Command Line Basics 2/2

Linux Essentials
Session-3

CLARUSWAY
WAY TO REINVENT YOURSELF

Command Prompt

User Name

Host Name

Current Directory

user@clarusway-linux: ~/test

File Edit View Search Terminal Help

user@clarusway-linux:~/test$

User Type
$ normal user
# Privileged user

CLARUSWAY
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GUI
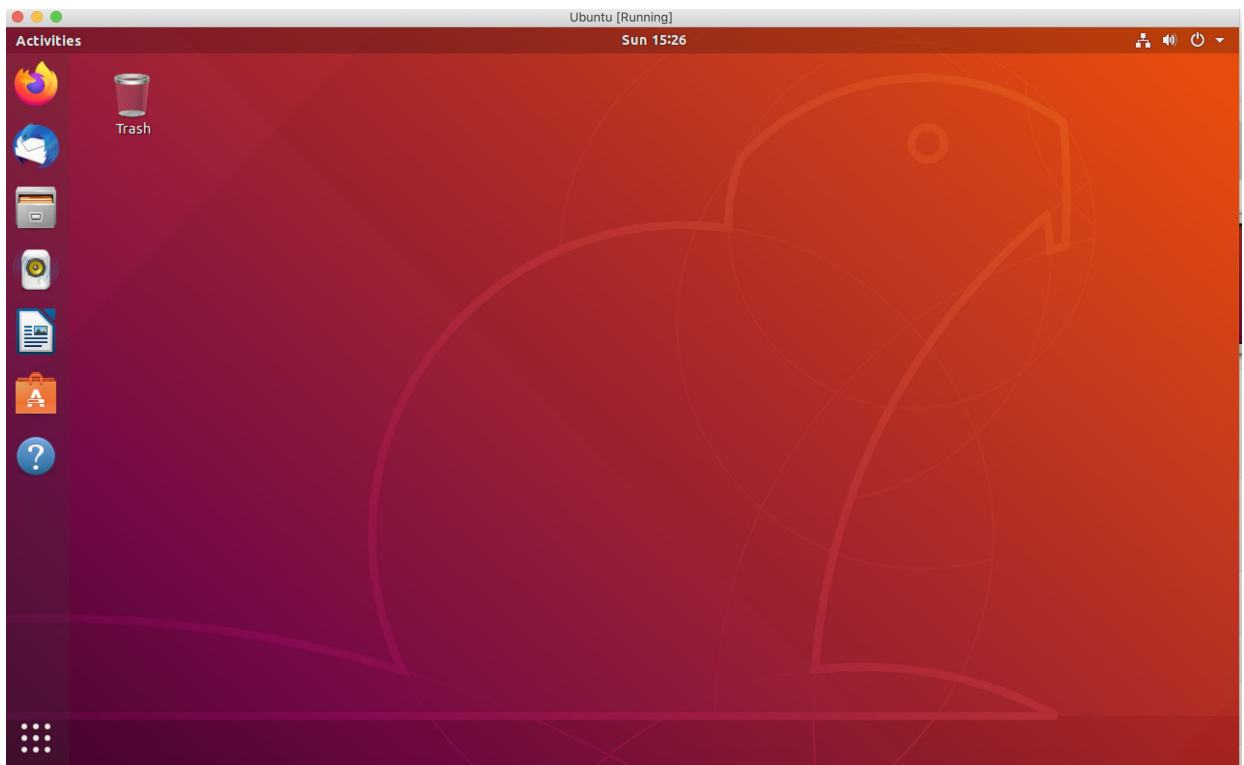
Basic Shell Commands

pwd   show current path

Basic Shell Commands

whoami   current user
hostname   shows the system hostname
hostname -i   Show the IP address of the system


```
robert@robert-virtual-machine:~$ users
robert
robert@robert-virtual-machine:~$ hostname
robert-virtual-machine
robert@robert-virtual-machine:~$ hostname -i
127.0.1.1
robert@robert-virtual-machine:~$
```
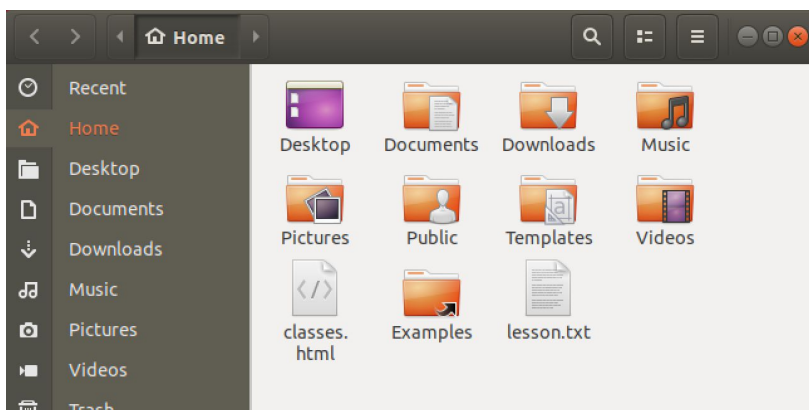
Basic Shell Commands

ls   **lists** directory contents
ls -l   lists directory contents with **details**
ls -al   lists all the contents with **hidden** ones


```
user@clarusway-linux:~$ ls
classes.html   Downloads        Music      Templates
Desktop        examples.desktop Pictures   Videos
Documents      lesson.txt       Public
user@clarusway-linux:~$
```



```
user@clarusway-linux:~$ ls -l
total 48
-rw-r--r-- 1 user user   16 Mar  2 21:56 classes.html
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Desktop
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Documents
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Downloads
-rw-r--r-- 1 user user 8980 Mar  2 21:53 examples.desktop
-rw-r--r-- 1 user user    0 Mar  2 21:55 lesson.txt
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Music
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Pictures
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Public
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Templates
drwxr-xr-x 2 user user 4096 Mar  2 21:54 Videos
user@clarusway-linux:~$
```

Basic Shell Commands

cd [dir]   change (current) directory
cd ..   change current directory to one level up
cd /   change current directory to the root directory
cd ~   change current directory to the home directory

```
user@clarusway-linux:~$ cd test
user@clarusway-linux:~/test$ cd ..
user@clarusway-linux:~$ cd /
user@clarusway-linux:/$ cd ~
user@clarusway-linux:~$
```

Basic Shell Commands

mkdir [dir]   create a new directory

```
user@clarusway-linux:~$ ls
classes.html  Downloads        Music      Templates
Desktop       examples.desktop Pictures   test
Documents     lesson.txt       Public     Videos
user@clarusway-linux:~$ mkdir clarusway
user@clarusway-linux:~$ ls
clarusway     Downloads        Pictures   Videos
classes.html  examples.desktop Public
Desktop       lesson.txt       Templates
Documents     Music            test
user@clarusway-linux:~$
```

Basic Shell Commands

rmdir [dir]   delete an empty directory

Basic Shell Commands

touch   create a file
>
echo   create a file and write string inside
cat >

Basic Shell Commands

rm delete a file

Basic Shell Commands

cp copy a file to another location

Basic Shell Commands

mv move a file to another location
      renaming the file

```
                  user@clarusway-linux: ~/test

 File  Edit  View  Search  Terminal  Help
user@clarusway-linux:~/test$ ls
user@clarusway-linux:~/test$ cd ..
user@clarusway-linux:~$ ls
clarusway      Downloads          Pictures    test-file.txt
classes.html   examples.desktop   Public      Videos
Desktop        lesson.txt         Templates
Documents      Music              test
user@clarusway-linux:~$ mv test-file.txt test/
user@clarusway-linux:~$ ls
clarusway      Downloads          Pictures    Videos
classes.html   examples.desktop   Public
Desktop        lesson.txt         Templates
Documents      Music              test
user@clarusway-linux:~$ cd test
user@clarusway-linux:~/test$ ls
test-file.txt
user@clarusway-linux:~/test$ █
```

Basic Shell Commands
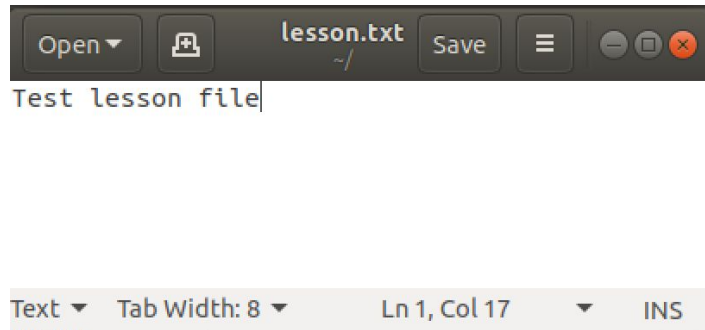
echo   print message to screen
echo > [file] print message into a file

```
                  user@clarusway-linux: ~

 File  Edit  View  Search  Terminal  Help
user@clarusway-linux:~$ echo "test"
test
user@clarusway-linux:~$ cat test-file.txt
user@clarusway-linux:~$ echo "test" > test-file.txt
user@clarusway-linux:~$ cat test-file.txt
test
user@clarusway-linux:~$ █
```
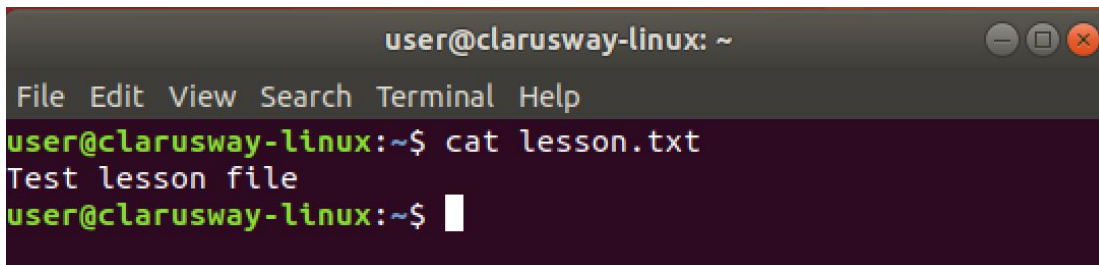
Basic Shell Commands

cat   show file contents
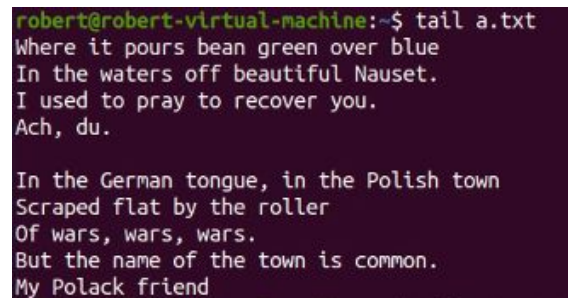
Basic Shell Commands

head   show first 10 lines from file contents
tail   show last 10 lines from file contents

Simple Globbing

Globbing is primarily used to match patterns in filenames or text by using a wildcard character to create a pattern.

Character	Name	Function
?	**Question mark**	**Match any single character**
*	**Asterisk**	**Match any number of character(s)**
[]	Brackets	Match character from a range
^	Caret	Used to match starting character
$	Dollar sign	Used to match ending character
{}	Curly brace	Used to match more than one pattern
|	Pipe	Used for applying more than one condition

Hidden Files and Directories

Any file or directory starts with period (.)
.abc


```
root@DESKTOP-4QQ1S5L:~# ls
root@DESKTOP-4QQ1S5L:~# ls -a
    .bash_history  .bashrc  .profile  .viminfo
root@DESKTOP-4QQ1S5L:~# touch .file5
root@DESKTOP-4QQ1S5L:~# ls -a
    .bash_history  .bashrc  .file5  .profile  .viminfo
root@DESKTOP-4QQ1S5L:~#
```

How to Hide Files And Directories in Linux

Kahoot!

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Basic SHELL Commands

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Basic SHELL Commands

File Commands	
ls – directory listing	
ls -al – formatted listing with hidden files	
cd *dir* - change directory to *dir*	
cd – change to home	
pwd – show current directory	
mkdir *dir* – create a directory *dir*	
rm *file* – delete *file*	
rm -r *dir* – delete directory *dir*	
rm -f *file* – force remove *file*	
rm -rf *dir* – force remove directory *dir* *	
cp *file1 file2* – copy *file1* to *file2*	
cp -r *dir1 dir2* – copy *dir1* to *dir2*; create *dir2* if it doesn't exist	
mv *file1 file2* – rename or move *file1* to *file2* if *file2* is an existing directory, moves *file1* into directory *file2*	
ln -s *file link* – create symbolic link *link* to *file*	
touch *file* – create or update *file*	
cat > *file* – places standard input into *file*	
more *file* – output the contents of *file*	
head *file* – output the first 10 lines of *file*	
tail *file* – output the last 10 lines of *file*	
tail -f *file* – output the contents of *file* as it grows, starting with the last 10 lines	

Process Management	
ps – display your currently active processes	
top – display all running processes	

System Info	
date – show the current date and time	
cal – show this month's calendar	
uptime – show current uptime	
w – display who is online	
whoami – who you are logged in as	
finger *user* – display information about *user*	
uname -a – show kernel information	
cat /proc/cpuinfo – cpu information	
cat /proc/meminfo – memory information	
man *command* – show the manual for *command*	
df – show disk usage	
du – show directory space usage	
free – show memory and swap usage	
whereis *app* – show possible locations of *app*	
which *app* – show which *app* will be run by default	

Compression	
tar cf *file.tar files* – create a tar named *file.tar* containing *files*	
tar xf *file.tar* – extract the files from *file.tar*	
tar czf *file.tar.gz files* – create a tar with Gzip compression	
tar xzf *file.tar.gz* – extract a tar using Gzip	
tar cjf *file.tar.bz2* – create a tar with Bzip2 compression	
tar xjf *file.tar.bz2* – extract a tar using Bzip2	
gzip *file* – compresses *file* and renames it to *file.gz*	

Basic SHELL Commands

File system Commands	
ls	lists directories and files
ls -a	lists all files including hidden files
ls -lh	formatted list including more data
ls -t	lists sorted by date
pwd	returns path to working directory
cd *dir*	changes directory
cd ..	goes to parent directory
cd /	goes to root directory
cd	goes to home directory
touch *file_name*	creates en empty file
cp *file file_copy*	copy a file
cp -r	copy files contained in directories
rm *file*	deletes a file
rm -r *dir*	deletes a directory and its files
mv *file1 file2*	moves or renames a file
mkdir *dir_name*	creates a directory
rmdir *dir_name*	deletes a directory

Text handling commands	
command > *file*	saves STDOUT in a file
command >> *file*	appends STDOUT in a file
cat *file*	concatenate and print files
cat *file1 file2 > file3*	merges files 1 and 2 into *file3*
cat **fasta > all.fasta*	concatenates all fasta files in the current directory
head *file*	prints first lines from a file
head -n 5 *file*	prints first five lines from a file
tail *file*	prints last lines from a file
tail -n 5 *file*	prints last five lines from a file
less *file*	view a file
less -N *file*	includes line numbers
less -S *file*	wraps long lines
grep *'pattern' file*	Prints lines matching a pattern
grep -c *'pattern' file*	counts lines matching a pattern
cut -f 1,3 *file*	retrieves data from selected columns in a tab-delimited file
sort *file*	sorts lines from a *file*

Using the Command Line to Get Help

CLARUSWAY
WAY TO REINVENT YOURSELF

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Man Pages

Man Pages

man [command]

A man page (short for manual page) is a form of software documentation usually found on a Unix or Unix-like operating system.

if we install a package to do some task, the man Page for that package will typically be installed at the same time. This gives us the ability to take a look at that documentation and make sure that we're using it in a manner consistent with its design.

The man page for a particular command is invoked by preceding the command with **man.**

Man Pages

man ls

```
LS(1)                           User Commands                          LS(1)

NAME
        ls - list directory contents

SYNOPSIS
        ls [OPTION]... [FILE]...

DESCRIPTION
        List  information  about the FILEs (the current directory by default).  Sort entries alphabetically if none of
        -cftuvSUX nor --sort is specified.

        Mandatory arguments to long options are mandatory for short options too.

        -a, --all
                do not ignore entries starting with .

        -A, --almost-all
                do not list implied . and ..

        --author
                with -l, print the author of each file

        -b, --escape
                print C-style escapes for nongraphic characters

        --block-size=SIZE
                scale sizes by SIZE before printing them; e.g., '--block-size=M' prints sizes  in  units  of  1,048,576
                bytes; see SIZE format below

        -B, --ignore-backups
                do not list implied entries ending with ~

        -c     with  -lt:  sort  by,  and show, ctime (time of last modification of file status information); with -l:
                show ctime and sort by name; otherwise: sort by ctime, newest first

        -C     list entries by columns

        --color[=WHEN]
                colorize the output; WHEN can be 'always' (default if omitted), 'auto', or 'never'; more info below

        -d, --directory
                list directories themselves, not their contents
Manual page ls(1) line 1 (press h for help or q to quit)
```

NAME
Program or Function name(s) followed by descriptions of functionality.

SYNOPSIS
A short overview of available options

DESCRIPTION
Detailed information about arguments and options.

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Info Pages

info [command]

Info pages are additional documentation with more robust capability in detail. Info Page normally provides more detailed information about a command than its respective man page. Additionally, Info uses a structure for linking these pages together, and they may be assembled into a larger collection.

The info page for a particular command is invoked by preceding the command with **info**

Info Pages

info echo

```
Next: printf invocation,  Up: Printing text

15.1 'echo': Print a line of text
=================================

'echo' writes each given STRING to standard output, with a space between
each and a newline after the last one.  Synopsis:

     echo [OPTION]... [STRING]...

   Due to shell aliases and built-in 'echo' functions, using an
unadorned 'echo' interactively or in a script may get you different
functionality than that described here.  Invoke it via 'env' (i.e., 'env
echo ...') to avoid interference from the shell.

   The program accepts the following options.  Also see *note Common
options::.  Options must precede operands, and the normally-special
argument '--' has no special meaning and is treated like any other
STRING.

'-n'
     Do not output the trailing newline.

'-e'
     Enable interpretation of the following backslash-escaped characters
     in each STRING:

     '\a'
          alert (bell)
     '\b'
          backspace
     '\c'
          produce no further output
     '\e'
          escape
     '\f'
          form feed
     '\n'
          newline
     '\r'
          carriage return
     '\t'
-----Info: (coreutils)echo invocation, 78 lines --Top----------------------------
Welcome to Info version 6.5.  Type H for help, h for tutorial.
```

THANKS!

Any questions?