* Change extension on file:

$$[\# fn = \sim s/. [^.]*\$/.gpx/;]$$

* whatever character follows s is the <u>deliniator</u>!

∴ $\sim s!/\.[^.]*\$!.gpx!;$ is the same

[* Put Perl script for encoding files in Makefile]

[$/^\_+-Wselector$]

* Test: open book/notes/pi (no network)

Commands

· egrep

· wc (word count), words, lines, char

· tail (-5) //last 5 lines of file

· hail (-5) // first " "

· awk '{Print $1}'   // column operator
          └ splits on whitespace and prints first column

· sed   -e   's/ / / '   operate on stream
  (stream editor,   ↑   ↑
  can pipe into)   RE sub

· tar → "tape archive" //linux keeps compression & archiving separate

⇒ gzip is a compression algorithm

⇒ examp.   tar -clzf hw.tar.gz ece331/hw
          └ scp santos
             tar -xpf hw.tar.gz
                      ↑
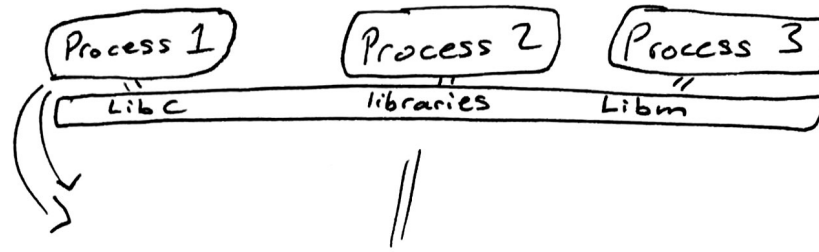   permissions

- file → filetype, based on magic #
- sort → lexical sort (sorts by ASCII)   -n   -r
                                          (#) (reverse)
- diff → compare files
- find → find stuff based on inodes, names, etc.
    ex.) find . -iname '*.txt'   -exe -- ⌣⌣ script
              ↑   ↑ i = case   ⌣
             cd :   insensitive   do something
             subd's   to what
                                      you find
- more

> 120mS = 1 morse time unit

---

grep '^0' runtime data.txt | awk '{print $2}'

* can to pipe into:

    sed -r 's/^.{6}//'   // throwaway first 6 chars
                                    -f
              ↑
           got just seconds now

* can change delimiter to whatever you want

* pipe

    | perl -ne 'chomp; s/$/+/; print;' | sed -e
      's/$/0\n/' | bc -l

    * prints result! (needed newline for bc)

Verify Linux Kernel
    → more Makefile   (4, 4, 38)
    → uname -a   ↙ should match

[while (1) {
      fork();
  }] - do on Max's
         computer

[Process 0]
  (IDLE, waits for interrupt!)

Kernel Driver:

usr space

| Process 1 | Process 2 | Process 3 |

| Lib C | libraries | Libm |

[Process 0 ?]

Caution: kernel code is dangerous

→ stat   #Error Checking!

(well defined) System Calls (POSIX std)
SWI 0x80 (IA32)
(software interrupt for transition to kernel space!)

kernel (you can do anything here) space

Kernels-
monolithic
modular
micro
→ mem. mang.
→ scheduling

(vint. file sys.)

LIB   VFS   DEV DVRS   MM   SCHED   NI

printk()
(goes to log
files!)
⋮

char dev

serial, I2C,
SPI

Memory

which
process
is running

*network

Protocols
TCP/IP/SPX, IPX
ATM

FS
Ext32, VFAT,
ISO
⇓
Block
SCSI, IDE,
SATA

→Don't overwrite
random
locations in
the kernel
space!
(careful - no c
libraries!!)

hardware