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LINUX SHELL SCRIPTING

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1. Chapter 1: Quick Introduction to Linux

- What Is Linux?
- Who created Linux?
- Where can I download Linux?
- How do I Install Linux?
- Linux usage in everyday life
- What is Linux Kernel?
- What is Linux Shell?
- Unix philosophy
- But how do you use the shell?
- What is Shell Script or shell scripting?
- Why shell scripting?
- Chapter 1 Challenges

2. Chapter 2: Getting Started With Shell Programming

- The bash shell
- Shell commands
- The role of shells in the Linux environment
- Other standard shells
- Write simple shell script - "Hello World!"
- Starting script with Shebang line (#!)
- Comments in script
- Setting up permissions on script
- Execute script
- Debug script
- Chapter 2 Challenges

3. Chapter 3: The Shell Variables and Environment

- Variables in shell
- Assign values to shell variables
- Default shell variables value
- Rules for Naming variable name
- Display the value of shell variables
- Quoting
- The export statement
- Unset shell and environment variables
- Getting User Input ViKeyboard
- Perform arithmetic operations
- Create an integer variable

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- Create the constants variable
- Bash variable existence check
- Customize the bash shell environments
- Recalling command history
- Path name expansion
- Create and use aliases
- The tilde expansion
- Startup scripts
- Using aliases
- Changing bash prompt
- Setting shell options
- Setting system wide shell options
- Chapter 3 Challenges

4. Chapter 4: Conditionals Execution (Decision Making)

- Bash structured language constructs
- Test command
- if structures to execute code based on condition
- If..else..fi
- Nested ifs
- Multilevel if-then-else
- The exit status of command
- Conditional execution
- Logical AND &&
- Logical OR ||
- Logical Not !
- Conditional expression using [(portable version)
- Conditional expression using [[
- Numeric comparison
- String comparison
- File attributes comparisons
- Shell command line parameters
- How to use positional parameters
- Parameters Set by the Shell
- Create usage messages
- Exit command
- The case statement
- Dealing with case sensitive pattern
- Chapter 4 Challenges

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5. Chapter 5: Bash Loops

- The for loop statement
- Nested for loop statement
- The while loop statement
- Use of : to set infinite while loop
- The until loop statement
- The select loop statement
- Exit the select loop statement
- Using the break statement
- Using the continue statement
- Command substitution
- Chapter 5 Challenges

6. Chapter 6: Shell Redirection

- Input and Output
- Standard input
- Standard output
- Standard error
- Empty file creation
- /dev/null discards unwanted output
- here documents
- here strings
- Redirection of standard error
- Redirection of standard output
- Appending redirected output
- Redirection of both standard error and output
- Writing output to files
- Assigns the file descriptor (fd) to file for output
- Assigns the file descriptor (fd) to file for input
- Closes the file descriptor (fd)
- Opening the file descriptors for reading and writing
- Reads from the file descriptor (fd)
- Executes commands and send output to the file descriptor (fd)
- Chapter 6 Challenges

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7. Chapter 7: Pipes and Filters

- Linking Commands
- Multiple commands
- Putting jobs in background
- Pipes
- How to use pipes to connect programs
- Input redirection in pipes
- Output redirection in pipes
- Why use pipes
- Filters
- Chapter 7 Challenges

8. Chapter 8: Traps

- Signals
- What is Process?
- How to view Processes
- Sending signal to Processes
- Terminating Processes
- Shell signal values
- The trap statement
- How to clear trap
- Include trap statements in script
- Use the trap statement to catch signals and handle errors
- What is Subshell?
- Compound command
- exec command
- Chapter 8 Challenges

9. Chapter 9: Functions

- Writing your first shell function
- Displaying functions
- Removing functions
- Defining functions
- Writing functions
- Calling functions
- Pass arguments into function
- local variable
- Returning from function
- Shell functions library

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- Source command
- Recursive function
- Putting functions in background
- Chapter 9 Challenges
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10. Chapter 10: Interactive Scripts

- Menu driven scripts
- Getting information about your system
- Bash display dialog boxes
- dialog customization with configuration file
- yes/no dialog box
- An input dialog box
- password box
- menu box
- progress bar (gauge box)
- The file selection box
- The form dialog for input
- Console management
- Get the name of the current terminal
- Fixing the display with reset
- Get screen width and height with tput
- Moving the cursor with tput
- Display centered text in the screen in reverse video
- Set the keyboard leds
- Turn on or off NumLock leds
- Turn on or off CapsLock leds
- Turn on or off ScrollLock leds

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