CIS 2107

Computer Systems and Low-Level Programming

**Chapter 1: Introduction to Unix**

Class note: 01/20/23

1. how many operating systems are there has be published?

2. What is the difference between directory in unix and folder in windows?

What is Unix?

* Unix is an operating system.
  + Sits between the hardware and the user/application.

Linux:

* A “Unix like” operation system: user-level interface very similar to unix.

Diagram

Description automatically generated

Applications can access the Unix operating system kernel directly. [Note]

# The file system:

* Unix provides files and directories.
* A directory is like a folder: it contains pieces of paper, or files.

A path could refer to either a directory or a filename.

Diagram

Description automatically generated

# Referring to files: Absolute Paths vs Relative Paths

Diagram

Description automatically generated

* An absolute path specifies how to get to a file starting at the file **system root**.
  + e.g: /dd/ee/gg
* A relative path specifie show to get to a file starting from the **current directory**.
  + “..” means “move up one level”
  + ‘.’ means current directory
  + list the directories on the path separated by “/”
    - e.g: ff relative to ee is: ../ff
    - e.g: cc relative to ee is: ../../cc

# Shell

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# Commands

% man: Manual Pages

* E.g. man man – shows the manual of it self

% which: display a path name of a command

* Eg. % which bash
* Eg. % which tcsh

% chsh: Change Login Shell

% echo $SHELL: shows which shell you are using.

% whereis: Display all locations of a command (or some other binary, man page, or a source file)

# General Commands

% passwd: change password.

% date: Display the date

* Eg. % date -u in GMT
* fuadhassan@Fuads-MBP ~ % date

Mon Jan 23 20:01:39 EST 2023

% cal: Calender

* fuadhassan@Fuads-MBP ~ % cal 7 2002

July 2002

Su Mo Tu We Th Fr Sa

1 2 3 4 5 6

7 8 9 10 11 12 13

14 15 16 17 18 19 20

21 22 23 24 25 26 27

28 29 30 31

Command Grouping: % (date; cal) > out.txt

% alias: Defined a new name for a command

* % alias new command old command
* defines a newcommand
* % alias cal2015 ca: l 2015

% unalias: Removes alias

* Requires an argument.
* % unalias cal2015

%