Lab Notebook

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for

SUMMER INTERNSHIP

May 26th, 2025- July 21st, 2025

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May 26th

1. Creating GitHub repository

For collaborative work and sharing my progress, I created a GitHub repository and a Lab notebook file.

2. Catching up and continuing- Chapter 1 (Learning the Bash Shell)

Before the start of the Internship, I had already started studying the book "Learning the Bash Shell" until 1.6- Files. Today I restarted my study from that chapter. Also, I documented everything from chapter 1 into a .txt file. A catch up of all of the commands I learnt and what they do is provided in the *chapter1.txt* file.

May 27th

1. Studying Chapter 2 and documenting

Today, I started with learning and documenting chapter 2 of the book where I learnt command-line editing and how to navigate bash using keyboard combinations. Because on my system the default editor is *emacs*, I learnt its keyboard shortcuts. Everything from this chapter is documented in the *chapter2.txt* file.

2. Studying Chapter 3 and documenting

I then moved onto Chapter 3, *Customizing your environment*. This chapter's documentation is provided in the *chapter3.txt* file. The chapter comprises of information about special files, aliases, options and variables and how they are useful in various scenarios.

3. Starting Chapter 4

I also studied Chapter 4, where Shell programming actually starts.

May 28th

1. Continuing Chapter 4

Today, I continued learning chapter 4 and learnt in detail about different types of variables and also put together a GC counter which counts the number of G and C nucleotides in a sequence. This can be referred to in *chapter4.txt*.

May 29th

1. Working further on GC content calculator

I continued working on my GC content calculator as I was having troubles with debugging the code and assigning variables to inputted values. I was able to write a code using files as input,

but not user input sequences. So, I worked on correcting that. I was able to successfully complete that code by 11:33 AM and I uploaded it on Google Classroom.

2. Finishing Chapter 4

I also completed chapter 4. The entire documentation is available in the file *chapter4.txt*.

3. Working on Chapter 5 and Documenting

I wrote codes for learning if/else and for and while loop.

May 30th

1. Building a file recognizer

Today, I worked on a file recognizer that based on the contents of the file, can tell whether it is a FASTA, FASTQ, SAM or VCF file. It was made to understand the concept of logical AND operator and if-elif-else conditionals. The code can be found on Google Classroom and on my GitHub repository with the file name *file_recognizer*.

2. Finishing Chapter 5

Today I also completed chapter 5 with numerous examples and all syntaxes mentioned in the file *chapter5.txt*. The chapter discussed if-elif else, for, while, until, case and select in detail.

3. Building a FASTA analyser

I also worked on a code for learning for loop and understanding functions. The code will take multiple files as input and determine the FASTA files among them.

4. Writing a code that displays a menu using *select* command

I also wrote a code that displays a menu, and the user can navigate that menu for doing different tasks like getting present directory information etc.

May 31st

1. Shooting, compiling and uploading weekly video

I compiled my study material and notes and summarized it for shooting the weekly video. I then shot the video and uploaded it onto YouTube. I also shared it on the Google Classroom.

June 2nd

1. Studying Chapter 6

I started working on chapter 6, on making the documentation for it and learning the chapter as well. The documentation is available in *chapter6.txt*.