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Commands

Command Structure

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- The UNIX system is command-based
- All UNIX commands are single words like ls, cat, who.
- These names are in lower case, if you enter LS instead of ls the shell will provide a message
  bash: LS : command not found
- Commands are essentially files containing programs, mainly written in C.
- These files are stored in directories, for instance, the ls command is a file found in the directory /bin.
- The easiest way of knowing the location of an executable program is to use the type command.
  $ type ls output –> ls is /bin/ls

Locating Commands

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- type command

  $ type ls

  ls is /bin/ls

- When you execute ls command, the shell locates this file in the /bin directory and makes arrangements to execute it.
- Type looks up only the directories specified in the PATH variable.
- PATH variable
- the sequence of directories the shell searches to look for a command is specified in its own PATH variable

  $ echo $PATH

  /bin: /usr/bin :/usr/local/bin :/usr/java/bin: .

Internal & External Commands

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- ls is a program having an independent existence (/bin/ls) hence it is branded as external commands
- commands which are not found anywhere and which are not executed even if they are in one of the directories specified by PATH are called as internal commands.

  $ type echo

- echo is a shell built in
- to execute echo shell wont look in its PATH variable (even if it is there in /bin). Rather it will execute it from its own set of commands

- even though the echo is found in /bin/echo the shell always executes the internal echo command

- Quiz !
- How will you execute the external echo command located in /bin ?

- $ /bin/echo “ hi there !!”

- List of Internal Commands
  - pwd
  - cd
  - umask
  - exit

- List of External Commands
  - ftp
  - telnet
  - Ls
  - cp

$ command [options] [arguments]

$ ls

$ ls –a

ls –l –a

ls –la

ls –la temp1

ls –la temp1 temp2 temp2

- Special type of argument that's mostly used with a '-' sign.
- for instance

  ls –l file

  -l is special argument known as option.
- An option is preceded by minus sign (-)
- Options are also arguments, but given a special name because their list is predetermined.

Arguments

- Unix commands use a filename as argument so the command can take input from the file.
- After all options.
- Can use multiple filenames as options.

```
ls -la file1 file2 file3
cp file1 file2
```

Combining Commands

```
wc file : ls –l file
( wc file ; ls –l file ) > newfile
```

Command on different lines

```
echo “ This is
> a three-line
> Text message”
```

Man : The online help

- Unix offers the online help manual with the ***man*** command
- $ man cp

- man page for cp is displayed on the screen. It presents the first page and pauses . It does this by sending its output to the pager program which displays the contents one page at a time

Different pagers are more or less

- To advance to the next screen press f or spacebar

- To move back press b

Man & its options

man -k

- man with –k option searches the summary database and prints the online description of the command

man -k awk

- Alternatively you can use

  $ apropos awk

man -f

- It emulates the whatis command behavior

  $ man –f ftp

  $ whatis ftp

Unix Manual pages are divided into following sections :

- Section 1 User Commands
- Section 2 System Calls
- Section 3 Subroutines
- Section 4 Devices
- Section 5 File Formats
- Section 6 Games
- Section 7 Miscellaneous
- Section 8 System Administration
- Section 9 Kernel

Ctrl-h	Erases Text
Ctrl-c	Interrupts a command
Ctrl-d	Terminates a login session or a program that expects input from the keyboard
Ctrl-s	Stops Scrolling of screen and locks keyboard
Ctrl-q	Resumes Scrolling of screen and unlocks Keyboard
Ctrl-z	Suspends process and returns a shell prompt

To view the calendar of any specific month or a complete year use the ***cal*** command

Syntax :

cal [[month] year]

Example :

$ cal

$ cal 03 2003

$ cal 2003 | less

(Single argument to the cal command is interpreted as a year)

General Purpose Utilities

date command is used to display current date and time

You can also have the formatted output

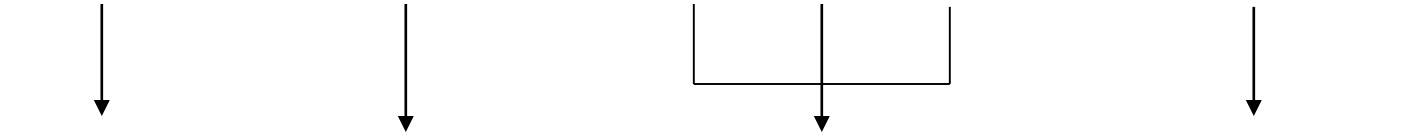
$ date +%m

$ date +%h

$ date +"%h %m"

- ***who***
- Unix maintains an account of all users who are logged on to the system
- $ who

```
root        Console     Aug   1   07:51    (:0)
viraj       pts/9       Aug   1   07:55    (192.168.1.2)
pratham     pts/10      Aug   1   07:56    (192.168.1.3)
```



uname : Machine's Characteristics

uname command is used to display certain features of Operating System

$ uname

SunOS ***Linux shows* Linux**

Release Name of UNIX

$ uname -r

5.8 ***This is SunOS 5.8***

Implementation Name of Unix

$ uname -s

SunOS

Machine Name

$ uname -n

cipher