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## **Unix/Linux BASIC SYLLABUS**

### **Module 1 – Introduction to the Linux Operating System**

- Getting started navigating the file system
- The file system structure
- Directories and files
- Pathnames
- Navigating the file system
- Exercise: Logging on to the system
- Exercise: Navigating the file system

### **Module 2 – Basic Commands**

- Command line syntax
- Basic file handling commands (mv, cp, ln, rm etc...)
- Basic Directory handling commands (mkdir, rmdir, etc...)
- Exercise: Manipulating files and directories

### **Module 3 – File Permissions and Access Control**

- Users and user groups
- File access permissions
- Changing file attributes
- Switching users and user groups
- Linking files
- Exercise: Setting and access permissions



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## **Module 4 – Redirection and Pipes**

- Input redirection
- Output redirection
- Pipes
- Exercise: Using redirection and pipe facilities

## **Module 5 – Introduction to the vi Editor**

- Overview of the vi editor
- Basic functions
- Switching to input mode
- Other useful commands
- Exercises: Using the vi editor

## **Module 6 – Searching Text**

- Searching for text with grep
- Linking files
- Exercises: Searching and Replacing Text

## **Module 7 – Processes**

- What is a process?
- Monitoring processes
- Killing processes
- Background processes
- Job Control
- Grouping commands
- Exercise: Monitoring and controlling processes



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## **Module 8 – More Basic Commands**

- The wc (word count) command
- The find command
- The cut command
- The sort command
- The finger command
- Exercise: Using file handling commands

## **Module 9 – The User Environment**

- Customizing the .bash\_profile file
- Customizing the .bashrc file
- Exercise: Setting up an environment



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## Unix Shell Script Basic

### Module 1 – Getting Started

- What is a shell script?
- Development guidelines
- Creating and editing shell scripts
- Naming and storing shell scripts
- Executing shell scripts
- Exercise: Write a simple shell script

### Module 2 – Using Variables

- Environment variables
- Local variables
- Arrays
- Assigning values to variables
- Assessing variable values
- Using quotes
- Delimiting variable names
- Echo control sequences
- Exercise: Add variables to a script

### Module 3 – Integer Arithmetic

- Using the expr command
- Using the (( )) notation
- Exercise: Add integer arithmetic to a shell script



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## **Module 4 – Handling Run Time Data**

- The read command
- Command line arguments
- Exercise: Writing a generic shell script
- Exercise: Writing an interactive shell script

## **Module 5 – Condition Execution**

- The if statement
- The test command
- Other test notations
- Switch case
- Default and substitute variables
- Exit status codes
- Exercise: Adding validation to previous scripts

## **Module 6 – Loop Constructs**

- The while loop
- The until loop
- The for loop
- The while true and until false loops
- Loop control commands
- select loop
- Exercise: Enhancing the previously written scripts



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## **Module 7 – Multi-Branch Decisions**

- The case statement

## **Module 8 – Functions**

- What is a function?
- Syntax
- Examples
- Exercise: Add a function to a script



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## **Advanced Unix Shell Scripting**

### **Module 1 – The Stream Editor (SED)**

- Introduction and command line syntax
- The sed program structure
- sed program processing
- Use sed commands
- sed addresses
- sed instructions
- Exercises: SessionSimple text processing with sed
- Exercises: SessionCreate sed scripts to edit files

### **Module 2 – Pattern Scanning Utility (AWK)**

- Introduction to The Pattern Scanning Utility - awk
- Introduction and command line syntax
- The awk program structure
- Use regular expressions
- Operators
- Simple patterns
- Extended patterns
- Comments
- Special patterns (BEGIN and END)
- Program variables
- Built-in variables
- Mathematical operators
- Enhanced printing
- Handling user variables
- Exercises: Create simple awk scripts
- Exercises: Create a simple awk script using variables



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