**LAB NOTEBOOK**

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*for*

SUMMER INTERNSHIP

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June 15

1} **Creating GitHub Repository**

I created a dedicated GitHub repository to organize and track all my lab notebook entries and scripts. It will help me version-control my work, back it up securely, and share progress with mentors easily.

2} **Chapter 1 – Bash Basics**

I got introduced to what a shell is, the difference between bash and other UNIX shells, and learned how basic command-line syntax, file paths, and I/O redirection work. It was a strong foundation.

June 16

1}**Chapter 2 – Command-Line Editing**

In this chapter, I explored how to efficiently use the command history and edit previous commands using emacs and vi modes. I also learned about keybindings and how to speed up terminal usage.

2} **Automated FASTA File Parsing Using Bash**

I wrote a Bash script to automatically parse FASTA files by extracting sequence headers and nucleotide data. This helped in organizing biological data for downstream analysis without manual effort. It was a great way to apply shell scripting to bioinformatics.

June 17

1}**Chapter 3 – Customizing Your Environment (Completed):** Today I learned how to personalize my Bash environment using .bashrc, .bash\_profile, aliases, and shell variables. It was really interesting to see how small tweaks can improve efficiency and make the terminal feel more like “my own workspace.”

**2️} Chapter 4 – Basic Shell Programming (Started):** I started Chapter 4 and began writing simple shell scripts. I explored how to define functions, use variables, and understand quoting mechanisms. Looking forward to building more automation logic as I continue this chapter.

**June 18**

1}**Chapter 4 – Basic Shell Programming (Completed):**  
 I completed Chapter 4 today. I practiced writing functions, using positional parameters like $@ and $\*, and performed string manipulations and command substitution. This chapter really boosted my confidence in writing reusable shell scripts.

2️}**Chapter 5 – Flow Control (Started):** I began Chapter 5, which dives into flow control structures like if-else, for, while, and case. I explored how scripts can make decisions and respond dynamically based on inputs or file conditions. Writing conditional logic was very engaging.

**June 19**

**1} Chapter 5 – Flow Control (Completed):**  
 I wrapped up Chapter 5 by practicing different types of loops and conditionals. I now feel more comfortable controlling the flow of my bash scripts and making them interactive and logic-driven.

2️} **Chapter 6 – Command-Line Options & Typed Variables (Started):**  
 Started Chapter 6, which introduced getopts for parsing options and arguments in scripts. I also touched upon typed variables, integer arithmetic, and basic usage of arrays. Excited to use these to build more flexible scripts.