Linux Command Line
Ubuntu or Xubuntu

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Outline

1. Background
   a. History
   b. Benefits

2. Basics
   a. Exploring directories and files
   b. Creating and editing files
   c. Manipulating files and directories
   d. Software

3. Advanced use of commands
   a. Some search power
   b. Redirection
   c. The system
   d. Batch commands (advanced)

Once the only way to work with computer

Command-line vs. GUI

The old way and the modern way

- Terminal
- GUI = Graphical User Interface

Benefits Why the command-line?

- More efficient for repetitive tasks
- Some software used only via commands
- Emergency back-door after crash

But...

Fast and powerful ... but...

It is more difficult than graphical interfaces, since you have to know the commands. Get help:

- expect to use Google

Refresher on files and folders

Review Exercise: files and folders in Xubuntu

- Enter Documents folder
- Open and save a file using Abiword
- Close file
- Check the path name /xubuntu/xubuntu/Documents

Getting started with command-line

- Find terminal in menu
- Or use Ctrl<t>

Navigating the directory tree from command-line

pwd	show current directory (cwd is the same)
ls	list contents of a directory (that's letter l)
ls -l	list contents with more information (argument after hyphen)
cd *dirname*	change directory: command plus a name
cd ..	double-period has special meaning: up one in the directory tree
mkdir *dirname*	create a new folder
rmdir *dirname*	erase existing folder

Basic file manipulation

mv *existingfile newname*	move (ie rename): file *oldname* as *newname*
cp *existingfile newname*	copy: make a copy of file *oldname* with name *newname*
[up arrow]	repeat previous command (etc.)
Ctrl<r>	reverse search (very useful!)
rm *existingfile*	erase (ie remove) a file named *existingfile*

Help

Help pages: *man* or *--help*

- Best to save a cheatsheet; you don't have to remember:
- Remember Google to find examples or tutorials!

New files

Creating new file from command-line

abiword	opening abiword window with command
	(many programs can be opened from command-line)
nano	simple text editor
cat	show contents of a text file

Exercise: nano

1. Open a file with nano
2. Type a few basic commands you want to remember, save and quit
3. Open a new file
4. Type some basic nano commands, save and quit
5. Create two new directories and copy one file into each

Within nano, commands are accessed via ctrl

Please read bottom of screen -- help is there!

Software installation by command

sudo apt-get *newpackage* install a software package named *newname*
the package must be known by name

Exercise:

1. Install a package named *tree*
2. Run tree from /xubuntu/xubuntu
3. Read help on the *tree* program
4. Open software center and search for package *tree*

Advanced: Grep and piping to search

grep ***item*** Powerful search: finds any text matching *item*

| The vertical bar pipes output of one command into a second

Try these commands to view packages:

apt list --installed

apt list --installed | grep abiword

Capture screen output into a file

cmd > newfile	The greater-than redirects command output into a file
head	Check first rows of a file
wc	Count lines, words, characters in file
more	List lines of file one page at a time

Exercise

1. List all installed packages
2. List them again into a new file
3. Check top lines of the file (*head*)
4. Explore file with *more*
5. Count lines of file: How many packages are installed?
6. Explore file with nano

Troubleshooting: checking the system

Commands to give details about system

Usually used with Google: googling tells you a detail you need

- df [disk space]
- fdisk [disks]
- iwconfig [network]
- lspci [peripherals]
- free -m [memory]
- sudo lshw [hardware complete]