

**LAB**

**LINUX SYSTEM ADMINISTRATION**

**Copyright © (2022-2023) All Rights Reserved**

**Dr. Matthew Kisow**

VERSION 2

07-JUN-2023

**LAB:** LAB08-01

**OBJECTIVE**: The objective of this lab is to learn how to work with files using the commands we learned from the book; we will do so using the files listed below.

**INSTRUCTIONS**: These labs will test your ability to actively research how to perform a required action on a Linux operating system. All questions asked (below) should be included in a lab report. This lab report should be written in Microsoft Word and include a numbered list corresponding to the task (below). This list must include a clear screenshot of the command and its output. Please follow the instructions for submitting this assignment on Blackboard.

* You should be logged in as labuser1 with the password ‘P@$$w0rd’
* You must be in the /labs/CH08 folder to complete this lab.

**LIST THAT FILE**

1. Using the **cat** command, list the contents of the ***frankenstein-letter.txt***
   1. Did the entire contents of the letter fit on the screen?
2. Using the ***tac*** command, list the contents of the ***frankenstein-letter.txt***
   1. What changed?
3. Using the ***more*** command, list the contents of the ***frankenstein-letter.txt***
   1. Were you able to read the contents of the file this time?
   2. What key did you use to skip to the next text screen?
4. Using the ***less*** command, list the contents of the ***frankenstein-letter.txt***
   1. Were you able to read the contents of the file this time?
   2. What key did you use to skip to the next text screen?
   3. What did the arrow keys do?
   4. Exit ***less***.
5. Using the ***nl*** command, number the individual lines of the ***frankenstein-letter.txt*** and pipe it to the less command.
   1. What word does line fifty-six start with?
   2. Exit ***nl***.

**HEADS AND TAILS**

1. Using the ***head*** command, list the first ten lines of the ***frankenstein-letter.txt***
   1. What was the syntax of the command?
   2. How did this command differentiate from the head command without the additional “n” switch?
2. Using the ***tail*** command, list the last eight lines of the ***frankenstein-letter.txt***
   1. What was the syntax of the command?
3. Using the ***head*** command, start on line forty of the ***frankenstein-letter.txt*** and pipe the output to ***tail***.
   1. What was the first line shown?
   2. What was the last line shown?

**SORTING ALPHABETICAL**

1. Using the ***cat*** command, list the contents of the ***wizard-names.txt***
   1. Is this list organized?
2. Using the ***sort*** command, list the contents of the ***wizard-names.txt***
   1. Is this list organized by first name or last name?
3. Using the ***sort*** command, this time, list the contents of the ***wizard-names.txt*** by the last name.
   1. What was the syntax of the command?

**SORTING NUMERIC**

1. Using the ***cat*** command, list the contents of the ***numbers.txt***
   1. Is this list organized?
2. Using the ***sort*** command, list the contents of the ***numbers.txt***
   1. Is this list organized this time?
3. Using the ***sort*** command and a switch, list the contents of the ***numbers.txt***
   1. Is this list organized this time?

**REARRANGING COLUMNS**

1. Using the ***cat*** command, list the contents of the ***starfleet-ships.txt***
   1. How is this list organized?

***The file is organized in “Class, Ship Name, Ship Number” order.***

* 1. Using the ***awk*** command, rearrange the file in “Ship Number, Ship Name and Class” order. Removing the comma field separator and replacing it with a fixed-length field.

**NOTE**: This step will require research and will use the ***printf*** command.

* 1. **BONUS (RESEARCH):** sort this list by ship number (Hint: pipe it to a command).
  2. How many and what are the names of the ***Constitution-class (31st century)*** ships?
  3. How many and what are the class names of all ships named the ***Enterprise***?
  4. **BONUS (RESEARCH):** How many ships have an unknown class?

**HINT**: Pipe it to the ***uniq*** command using a switch.

* 1. Using the ***tr*** command, capitalize the entire ***starfleet-ships.txt*** file using 15b or 15c as the input.

**SEARCH AND REPLACE**

1. Using the ***cat*** command, list the contents of the ***lorem-ipsum.txt*** file.
   1. Did you notice the mis-spellings of 'pain', 'which', 'and' and 'circumstances' in the translation?
   2. Using the ***sed*** command, change all of the mis-spellings of those words.
2. Using the ***cat*** command, list the contents of the ***lorem-ipsum.txt*** file.
   1. Why didn't the changes from the sed command remain?
   2. **BONUS (RESEARCH):** Using the command from 16b, make the spelling changes permanent.

**GREP**

1. Using the ***cat*** command, list the contents of the ***written-numbers.txt*** file.
   1. What do you see?
2. Using the ***cat*** command, list the contents of the ***written-numbers-search.txt*** file.
   1. What do you see?
3. Using the ***fgrep*** command, search for the terms within the ***written-numbers.txt*** file.
   1. What do you notice?

**VIM**

1. Using the ***vi*** program, open the ***wizard-names.txt*** file.
   1. Add ***Tom Marvolo Riddle*** after ***Sirius Black***.
   2. Add ***Rubeus Hagrid*** after ***Newt Scamander***.
   3. Move ***Remus Lupin*** before ***Albus Dumbledore***.
   4. Write the file and quit.

***Wait exactly one minute before proceeding to the next step.***

1. Using the ***cat*** command, list the contents of the ***wizard-names.txt*** file.
   1. What do you see?
   2. What happened to the line ***Tom Marvolo Riddle***?
2. Using the ***vi*** command, open the ***wizard-names.txt*** file.
   1. Delete the line ***He who shall not be named***
   2. Add the line ***Lord Voldemort*** after ***Rubeus Hagrid***.

***Wait exactly one minute before proceeding to the next step.***

1. Using the ***cat*** command, list the contents of the ***wizard-names.txt*** file.
   1. What do you see?
   2. What happened to the line Lord Voldemort?

**NOTE:** I wrote a script that will change those lines every minute if they are entered. Kinda-Magic?