



transforming performance through learning

Perl 5 Introduction - QAPLINTRO

Course Details

Days 3
Course code QAPLINTRO

Course Outline

Overview

This is an introduction to the Perl language yet covers enough to be able to produce useful programs and to maintain basic scripts.

This course is suitable for programmers and system administrators seeking to write fast, powerful and efficient report generating programs to manipulate data files and logs, or who need a more powerful language to extend shell scripts. Programmers and analysts intending to implement Perl programs, e.g. HTML generation, application control, and report generation will find it a suitable first step.

The course environment enables delegates to use either Windows or Linux - or even both if they wish to make comparisons.

Prerequisites

Students should be familiar with at least one programming language: UNIX shell scripting background is sufficient. No previous knowledge of Perl is assumed.

Delegates will learn how to

- Write and run a Perl 5 script
- Understand Perl 5 language elements
- Recognize simple and complex variable types and select appropriately
- Use Perl 5 operators and built-in functions
- Understand procedural flow control in Perl 5
- Program basic input/output
- Run and control other programs from Perl
- Write powerful report generating programmes implementing Regular Expressions

- Take advantage of the vast library of Perl 5 modules and subroutines

Course Outline

Chapter 1: Language Basics

- Course objectives
- Perl documentation
- Perl history
- Perl availability
- Perl popularity
- Interpreter environment
- Running a perl script
- Anatomy of a perl script
- Controlling the interpreter
- General Perl syntax
- A look ahead

Chapter 2: Fundamental Variables

- Variable types
- Variable definitions
- About scalars
- Defined and undefined scalars
- Scalar literals
- Arrays and hashes introduced
- Variable interpolation
- Predefined variables
- Some useful literal constants

Chapter 3: Arrays and Hashes

- About arrays

- Array constructors
- Array constructors
- `$array` magic
- Array slices
- About hashes
- Hash literals
- Hash slices

Chapter 4: Expressions and Operators

- Perl operators
- Numeric scalar operators
- Precedence and associativity
- String scalar operators
- Compound assignment operators
- Increment and decrement operators
- Comma operator
- Assignment in list context
- Context and type conversions

Chapter 5: Scalar Functions

- Numeric functions
- The magic variable `$_(1)`
- String functions
- String functions: `index`
- String functions: `substr`
- Assigning to substrings
- String functions: `split`
- String functions: `join`

Chapter 6: Decision Making in Perl

- Basic conditional statements
- Boolean and logical operators
- What is truth?
- Short-cuts for the lazy
- File condition functions
- Loops
- foreach
- The BLOCK
- Lexical variables - reminder
- Unconditional flow control

Chapter 7: Array and Hash Functions

- Array and list functions
- Array functions: shift
- Array functions: pop
- Array functions: unshift
- Array functions: push
- Array functions: splice
- List functions: reverse, sort, grep, map
- Hash functions
- Hash examples
- undef and exists
- defined vs. exists
- Deleting hash elements

Chapter 8: Input and Output

- The basics

- File handles
- Default file handles
- New file handles
- Reading files
- The magic variable `$_(2)`
- Writing files
- Formatted output - `printf`
- Typical behaviour of filters - `ARGV`
- Common input idiom
- Counting lines and bytes in Files
- Changing the default output handle

Chapter 9: Running Processes

- Family life
- Running a process from perl
- `Back ticks`
- The system function
- Creating pipelines
- Command pipelines
- Special variables

Chapter 10: File System Interaction

- The filename globbing operator
- Working with files and directories
- Working with files and directories
- Detailed file information
- Stat conversion

- Directory information

Chapter 11: Regular Expressions

- Regular expressions
- Uses of regular expressions
- Perl regular expressions
- Perl regular expression patterns
- Basic pattern match syntax
- Basic substitution syntax
- Processing of regular expressions
- Matching alternatives
- Anchors
- Class shortcuts
- Repeat quantifiers
- Quantifiers
- What did we match?
- What did we match? Sub-patterns
- More capturing sub-patterns
- Substitution
- Substitution with interpolation

Chapter 12: Subroutines and Modules

- Subroutines
- Subroutine return values
- Subroutine return values: example
- Passing subroutine arguments
- Subroutine arguments
- Getting at subroutine arguments

- Lexical variables revisited
- Find the bugs!
- Modules
- The library directories
- Using subroutines from modules
- Using subroutines from modules
- Standard modules

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