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Final Project Report

Unix Programming

5/8/2025

1. Text processing Tool Build a script or program that processes text files (e.g., word count, line count, or pattern matching using regular expressions). Integrate Unix tools like grep, awk, or sed

I have selected this project because it follows some of the fundamentals I've learned in this class. I also believe this is a tough enough project where it will make me reflect on what I have learned and even make me research more about Linux. I also think I can improve within the project than what it is just asking me. I understand that the project is asking me to be able to match certain phrases within certain text files. However, I want to make sure it matches either word count, line count, or pattern. Overall, I think this would be a fun challenging program for me to try and build.

My project will be a Linux program text processing tool. This program will allow any user to be able to track down patterns and make it easier for users to find sections within their program to fix them or to improve upon them. This will be useful to programmers who must create a ton of files for several types of code or programs. I will be making this program with a few Unix tools such as grep, awk, and sed. Each of these tools does different things that will be important within my program.

Using grep within my program will allow it to find specific words, phrases, or patterns in text files. So, I can incorporate this command to find specific things in files that a user might want to find. Grep means "global regular expression print" but in the programming language, it can be used as "grep" for short. I can also use awk within my program which is short for the designers Aho, Weinberger, and Kernighan. These designers made this command to be able to search through text files by columns. This can be useful when needing to find a specific line and column. This can also be useful in finding out the column number and even word count. Finally, the command sed also known as stream editor. Sed is used to transform and parse text within a file. This means that I can use this command to find text within the text file and be able to replace it with something else.

With these different commands, it will allow me to set up a program that will create an interactive scenario. It will give the user multiple options that they can use to find within their file. This will be a useful tool when needing to find patterns within a text file. The

program will be able to give the user information about the text file such as how many lines, word count, patterns, and even be able to replace words within the file.

The problem I usually have is not remembering certain parts of my program or even wanting to replace a word in all over my program with something else. The struggle is not being able to be as efficient as I want, especially when working with really long code. The problem I am trying to solve is wasting the time to go through files and saving time for programmers. This project will also help keep track of how many lines a program has and what patterns it may contain.

The way I will solve this problem is by using different commands in Linux to create a program that will find patterns and be able to replace patterns. The program will ask the user what they are trying to find within the file. This can be the word count, line count, and patterns. This will allow the program to get more efficient writing code and know how big of a project the user might be creating. This program works by using the codes awk, grep, and sed to find pattern and be able to give the user a better experience coding.

	Apr 10 – Apr 17	Apr 17 – Apr 24	Apr 24 – May 1
Situation	Not knowing what the codes Awk, Sed, and Grep mean	Figuring out what codes I need to use within my code.	Putting the code together.
Task	Research the codes and write down notes.	Rereading what I want my program to do and doing research to find the programs I need	My task this week was to put everything I know to put my code together.
Action	Learned what Awk, Sed, and Grep meant and what they did	I went on geeksforgeeks.org to find examples of codes and understand how to use them.	Went onto putty and started building my code together and many trail and errors.
Result	Awk scans for patterns in each line. Mostly used for processing and pattern matching. Sed is used to replace old text with new text. Easy way to replace certain	I was able to figure out the codes I needed which were awk, grep, sed, wc –l and wc –w. I also needed if, while, and case functions within my code.	I was able to finish the code and created a sample text file to test out my program. I was also able to upload it to my repository on GitHub.

	words in files with other words. Grep finds patterns within each line and then prints them which is useful finding patterns within a line.		