

COP4342 Exam 1 Study Topics

1. Introduction to Unix

1.1. Unix Overview

1.1.1. History of Unix

1.1.2. Advantages of Unix

1.1.3. Windows vs. Unix

1.1.4. Unix Organization

1.1.5. Varieties of Unix

1.2. Definitions

1.3. Shells

1.4. Files

1.4.1. Extensions

1.4.2. Wildcards

1.4.3. File Systems

1.4.4. Paths

1.5. Basic Commands

1.5.1. Navigation within a File System

1.5.2. Listing Files

1.5.3. File Permissions

1.5.4. Removing, Copying, Renaming Files

1.6. I/O

1.6.1. Standard I/O

1.6.2. Redirecting Standard Input, Output, and Error

1.6.3. Displaying Files (Cat, More, and Less)

1.6.4. Appending to Files

1.6.5. Concatenating Files

1.6.6. Pipes and Tee

1.7. Comparing Files

1.8. Accessing Documentation

2. Shell Programming and Unix Utilities

2.1. Shell Scripts

2.1.1. Advantages and Disadvantages

2.1.2. Recommended Shells

2.1.3. Creating and Invoking Shell Scripts

2.1.4. Printing a Line to Standard Output

2.2. Shell Variables

2.3. Reading Values into Shell Variables

2.4. Shell Arguments (\$i, \${i}, \$#, \$@)

2.5. Debugging Shell Scripts (-v and -x)

2.6. Testing Conditions

2.6.1. Testing File Attributes

2.6.2. Numeric Tests

2.6.3. Exiting Scripts

2.6.4. String Tests

2.6.5. Quoting Rules

2.6.6. Testing with Multiple Conditions

2.7. Conditional Statements

2.7.1. If Statement

2.7.2. Case Statement

2.7.3. While Statement

2.7.4. Until Statement

2.7.5. Shift

2.7.6. Exit Status

2.8. Regular Expressions

2.8.1. Concatentation

2.8.2. Repetition

2.8.3. Character Classes

2.8.4. Anchors

2.8.5. Alternation and Grouping

2.8.6. Testing if a Variable Matches a Regular Expression

2.9. Grep

2.10. Wc

2.11. Touch

- 2.12. Command Substitution**
- 2.13. For, Break, Continue Statements**
- 2.14. Expr**
- 2.15. Awk**
 - 2.15.1. Invoking Awk**
 - 2.15.2. Awk Scripts**
 - 2.15.3. Awk Patterns**
 - 2.15.4. Awk Regular Expressions**
 - 2.15.5. Awk Relational Expressions**
 - 2.15.6. Awk Pattern-Matching Expressions**
 - 2.15.7. Awk BEGIN and END Patterns**
 - 2.15.8. Awk Procedures**
 - 2.15.9. Awk Control Structures (if, while, for)**
- 2.16. Tr**
- 2.17. Basename, Dirname**
- 2.18. Sort**
 - 2.18.1. Invoking Sort**
 - 2.18.2. Prioritizing Fields When Sorting**
 - 2.18.3. Reverse Sort**
 - 2.18.4. Numeric Sort**
- 2.19. Fmt**
- 2.20. Cut**
- 2.21. Paste**
- 2.22. Head and Tail**
- 2.23. Sed**
 - 2.23.1. Invoking Sed**
 - 2.23.2. Line Editing**
 - 2.23.3. Using Line Editing Commands in Sed**
 - 2.23.4. Performing Multiple Sed Commands on a Match**
 - 2.23.5. Referencing the Sed Search String**
 - 2.23.6. Referencing Portions of the Sed Search String**
- 2.24. Gnuplot**
- 2.25. Split and Csplit**
- 2.26. Uniq**

- 3. Setting Up One's Environment**
 - 3.1. Environment Variables (setting, unsetting, printing)**
 - 3.2. Aliases (setting and removing)**
 - 3.3. Which, Whatis, Whereis**
 - 3.4. Setting One's Command Prompt**
 - 3.5. Source**
 - 3.6. Functions**
 - 3.6.1. Defining Functions**
 - 3.6.2. Passing Arguments to a Function**
 - 3.6.3. Using a Function from a Separate File**
 - 3.6.4. Returning a Value from a Function**
 - 3.7. Shell Setup Files**
 - 3.7.1. .login File**
 - 3.7.2. .tcshrc File**
 - 3.7.3. Other .*rc Files**
 - 3.8. Xterms**
 - 3.9. Command History**
 - 3.9.1. Command History Substitution**
 - 3.9.2. Extracting Portions of the Last Command**
 - 3.9.3. Shell Command Line Editing**
 - 3.10. Word Completion**