Design and Engineering of Computer Systems Professor Mythili Vutukuru Computer Science and Engineering Indian Institute of Technology, Bombay Lecture 6 Basics of Linux

Hi students, in this video, we will see what a shallow terminal is, and also have a look at some of the very basic Linux commands. So, right now, what you are seeing is the ubuntu 18 window, Ubuntu 18 is a Linux distribution, let us open a terminal.

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I will increase the font size a bit.

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So, what is a terminal? Terminal is just a process running on the CPU, which allows us to type in various commands and based on what we enter, it will execute certain actions and it will show me the corresponding output. So, there is a set of predefined commands and what happens if I type in something which is not a command, it will say command not found.

So, now I will go through some of the very basic commands, starting with PWD. PWD stands for Print Working Directory, and it gives me the absolute path of my current directory. So, I am currently at home slash Saurav. Now, that I know which directory I am in, I want to know what all are the files or folders, which are inside this directory.

So, I can use the ls command, it shows me all the files and other folders inside this. And there are certain hidden files, which start with the dot and it is not showing me those. As of now, I can use the hyphen a argument, which would show me all the hidden files along with other files and folders.

So, let us say if I want to create a new folder or I can use mkdir command, so I will create a new folder called folder 1 and if you do ls, so you can see that there is a new folder called folder 1. So, how can I get inside folder 1? I can use cd command to change the directory, so I will type cd space folder 1.

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And now you can see that the present directory is sort of slash folder 1. If I do ls, you can see that there is no file inside this folder, let us create a new file. You can create a new file

using touch command. So, I will write touch new dot txt and let us see. So, now you can see that there is a new file called new dot txt.

I will create another folder inside this, so now if I want to move this new file to folder 2, how can I do that? I can use the mv command. So, I will type mv then the source path, which is new dot txt and the destination path, so the destination is folder 2. So here, if you see, we do not have new file inside for folder 1, and if we go to folder 2 and do ls, so here it is. And how can we move it back to parent directory?

So, there is a special directory called dot dot, which, points to the parent directory. If I go back to the parent directory, I will use cd space dot dot, and it will take me back to the parent directory. Now, let us go inside folder 2 again, and okay, and now I want to move this new file back to folder 1, so I can use mv new dot txt and dot dot. So, it will move this new dot txt file to the parent directory.

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So, it is not here and if we go back to the parent, so new dot txt is back in folder 1. So, what if I want to copy this new file to folder 2? So, that it is both in folder 1 and folder 2. I can use CP new dot txt folder 2. So, cp the source path and the destination path.

So, now if you do ls so new, we have a new file here and inside folder 2 also, we have the new file. So, how can we delete a file? I can use the rm command, if I press rm space new dot txt, so now if I do ls, you can see that, that file is not here, so it has deleted this new file. Let us go to the parent directory and let us try to remove folder 2 using the same rm command.

So, it says it cannot remove because it is a directory, so we can use rmdir command, which is used to remove a directory. Now, if you do ls, it has removed folder 2, but rmdir can only be used when a folder is empty. So, if I go to, the parent directory and try to remove folder 1, it says fail to remove because directory is not empty.

So, how can we remove a directory along with its contents? We can use rm with r argument. So, here r stands for recursive, so it will recursively delete everything which is inside folder 1, and then it will delete folder 1 itself. So, now if I do ls, you can see that we do not have folder 1 anymore. So, now let us see another command, which is used to install new packages, so which is the apt command. So, if I want to install VirtualBox, I can type apt install VirtualBox.

It says, could not open log file permission denied. And why does it say so? So, if I want to install anything in my Ubuntu, I need root privilege. So, if I want to run any command with root privilege, I can type in sudo space that command, and it will run this command with root privilege. So, it asks for my password, I will enter the password.

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-	Need to get 25.9 MB/27.2 MB of archives.								
	After this operation, 118 MB of addition	hal disk space will be	used.						
RPT	¿Do you want to continue? [Y/n]								





It has started installing and it says this much MB of additional disk will be used. I will exit the installation for now using control plus C. Now, whenever I come across any new command and I want to know what it does, I can use the man command, which shows us the manual page of any command. So, if I type man space pwd. It tells me that it prints the full file name of the current working directory, I can exit this using q. And let us see the man page of ls command, so it says that it lists information about the files, and if you remember, we had used this a argument and it says, do not ignore entry, starting with the dot.

So, it shows all the files, including the hidden files. So, let us exit this. In fact there is a man page for man command itself and it says, they say an interface to the online reference manuals. You can go through this man page and a number of different arguments. Finally,

how can we exit the shell? We can use the exit command. So, that is it for this video. Thanks, and have a nice day.