

UNIX & SHELL SCRIPTING

Part-1: Learn to Work with UNIX

1. Getting Started

- a. The UNIX Operating System
- b. Brief History Of Unix
- c. UNIX Architecture
- d. UNIX Flavors
- e. Knowing Your Machine
- f. Command Structure
- g. Getting Help
 - i. Man Pages
 - ii. UNIX Online reference

2. Using the Command Line

- a. Logging In & Out Of the System
- b. **passwd**: Changing Passwords
- c. **who**: Who Are the Users
- d. **uname**: Knowing the machine's characteristics
- e. **date**: Displaying the System date
- f. **echo**: Displaying a Message
- g. **printf**: An Alternative to echo
- h. **bc**: The Calculator

3. UNIX File System

- a. The UNIX File System Organization
- b. Relative & Absolute File Names
- c. Hidden Files in UNIX
- d. Special Directories: . & ..
- e. PATH & HOME Variables
- f. **pwd**: Checking your current directory
- g. **cd**: Changing the Current Directory
- h. **mkdir**: Making Directories
- i. **rmdir**: removing Directories
- j. **ls**: Listing Directory Contents

4. UNIX File Handling

- a. Listing the Files: All about the 'ls' command
- b. Listing other directories without changing Location
- c. Special ls Command Flags:
 - i. Changing the Sort Order in ls

- ii. Listing Directory Trees Recursively
 - iii. Long Listing Format
 - iv. Long Listing format for Directories
 - d. **cat**: Displaying & Creating Files
 - e. **cp**: Copying a File
 - f. **rm**: Deleting Files
 - g. **mv**: Moving Files/Renaming Files
 - h. **more**: Paging Output
 - i. **wc**: Counting Line, words & Characters
 - j. **diff**: Difference Between Two Files
 - k. **gzip & gunzip**: Compressing & Uncompressing Files
 - l. **zip & unzip**: Compressing & Uncompressing Files
 - m. **tar**: The Archival Program
- 5. **File Ownership & Permissions**
 - a. File Ownership
 - b. File Permissions
 - c. **chmod**: Changing File Permissions
 - d. Directory Permissions
 - e. Changing File Ownership
- 6. **Working With Files**
 - a. **head**: Display First Few Lines
 - b. **tail**: Display Last Few Lines
 - c. **more**: View Larger Files
 - d. **cut**: Slitting a File Vertically
 - e. **sort**: Ordering a File
 - f. **uniq**: Locate repeated & non-repeated lines
 - g. **tr**: Translating Characters
- 7. **Filters & Piping**
 - a. **grep**: Searching for a Pattern
 - b. **sed**: The Stream Editor
 - c. Line Addressing
 - d. Redirection
 - e. Pipe
 - f. Basics of awk
- 8. **UNIX Wild Cards**
 - a. File Name wildcards
 - b. Searching Files Using grep
- 9. **Introduction to the vi Editor**
 - a. vi basics
 - b. Start and Quit vi
 - c. vi modes (Command Mode and Input Mode)
 - d. Input Mode: Entering & Replacing Text

- e. Saving Text and Quitting
- f. Navigation
- g. Editing Text
- h. Undoing Last Editing Instructions
- i. Searching for a Pattern
- j. Substitution: Search & Replace

Part-2: Shell Scripting

10. Shell Basics

- a. Types of Shells
- b. Shell Functionality
- c. Environment
- d. What is a Shell Script?

11. Writing First Script

- a. Writing & Executing a Basic script
- b. Debugging Script
- c. Making Interactive Scripts
- d. Variables
- e. Mathematical Expressions
- f. **read**: Making Interactive Scripts

12. Conditional Statements

- a. If-else-elif
- b. Test Command
- c. [] to evaluate expressions
- d. Logical Operators – AND, OR, NOT
- e. CASE-ESAC

13. Loops

- a. While
- b. For
- c. Break & Continue

14. Command Line Arguments

- a. Positional Parameters
- b. Manipulating Positional Parameters: set & shift

15. Functions

16. Exist Statuses

17. Lab & Hands On