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Introduction to Perl Programming

Course Summary

Topics

- Getting started, Scalar Data
- Arrays, Control Structures, Debugging
- The Hash (Associative Array)
- Basic I/O
- Filehandles and File Tests
- Regular Expressions
- Formats
- Process Management
- String Manipulation
- Functions
- File and Directory Manipulation
- System Database Access
- Advanced Perl Features and CGI (Optional Section)

Audience

This course is designed for UNIX users, programmers, and system administrators who write tools or shell scripts, generate reports, or manipulate text files.

Prerequisites

Prior programming experience is strongly encouraged. Since this course does not spend time introducing the fundamental lexicon of computer programming, those with no programming background whatsoever will have a relatively difficult time. Prior experience with C, C++, Java or any other language employing C-like syntax would be especially helpful.

Duration

Three days

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Introduction to Perl Programming

Course Outline

I. Getting started, Scalar Data
- A. History of Perl, Using the Interpreter
- B. String and Numeric Scalar Data
- C. Operators and Precedence
- D. Reading Input
- E. Using Variables

II. Arrays, Control Structures, Debugging
- A. Creating Arrays
- B. Assigning and Accessing Elements
- C. Array Operators
  1. push(), pop(), shift() and unshift()
  2. reverse() and sort()
  3. chop() and chomp()
  4. The map() operator
- D. Using the Debugger
- E. Conditional Testing (if / else/ elsif)
- F. Looping Constructs (while / for)
- G. Miscellaneous Control Structures
  1. The last and next Operators
  2. Labeled Blocks
  3. Expression Modifier

III. The Hash (Associative Array)
- A. Assigning and Accessing Hash Data
- B. Hash Operators

IV. Basic I/O
- A. The STDIN and STDOUT Streams
- B. Formatted Output with printf()

V. Filehandles and File Tests
- A. Opening and Closing Files
- B. The die() Operator
- C. File Operators
- D. The stat() and lstat() Operators

VI. Regular Expressions
- A. Simple Regular Expressions
- B. Special Character Patterns
  1. Single Character Patterns
  2. Multiple Character Patterns
  3. Grouping Patterns
  4. Anchoring Patterns
- C. Ignoring Case
- D. The pos() Operator and Other Operators

VII. Formats
- A. Defining Formats
- B. Fieldholders
- C. Invoking a Format
- D. Page Handling

VIII. Process Management
- A. Using the system() Operator
- B. Backquotes for Command Substitution
- C. The fork(), exec() and wait() Operators
- D. Signal Handling

IX. String Manipulation
- A. Finding a Substring
- B. Extracting and Replacing a Substring
- C. Using sprintf() for In-Memory Formatting
- D. Sorting
- E. Transliteration

X. Functions
- A. Defining and Invoking Functions
- B. Returning Values from Functions
- C. Passing Arguments to Functions
- D. Scoping Issues
- E. The wantarray() Operator
- F. Some Built-in Subroutines
- G. Creating a Function Library

Introduction to Perl Programming

Course Outline (cont'd)

XI. Filesystem Manipulation
- A. File and Directory Manipulation
  1. Changing Directories
  2. Globbing (Wildcard Expansion)
  3. Directory Handles
  4. Removing and Renaming Files
  5. Creating Links
  6. Modifying Permissions
  7. Changing File Ownership
  8. Modifying Timestamps

XII. System Database Access
- A. Obtaining User and Group Information

XIII. Advanced Perl Features and CGI (Optional Section)
- A. References
- B. Classes and Objects
- C. Perl and CGI (Common Gateway Interface)
- D. Database Access