**Summary of Shell Scripting Commands - Practice**

**## 1. Basic Commands**

# read: Reads input from the user and stores it in a variable.

# exit: Exits the script with a status code.

**## 2. File and Directory Operations**

# touch: Creates an empty file.

# mkdir: Creates a new directory.

# rmdir: Removes an empty directory.

#sudo rm -rf my\_directory: Removing non-empty directories.

# ls: Lists files and directories.

ls -ld # Show details of the directory itself

# pwd: Displays the current working directory.

# stat: Displays detailed information about a file or directory.

**## 3. File and Directory Ownership and Permissions**

# chown: Changes the owner and/or group of a file or directory.

#sudo chown :groupname /path/to/file: Change only group.

# sudo chown username /path/to/file: Change only owner.

# chmod: Changes the permissions of a file or directory.

# Permission Codes:

# 7 -> Read, Write, Execute (rwx)

# 6 -> Read, Write (rw-)

# 5 -> Read, Execute (r-x)

# 4 -> Read only (r--)

# 0 -> No permissions (---)

**## 4. Process Management**

# ps: Lists active processes.

ps -u username # Shows processes for a specific user

# kill: Terminates a process.

kill 1234 # Graceful termination (SIGTERM)

kill -9 1234 # Force kill (SIGKILL)

**## 5. File Manipulation and Content Display**

# wc: Counts lines, words, and characters in a file.

# cat: Displays the content of a file.

**## 6. Archiving and Compressing**

# tar: Archives and compresses files.

**## 7. Arithmetic Operations**

# let: Performs arithmetic calculations.

# expr: Evaluates expressions and performs arithmetic.

# Arithmetic Expansion: Uses $(( )) to perform calculations.

**## 8. Control Structures**

# if...then...else...fi: Conditional statements.

# for...do...done: Loops through a list of items.

# while...do...done: Loops while a condition is true.

# until...do...done: Loops until a condition becomes true.

**## 9. Special Characters and Syntax**

# $# - Number of positional parameters passed to the script.

# $0 - The name of the script.

# $1, $2, ... - Positional parameters representing arguments.

filename=$1

# "$var" - Quoting variables to handle spaces and special characters.