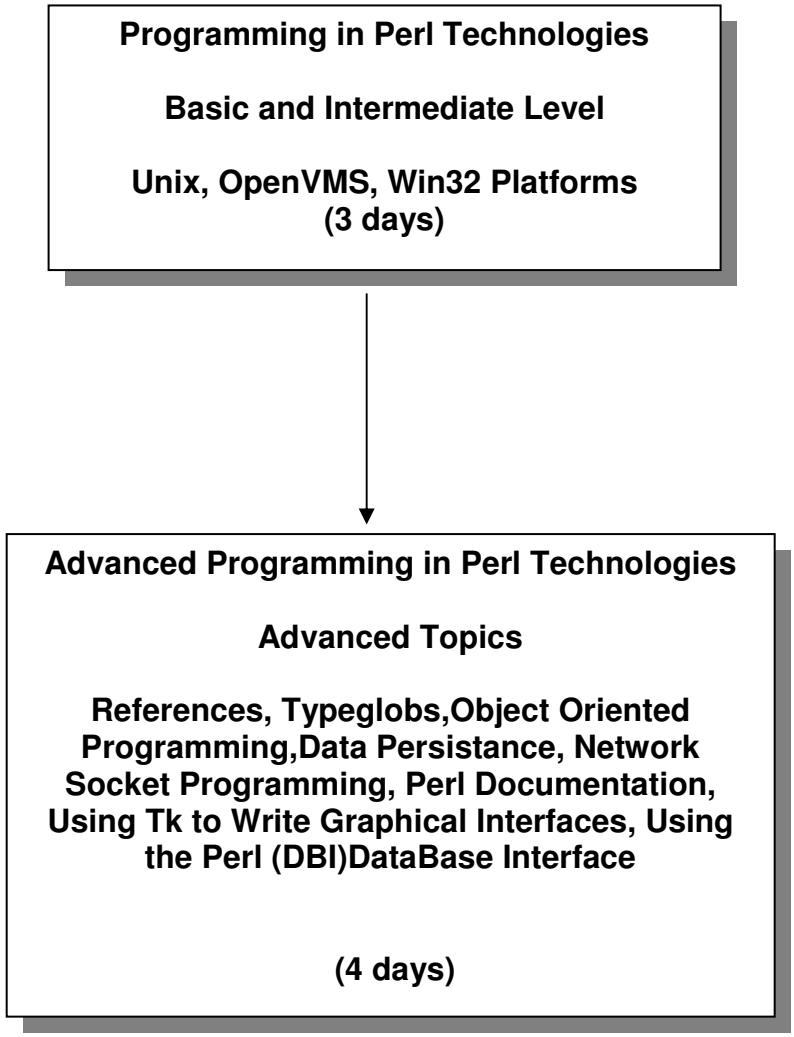
# Perl Programming Courses

**(All Unix, Linux, and Windows platforms)**

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# Programming in Perl Technologies

## COURSE DESCRIPTION

This course teaches both the programming interface and the techniques that can be used to write procedures in **Perl** (Practical Extraction and Report Language). **Perl** is now available for all system platforms, and is usually provided by the system's distributor (except **Windows**).

## COURSE OBJECTIVES

Each student will be able to use **Perl** techniques and commands to write scripts to perform various user and administrative tasks.

## COURSE TOPICS

**Overview of Perl**

- Purpose of the language
- History of the development of **Perl**
- Control capabilities:
  - files
  - processes
  - network
- obtaining **Perl** and building / installing
- obtaining modules from CPAN

**Writing Perl Scripts**

- Layout of a **Perl** procedure
- Execution methods
- Types of variables
  - scalars
  - lists (arrays)
  - associative arrays (hashes)
  - **Perl** built-ins
  - globals
- Pragmas
  - usage in **Perl** scripts
  - documentation
  - implementation

# Programming in Perl Technologies

## COURSE TOPICS

**Operators**
- precedence
- arithmetic
- increment/decrement pattern matching
- relational
- conditional
- assignment

**Perl Programming Constructs**
- Looping statements
- Decision statements

**Perl Expressions**
- Regular expressions review
- Expressions common to **Perl**/Unix
- Expressions unique to **Perl**

**Perl File I/O**
- Using ARGV value(s)
- Using Filehandles

**Interfacing Perl with the Operating System**
- System calls
- Process control
- File manipulation
- Adding and using (contributed) Perl modules

**Subroutines in Perl procedures**
- Using as functions
- Passing arguments (scalars)
- Passing arguments (arrays)
- Introduction to references

# Programming in Perl Technologies

## COURSE TOPICS

**Using Perl Extension Functions**
Location of procedures
Types of extensions
The **require** statement
The **use** statement

## COURSE DURATION

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

## COURSE PREREQUISITES

Completion of the **Fundamentals of Unix (or Linux)** course is assumed (if working on a **Unix** / **Linux Perl** platform. Usage of **NOTEPAD** for **Windows**-based **Perl** is assumed. A knowledge of **awk** is useful but not mandatory.

# 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**

# Advanced Programming in Perl Technologies

## COURSE TOPICS

**Object Oriented Perl Programming**

- Objects in Perl
- Inheritance
- Argument passing mechanisms
- Methods of Data Persistance
  - 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

# Advanced Programming in Perl Technologies

## 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

# Advanced Programming in Perl Technologies

## 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 **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.