

Perl Programming on UNIX

Topics

Overview of Perl

- What is Perl?
- Running Perl Programs
- Sample Program
- Another Sample Program
- Yet Another Sample
- Labs

Perl Variables

- Three Data Types
- Variable Names and Syntax
- Variable Naming
- Lists
- Scalar and Lists Context
- The repetition operator
- Labs

Arrays and Hashes

- Arrays
- Arrays Functions
- The Foreach Loop
- The @ARGV Array
- The grep function
- Array Slices
- Hashes
- Labs

Quoting and Interpolation

- String Literals
- Interpolation
- Array Substitution and Join

- Backslashes and Single Quotes
- Quotation Operators
- Command Substitution
- Here Documents
- Labs

Operators

- Perl Operators
- Operators, functions and precedence
- File test operators
- Assignment operator notations
- The range operator
- Labs

Flow Control

- Simple Statements
- Compound Statements
- The for Loop
- The foreach Loop
- Labs

I/O: Input Operations and File I/O

- The open function
- The input operator
- The print function
- Reading Directories
- Labs

Regular Expressions

- Pattern Matching Overview
- The substitution operator
- Regular expressions
- Special characters
- Quantifiers (*,+,?,{,})
- Assertions

- Labs

Advanced Regular Expressions

- Substrings
- RE Special Variables
- RE Options
- Multi-line REs
- PerlRE Extensions
- Labs

Subroutines

- Passing Arguments
- Private variables
- Returning values
- Labs

References

- Creating References
- Using References
- Passing references as arguments to subroutines
- Anonymous Composers
- The Symbol Table
- Labs

Complex data structures

- Two dimensional arrays in Perl
- Anonymous Arrays and Hashes
- Arrays of Arrays
- Arrays of References
- A Hash of Arrays
- A Hash of Hashes
- And so On
- Labs

Packages and Modules

- Packages

- BEGIN and END routines
- require vs use
- Modules
- The bless function
- Labs

Introduction to object-oriented programming in Perl

- What is object-oriented?
- Classes, objects and methods in Perl
- Inheritance, the is-a relationship
- Containment, the has-a relationship
- Overloaded operators
- Destructors
- Labs

Binary Data Structures

- Variable vs Fixed
- Handling Binary Data
- The pack function
- The unpack function
- The read function
- C Data Structures
- Labs

Multi-tasking with Perl

- UNIX multitasking concepts
- Process creation with fork
- Program loading with exec
- File descriptor inheritance
- How UNIX opens files
- One-way Data flow - Pipes
- Final Result
- Labs

Sockets Programming in Perl

- Clients and servers
- Ports and services
- Berkeley sockets
- Data structures of the sockets API
- A client/server example
- A little web server
- Labs

Appendix A - The Perl Distribution

- Where can you get Perl?
- How do you build Perl?
- What gets created and installed?
- Differences between platforms

Appendix B - The Perl Debugger

- Debugger commands
- Non-debugger commands
- Listing Lines
- Single stepping
- Setting and clearing breakpoints
- Modifying and Debugger
- The-w and -D Flags
- Labs