Linux File Handling Tools

Command	Description	Task
pwd	Print Working Directory (“Where am I?”)	Check that you are in ‘/homes/pi’
ls	List the contents of the current directory	What files are in your home directory?
ls -l (L S space minus L)	List the current file in long format	Which items start with a d - meaning they are directories?
mkdir <directory> eg. mkdir newFolder	Make a directory	Create a directory called “textFiles” Use ‘ls’ to check that is has worked.

Command	Description	Task
cd <directory> eg. cd newFolder	Change directory	Change directories into that folder. Run ‘pwd’ to check you’re there. Run ‘ls’ to check it’s empty.
cd .. (cd space dot dot)	Change directory up one level	Use the command ‘cd ..’ to move back to /homes/pi. Use ‘pwd’ to check.
touch <filename> eg. touch test.txt	Create a file if it doesn’t exist. Update the last time edited if it does.	Create four files: fileOne.txt, fileTwo.txt fileThree.html, fileFour.html Use ‘ls’ to check they are there.
echo <text> eg. echo A phrase	Print to the screen. Equivalent to ‘print’ in Python	Echo any phrase. You can use spaces and you don’t need speech marks.
echo <text> > <filename> eg. echo word > test.txt	This will capture the text to a file instead of displaying it to the screen.	Use ‘echo’ and ‘>’ to write some text to each of the files you made.

Command	Description	Task
cat <filename> eg. cat test.txt	This will display the contents of a file.	Use the cat command to check the contents of your four files.
cp <filename> <destination> eg. cp test.txt test2.txt	Copy a file to a new filename.	Copy fileOne.txt to a new file, fileFive.txt. Run 'ls' & 'cat' to check it has worked.
cp <filename> <destination> eg. cp test.txt newFolder	Copy a file to another folder.	You already have a folder called textFiles. Use 'cp' to copy fileFive.txt to that folder. Use 'cd', 'ls' and 'cat' to check the file has copied correctly.
mv <filename> <destination> eg. mv test2.txt test3.txt	Move a file from one name to another (effectively, rename).	Rename fileFive.txt as fileSix.txt. Use 'ls' and 'cat' to check it worked. There should be a fileSix.txt, but no fileFive.txt

Command	Description	Task
mv <filename> <destination> eg. mv test2.txt newFolder	Move a file to a different folder.	Go back up a level and use ‘mv’ to move fileFive.txt into the textFiles folder again.
ls <directory> eg. ls newFolder	List the contents of a directory without having to ‘cd’ into it.	Use ‘ls <directory>’ to check if fileFive.txt has moved.
mv *.<name> <destination> eg. mv *.txt newFolder	Move all files that match the search. * is a wildcard.	Move all of the text files (but not the html files) into the textFiles directory. Use ‘ls’ to check the current directory has no text files left and use ‘ls <directory>’ to check that all 4 text files have now been moved.
rm <filename> eg. rm someFile.txt	Remove (or delete) a file.	One at a time, delete the two html files that are left. Use ‘ls’ to check.
rm -r <directory> eg. rm -r newFolder	Recursively (completely) remove a folder and its contents	Delete the whole of the textFiles folder, including its contents. Use ‘ls’ to check that everything is back as it was.

Raspberry Pi Internet Scanning Tools

Command	Description	Task
apt-get install	Download and install a program. Must be run under 'sudo'	Run these two commands: sudo apt-get install dnsutil sudo apt-get install whois
ifconfig	Provides information about your network connection	Find out your own IP address (eth0, inet): Ask your partner for their IP address:
ping <ip> eg. ping 127.0.0.1 Press CTRL-C to stop	Send a tiny message, just to see if/how quickly it gets there	Find the average times for these pings: ping 127.0.0.1 ping <partner ip> ping bbc.co.uk
nslookup <domain> eg. nslookup bbc.co.uk	Name Server Lookup Looks up the ip address for that domain name	Find the ip addresses used for: mail.google.com picasa.google.com

Command	Description	Task
traceroute <domain> eg. traceroute bbc.co.uk	Traces the route to your target	Run the traceroute for durhamnc.gov. Which corner of the US do you think Durham is in? Run the traceroute for obiwan.scrye.net.
whois <domain> eg. whois bbc.co.uk	Provides information about who is in control of a domain	Use the whois command to find out who owns bitly.co.uk. Run the whois command on mwclarkson.co.uk. Which school do I work at?

Raspberry Pi Communication Tools

Command	Description	Task
ssh <server> -l <user> eg. ssh 192.168.0.15 -l pi	Allows remote access to a sever. The '-l' flag (minus L) lets you specify the 'login'	Decide with your partner who is the listener and who will log in. The partner should log in, using 'ssh' to connect to the listener. Once logged in, run this command: echo Testing 1 2 3 | wall You can both use 'echo phrase | wall' to talk. While logged in, you can use normal terminal commands - ls, mkdir, echo, touch, etc... Use 'exit' to log back out of the SSH server when you are finished. Try logging in from both sides.

Command	Description	Task
scp <file> <user>@<ip>:<location> eg. scp file.txt pi@192.168.0.15:~	Secure Copy - use SSH technology to copy a file to a target machine.	Use the ‘echo Some text > file.txt’ command to create a file with a secret message. Use ‘scp’ to send the file to your partner. They can use ‘ls’ and ‘cat’ to check it is there and to read it. Once you’ve been sent a file, create a response and send it back. You can make the message more secret by giving it a false name (eg. DSC1862.jpg) - but it will still really be a text file and ‘cat’ will still let you read it.

Raspberry Pi Headless Webserver

Command	Description	Task
ssh <server> -l <user> eg. ssh 192.168.0.15 -l pi	Allows remote access to a sever.	Log in to the webserver using IP address: Username: Password: Use 'cd' to navigate to /var/www/<username>
nano <filename> eg. nano index.html	Nano is a command-line text editor This will create a blank file called index.html and give you a text editor to work with.	Run the command 'nano index.html' Type the following HTML code: <html> <head><title>My first webpage</title></head> <body> Hello, world </body> </html> Press CTRL-x to exit nano. You will be prompted to save - say yes! You will be asked if the filename is correct.

Command	Description	Task
N/A		Use a web browser and navigate to <ip address>/<username> (eg. 192.168.0.15/website03). You can check to see if your webpage has worked. You can change the folder to see other people's websites. In the terminal, go back to nano to edit your webpage. Here are some HTML tags to help you: bold italic heading 1 Makes text blue

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Raspberry Pi First Steps