topics

A. Use basic utilities to explore system data, user data, and common tasks: exit, passwd, who, whoami, finger, w, tty, stty, uname, clear, man, lpr, script, bc, date, cal, echo, exit
B. Observe the different file types; explore filename conventions and use wildcards; use utilities that manipulate regular files: cat, more, less, ls, touch, cp, mv, rm

C. Use the vi editor to edit text files with basic commands to move to a certain place in the file, add, delete, search, replace, substitute, copy and paste, cut and paste, bring in another file, save to another file, undo redo, save, quit

D. Work with the directory tree and path name conventioni; use utilities that work with directories: pwd, cd, mkdir, rmdir, which, whereis, find

E. Investigate the concept of links and types of links; create links to regular files and directories; explore inodes

F. Communicate with other users using write and talk; send and receive mail, including reply, forward, save functions; work across the network using ssh and sftp

G. Demonstrate the levels of permission (ugo) and the types of permission (rwx); set file permission; explore the effects of different types of permissions; changing the permission mask

H. Using features of the shell: redirection, tee, pipe, running commands one one command line, command grouping, command substitution, quoting rules, job control, variables, environment variables, aliases, command history; explore the major types of shell

I. Use filters to produce a required output: more, less, head, tail, cut, paste, wc, uniq, diff, comp, sort, egrep

J. Use basic regular expressions for pattern matching: atoms, anchors, operators