CSE 3320 10.2.2019

Notes for Assignment 2 :

- Try Importing from Excel
  - Insertion Sort
  - Filter
  - A2I
    - Changing to Float

Unix:

- Multix came before Unix (high cost with Multix)
  - Threw away complicated in Multix
- Started with ATT Unix (small, and simple)
    - LINUX
    - Minix
    - Android
      - Share some compatability
  - BCD
  - System 1 to 4
  - CPM

Process

- Shell (optional), to run
  - Fork()
    - Original Shell
    - Clone Shell
      - Executible (replace)
  - Process scheduling
    - First come first serve
    - Importance
    - Priorities

Files

- Files vs Directories
  - Directory:
    - Size
    - Location/Pointer
    - Name of the file
    - Ls/ls-l: dumping contents in memory (UNIX)
      - Creating
      - Multiplication

        - ✓ Easy to sort
    - ✧ User number
    - ✧ Pointer to a block of information
        - ✧ Some unix have variation
            - ■ Directories inside a directory (directory hierarchy)
                - ❖ Slash (Root)
                    - ● Bin
                    - ● Util
                    - ● User
                        - ■ Sub directories
                            - ◆ Sub directories
                            - ◆ Access with permission, linking/copying
                            - ◆ To accrss subdirectory (permission to link): in a file block in the subdirectory pointer to the designated file (linking): link (dest file block name)←(file block name) **Exclusivve for UNIX**
                            - ◆ by ../(sub directory name)/(file block name): with restrictions
                            - ◆ <u>Permission</u>: file, dir (upon set up), can change to chmod (change permission to give access to certain file, directory, or exe)
        - ❖ Each index number points to a block (12 pointers)
            - ✓ When pointing to large block, points to the last pointer and to the other (1 level redirect)
            - ✓ May add additional level of in/re-direct if not enough
            - ✓ Common case faster
            - ✓ <u>Read (r), Write (w), execute (x)</u>

Real advantage in the hierarchy (linking and permission/copying).

Multiple Cores to use:

- Program review
    - ➢ Fork and exec (new process and thread)
    - ➢ To expand SMP, use Switch
        - ✧ Clusters
            - ❖ May have multiple switches
        - ✧ Grid connects clusters and came with the name between the managers
            - ❖ Naming, existancce and shaaring with other clusters
            - ❖ OSG (open science grid)
                - ✓ Science
                - ✓ Physics
                - ✓ Etc…
            - ❖ Super Grid
            - ❖ Etc…

- ❖ Can convert between cloud/cluster/grid (Cloud Computing)
- ❖ Take cores and divide to instances
  - ✓ Virtualized layer (not HW), can provide a lot or little resources (as minimum as web services/database to…)
  - ✓ Depending on the power, instances size vary
    - ◆ Amazon (biggest: XL big medium small tony)
    - ◆ Microsoft
    - ◆ IBM
  - ✓ Instanced (divided CPU)

Could Computing takes over Grid

Memory

When processes are running, start with
Shceduling Algorithm:
(Non preampt or preampt: higher priority/shorter, stop what you do and then go there.)

- FCFS
- Variations/SJF
- Priority
-

Ready
Wait
Run