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**CST – 221**

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**GitHub repository link** https://github.com/FREDDYSMALLZ/Operating-Systems-Concepts-CST-221.git

**CST-221 UNIX Family of Operating Systems**

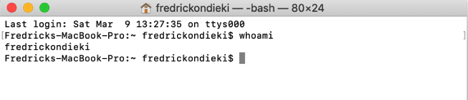
To carry out this assignment successful, I performed the following UNIX/Linux commands and tasks.

|  |  |
| --- | --- |
|  | Commands |
| 1 | *whoami* |
| 2 | *users* |
| 3 | *ls*- at least 3 arguments |
| 4 | Change *r, w, x* permission to a file using *chmod* |
| 5 | Checking the value of any 3 environment variables |
| 6 | Use *grep* to search for specific content in a file |
| 7 | Use *sort, grep*, and piping to find a string in a list of files in a directory |

**Screenshots showing execution**

***Whoami***

whoami command is used both in UNIX OPERATING SYSTEM and as well as in Windows Operating system

* It is the concatenation of the strings “who”, “am”,” I” as whoami.
* It displays the username of the current user when this command is invoked.
* It is similar as running the id command with the options -un.

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Description automatically generated***Users***

***Ls***

The ls command is a command-line utility for listing the contents of a directory or directories given to it via standard input. It writes results to standard output. The ls command supports showing a variety of information about files, sorting on a range of options and recursive listing.

**A screenshot of a social media post

Description automatically generatedList of directories**

**Showing the contents of a directory**

**A screenshot of a cell phone

Description automatically generated**To show the contents of a directory pass the directory name to the ls command. This will list the contents of the directory in alphabetical order.

**How to show a long listing**

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Description automatically generatedTo show a long listing pass the ***-l*** option to the ***ls*** command. This will output detailed information on the directory listing.

**How to sort by size**

A close up of text on a white background

Description automatically generatedTo sort a directory listing by name pass the ***-S*** option. In the following example this is combined with the **-l** option to show a long listing.

***Chmod***

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Description automatically generatedA screenshot of a cell phone

Description automatically generatedchmod is used to change the permissions of files or directories. The command name chmod stands for "change mode", and it is used to define the way a file can be accessed.

**Environment variables**

Environment variables are dynamic values which affect the processes or programs on a computer. They exist in every operating system, but types may vary. Environment variables can be created, edited, saved, and removed and give information about the system behavior. Environment variables can change the way a software/programs behave.

**USER-**The username for the operating system.

**HOME**- Default path to the user's home directory.

**PATH**- This variable holds a colon (:)-separated list of directories in which your system looks for executable files.

**A screenshot of a cell phone

Description automatically generatedUID**- User's unique ID.

**Use of grep to search for a specific content on a file**

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Description automatically generatedThis first grep command example searches for all occurrences of the text string 'Fredrick' within the xyz.txt file. It will find and display all of the lines in this file that contain the text string Fredrick, including lines that contain usernames like "Fredrick".

**Use *sort, grep*, and *piping* to find a string in a list of files in a directory**

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Description automatically generatedSORT command is used to sort a file, arranging the records in a particular order. By default, the sort command sorts file assuming the contents are ASCII. Using options in sort command, it can also be used to sort numerically.

**Grep command and piping**

Considering the Unix\Shell piping ***grep nd xyz | wc –l*** we come with the following results. The grep command in Unix/Linux filter searches a file for a particular pattern of characters, and displays all lines that contain that pattern. The pattern that is searched in the file is referred to as the regular expression (grep stands for globally search for regular expression and print out). A pipe is a form of redirection (transfer of standard output to some other destination) that is used in Linux and other Unix-like operating systems to send the output of one. To show the output of this command, I created a file and named it xyz. Then I used the command to search for the “nd” . I did apply both parts of the command and came up with the results shown on the screenshots attached on this post. The grep nd xyz | wc –l will only print the number of line containing ‘nd’ A screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

Description automatically generatedbut if you use the command grep nd xyz will display the text as well as all lines containing ‘nd’.

**Super user account**

A superuser is a network account with privilege levels far beyond those of most user accounts. Superuser accounts are necessary for platform management functions but it is necessary to control and oversee them. Because these accounts have elevated access rights, those with access can bypass the internal controls of the target platform. Once these controls are bypassed, users can breach confidential information, change transactions, and destroy audit data. You can access files normally reserved for other users, change other user access, and do a variety of others administrative actions. In most cases you would use superuser when you wish to have A screenshot of a cell phone

Description automatically generatedunrestricted access to the machine.

**Other Unix/Linux commands**

**A screenshot of a cell phone

Description automatically generatedMkdir- Creates a new directory**

**A screenshot of a cell phone

Description automatically generatedrmdir - Removing Directories**

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Description automatically generated**

**Creating a File**

**Viewing hidden “dot” files**

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Description automatically generatedEnter the command ls -a. Now you can view the hidden "dot" files.

**About other people**

***w ---*** tells you who is logged in, and what they are doing. Especially useful: the 'idle' part. This allows you to see whether they are sitting there typing away at their keyboards right now.

A screenshot of a cell phone

Description automatically generated***who ---*** tells you who's logged on, and where they are coming from. Useful if you are looking for someone who is physically in the same building as you, or in some other location.

**Shell Script with different Unix/Linux Commands**

When you run the terminal, the Shell issues a command prompt (usually $), where you can type your input, which is then executed when you hit the Enter key. The output or the result is thereafter displayed on the terminal. The Shell wraps around the delicate interior of an Operating system protecting it from accidental damage. Hence the name Shell.

**Steps in creating a shell script**

1. Create a file using a vi editor (or any other editor). Name script file with extension .sh
2. Start the script with #! /bin/sh
3. Write some code.
4. Save the script file as filename.sh
5. For executing the script type bash filename.sh

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Description automatically generatedA screenshot of a cell phone

Description automatically generatedScreenshots**

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