

Advanced Programming in Perl Technologies

COURSE DESCRIPTION

This course teaches advanced concepts and capabilities that can be used to write procedures in **Perl (V5)**, especially the new interfaces that use object-oriented features.

COURSE OBJECTIVES

Each student will be able to use **Perl** techniques and commands to write scripts to perform various user and administrative tasks, implementing advanced features of the language.

COURSE TOPICS

Using Perl References

- Purpose of references
- Querying a reference
- Symbolic references
- References to functions
 - named functions
 - anonymous functions
 - callbacks
- Multi-dimensional arrays
- Complex data structures

Using Perl Typeglobs

- Perl** variables, symbol tables, and scope
- Typeglobs compared with references

Perl Modules and Packages

- Basic packages
- Packages and component files
- Initialization and destruction
- Accessing the symbol table
- Preparing a package for distribution with **h2xs**

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COURSE TOPICS

Object Oriented Perl Programming

- Objects in Perl
- Inheritance
- Argument passing mechanisms
- Methods of Data Persistence
 - FreezeThaw.pm
 - Storable.pm
 - MLDBM.pm

Perl Scripts for Networking with Sockets

- Server-side functions and setup
- Client-side functions and setup

Miscellaneous Topics

- Installing Perl modules from the CPAN
- Adding documentation to a module/program

Launching Tk Applications

- Building the Tk extensions within Perl
- Writing and executing Tk-Perl scripts

Interfacing Tk Applications with Perl

- Tk-extension widget templates
- Using Tk-extension widgets within Perl
 - Buttons - push,radio,check,menu
 - Dialogs - dialogbox,text,message
 - Scrolls - scrollbar,listbox,file browser
 - Help - balloon and status messages
 - Undocumented and composite widgets

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COURSE TOPICS

Overview of Data and Databases

- Usage on various types of systems
- Historical interfaces
- Role of Perl in data acquisition and access

Relational Databases

- Methodology
- Quick overview of SQL (statements)
- Datatypes
- Querying data
- Creating and destroying tables
- Modifying data in tables

The Perl Database Interface Extensions

- Obtaining necessary files
- Extending Perl with DBI
- DBI architecture (within **Perl**)

Programming the Perl DBI

- Handles
- Data Source Identifiers
- Database connection / disconnection
- Error handling
- Miscellaneous utility methods
- Simple queries
- Non-SELECT statements
- The do() and prepare() methods
- Attributes and metadata
- Transaction locking

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COURSE TOPICS

CGI Capabilities in Perl Scripts

Interactions between a WebServer and **Perl** scripts

Variables

user-defined

Perl built-ins

defined by the Web server

Pre-built **Perl** library parsing functions

Using **CGI.pm**

COURSE DURATION

This course normally requires **three (3)** or **four (4)** days, approximately 50% lecture and 50% lab time.

COURSE PREREQUISITES

Completion of the **Programming in Perl Technologies** course is assumed, or a knowledge of the **Perl** programming language.