

LAB NOTEBOOK

HANSIKA BHAMBHANEY
for
SUMMER INTERNSHIP

TABLE OF CONTENTS

June 15

- 1} Chapter 1 started and completed.
- 2} Created github repository

June 16

- 1} Chapter 2 started and completed
- 2} Automated FASTA File Parsing Using Bash

June 17

- 1} Chapter 3 started and completed
- 2} started chapter 4

June 18

- 1} Chapter 4 completed
- 2} Started chapter 5

June 19

- 1} Completed chapter 5
- 2} Started chapter 6

SUNDAY, 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.

MONDAY, 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.

TUESDAY, 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.”

2} 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.

WEDNESDAY, 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.

2}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.

THURSDAY, 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.

2} 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.