

TTNW250: Mastering Advanced Perl (4 days)

Course Title / Code: TTNW250 Mastering Advanced Perl

Duration: 4 days

Skill Level: Advanced

Audience: Experienced Perl Programmers

Delivery Format: Available for onsite private classroom presentation, or live online / virtual presentation

Customizable: Yes

Lab / Workshop Format: Approx 50/50 lab to lecture: Extensive hands-on programming labs; Expert lecture combined with open discussions and in-depth demonstrations.

Machines required? : Yes

Delivery Format: Available for onsite private classroom presentation, or live online / virtual presentation

Customizable: Yes

Pricing: Trivera Technologies is a 100% female-owned small business with a GSA contract vehicle in place. Corporate rates, group discounts, public schedule and special offers are available. Please inquire for details.

Mastering Advanced Perl is a three-day, in-depth hands on advanced Perl training course that will enable students to solve advanced problems with the Perl programming language. Students will leave this class with an understanding of the advanced capabilities of the Perl programming language.

► **Course Objectives: What You'll Learn**

Working in an engaging, lab-intensive hands-on environment, lead by our Perl expert practitioner, students will:

- Learn to debug Perl applications
- Learn to efficiently manipulate lists in Perl
- Learn to work more effectively with Perl packages
- Learn to work with Tied Variables in Perl
- Learn to manipulate databases with Perl
- Learn to effectively use Perl Modules
- Learn to work with Perl/Tk
- Learn to extend Perl with C/C++
- Learn to embed the Perl Interpreter into a program
- Learn to create your own Perl modules

This course can be easily tailored to better meet your learning objectives. Please inquire for details and options.

► **Audience & Pre-requisites: Who Should Attend**

This **advanced level** course is geared for experienced Perl programmers. Prior practical experience with C or C++ programming is also recommended.

► **Suggested Learning Path & Course Options**

Take Instead: For an extended introduction to Perl, take TTEP101 which is a superset of the TTEP100 Perl Scripting course.

- TTEP101 Perl Programming Fundamentals

Take Before: Attending Students should have a skill set comparable to or consider attending:

- TTCU100: Introduction to Unix
- C or C++ Programming Fundamentals

Please contact us for recommended next steps tailored to your longer term education, project or development objectives.

► **Experiential Learning: Hands-On Labs**

This class is “technology-centric”, designed to train attendees in essential advanced Perl development skills, coupling the most current, effective techniques with the soundest coding practices.

This workshop is about **50% hands-on lab and 50% lecture**. Throughout the course students will be led through a series of progressively advanced topics, where each topic consists of lecture, group discussion, comprehensive hands-on lab exercises, and lab review. Multiple detailed lab exercises are laced throughout the course, designed to reinforce fundamental skills and concepts learned in the lessons.

At the end of each lesson, developers will be tested with a set of review questions to ensure that he/she has fully understands that topic.

► **Student Materials: What You'll Receive**

Our robust course materials include much more than a simple slideshow presentation handout. Student materials include a comprehensive hard-copy course manual, complete with detailed course notes, code samples, diagrams and current reference materials, all directly related to the course at hand, indexed for



ease of use. Step-by-step lab instructions and project descriptions are clearly illustrated and commented for maximum learning.

Our detailed lab workbooks are complete with software-specific instructions, screen shots and step-by-step tutorials for using the software you select. In most cases we can easily port our classes to run in the environment of your choosing.

In addition to everything students need for the course, the **LoadNGo Instant Classroom Kit** described above also includes of workshop labs and solutions; non-restricted workshop software, APIs, documentation, technical education papers, and specifications and tutorials pertinent to the training course. Our course kits are designed to serve as an excellent and useful reference set, long after we leave your classroom.

► **Easy Set Up! LoadNGo™ Instant Classroom Kit**

For course deliveries or virtual presentation using open-source tools, we'll provide our unique **LoadNGo Instant Classroom Kit**, which enables students to run the entire course off of a DVD that hosts the entire course set up software, labs, and other pertinent useful educational resources, whitepapers and more. You only need to provide the hardware and appropriate O/S, and we'll do the rest. No installation needed. **Great for secure environments.** Minimum set up burden for your team or firm, with maximum results for your students.

No matter which set up option or software your firm requires, we're pleased to provide a detailed set up guide for all private or on-site courses, and as much assistance as you require to prepare your students or classroom for the course.

Our support personnel and instructors can be contacted for any advice you may require to prepare your classroom and/or students for attendance.

► **Optional Pre / Post-Testing & Skills Assessment**

We work with you to ensure that your resources are well spent. Through our basic course pre-testing and/or post-course assessments, we ensure your team is up to the challenges that this course offers. Our goal is to structure the best solution to ensure your needs are met, whether we customize the material, or devise a different educational path to prepare for this course.

► **Bridging the Gap: Collaborative Mentoring Services**

Our team of technical experts is also available for various project assistance services to help your team apply their newly-learned classroom skills to their real-world project in a meaningful, practical way, right after the training ends.

Our custom **collaborative mentoring programs** integrate with or extend your team's classroom training experience, to help bring these skills into existing (or inherited) legacy projects, into new projects, or to simply keep your students sharp them in between projects. Our programs can be highly involved and closely integrated with your project timelines or group development efforts, or can be less involved, serving simply as an overarching educational framework or 'spot check' to keep your group skills moving forward in between projects or waiting for projects to begin. Please contact us for details about this exciting custom service.

Workshop Topics Covered

Session: Debugging Perl

- Warnings
- Diagnostic Messages
- Carping, Confessing, and Croaking
- Strict Checks
- Compiler Pragmas
- Debugging Flags
- Your Perl Configuration
- The Devel::Peek Module
- The Data::Dumper Module

Session: Expert List Manipulation in Perl

- The grep Operator
- Lists, Arrays, and List Operators
- Context
- Context and Subroutines
- Initializing Arrays and Hashes
- Reference Syntax
- Auto-vivification
- Defined Values

- Other List Operators
- Usage of map, grep, and foreach

Session: Blocks and Code References in Perl

- Blocks
- Subroutines
- Subroutine Prototypes
- Code Refs and Anonymous Subroutines
- Typeglobbing for the Non-Squeamish
- Local (Dynamic) Variables
- Lexical Variables
- Persistent Private Subroutine Variables
- Closures
- The eval Operator
- The Block Form of eval
- The String Form of eval
- Block Form of eval for Exception

Handling

Session: Perl Packages

- Review of Packages
- BEGIN and END Blocks
- Symbol Tables
- Package Variables
- Calling Package Subroutines
- Importing Package Symbols
- Exporting Package Symbols
- Using the Exporter Package
- The use Function
- AUTOLOAD and @ISA
- AutoLoader and SelfLoader

Session: Objects and Classes in Perl

- Object-Oriented Stuff
- Making Perl Object-Oriented
- References
- The bless Function

- So, What's a Blessed Thing Good For?
- Calling Class and Object Methods
- Object Methods
- Writing Classes
- Constructors
- Inheritance
- What Perl Doesn't Do

Session: Tied Variables in Perl

- Why Use tie?
- Tying a Scalar
- Inside Tied Variables
- untie
- Another Tied Scalar Example
- Tying an Array
- A Tied Array Example
- Tying Hashes
- Tie::Hash and Tie::Array
- Tying Filehandles
- What Are DBM, NDBM, GDBM, SDBM, etc?
- Using the DBM Modules

Session: Installing and Using Perl Modules

- Laziness, Impatience, and Hubris
- CPAN
- Using Modules
- Installing a Perl Module
- Unpacking the Module Source
- The Configuration Step
- The Build Step
- The Test Step
- The Install Step
- Using CPAN.pm
- Using Module Documentation

Session: Introduction to DBI/DBD in Perl

- The Old Way - DBPerls
- A Better Way - DBI/DBD
- Database Programming
- Handles
- Connecting to the Database
- Creating a SQL Query
- Getting the Results
- Updating Database Data
- Transaction Management
- Finishing Up

Session: DBI/DBD SQL Programming

- Error Checking in DBI
- Getting Connected

- Drivers
- Using Parameterized Statements
- Statement Handle Attributes
- Other Handle Attributes
- Column Binding
- The do Method
- BLOBs and LONGs and Such
- Installing DBI Drivers

Session: Introduction to Perl/Tk

- Tcl, Tk, Tcl/Tk, Tkperl, Perl/Tk, etc.
- Perl/Tk
- Creating a Perl/Tk Application
- GUI Programming Overview
- Adding Widgets
- Scrolled Widgets
- Configuring Widgets
- Menus
- More Fun with Menus
- Using FileSelect

Session: Perl/Tk Programming

- Tk::Error and Tk::ErrorDialog
- Configuring Widgets
- Geometry Management
- Geometry Management with grid()
- The Frame Widget
- Defining Widget Callbacks
- Bindings
- Nonblocking I/O with fileevent()
- Tags
- Other Widgets
- Other Tk Commands
- Getting Tk

Session: Extending Perl with C/C++

- Extending the Perl Interpreter
- Overview of Perl5 XSUBs
- Get Started with h2xs
- Set up the Perl Wrapper Class
- Write the XS Code
- The XS File
- Write Some Test Code
- What Do You Want?
- Returning Values on the Stack
- A Walk Through an XSUB
- Arguments to XSUBs
- Other h2xs Options

Session: Embedding the Perl Interpreter

- Why Embed Perl?
- Embedding Perl in a C Program

- Compiling the Program
- perlmain.c
- Perl Data Types
- Macros and Functions
- Manipulating Scalars
- Memory Management
- Script Space
- Evaluating Perl Expressions
- Dynamic Loading
- Multiple Perl Interpreters

Session: Module Development and Distribution in Perl

- Distributing Modules
- Get Started with h2xs
- Files Created by h2xs
- The Build Library (blib) Directory
- Unit Testing and test.pl
- Versions
- Using blib
- POD
- POD Translators
- Cutting a Distribution
- Other Niceties
- Makefile.PL

Session: Design and Implementation in Perl

- Think First
- Object-Oriented Design
- Object-Oriented Development
- Library Modules
- Utility Programs
- Filters
- Performance
- Timing with Benchmark

Need more details? Please note that a more detailed outline of the course table of contents, lists of lab exercises and project descriptions is available. Please contact us at Training@triveratech.com for info.

Need courseware? This course is fully customizable, and also available for license with complete support for qualified organizations. Please contact Courseware@triveratech.com for details.

► Why Work With Trivera Technologies?

Whether you are a project leader choosing a training provider or course to bring to your team, or an organization or an instructor looking to potentially license or use course materials to train your own team, or a student looking for an exciting, targeted training class to attend or to recommend to your colleagues - **Our single focus is to make YOUR training event or experience a success.** Here's why choosing Trivera Technologies as your Perl and web development training resource takes the risk right out of your decision making process...

- **We provide a solid web development foundation.** Students will be prepared for designing and implementing real Perl programming solutions, right after the class ends.
- **Our courses are focused - no "fluff" included.** We offer more than a "laundry list" approach to teaching. All lessons have clear objectives, are fundamental to core practices, and are reinforced by hands-on labs and solid practical examples. Each lesson has performance driven objectives that ensure students will learn technologies essential to core skills – nothing more, nothing less.
- **Our materials are comprehensive, and current.** Our comprehensive manuals include not only a hard copy of the course presentation, but also detailed reference notes, pertinent diagrams and charts, current lists of suggested online resources and articles, and often tutorials or white papers geared to the topics at hand. Our dedicated course development team keeps everything as current as possible with both industry trends and certification requirements and standards to ensure your team is getting the most current information available.
- **We foster "Learning by Doing".** Progressive exercises are designed in such a way that students get a firm grasp on fundamental skills while they work toward designing a complete solution. All work is take-home, and all solutions, as applicable, are presented in an easy to use self-study format for future use and review.
- **We're skills-centric.** Although our team has extensive experience using a variety of tools and solutions, our core content is "technology-centric". Our aim is to teach you the best skills and solutions out there – not to sell you software from any particular vendor.
- **We have to adhere to higher standards.** As a **courseware provider** to other organizations, training firms or independent instructors, our content and hands-on lab materials are licensed internationally by dozens of firms, and are therefore subject to very stringent quality requirements. Not only will your organization benefit from our own technical team's technical expertise, but also the feedback of hundreds of students and trainers using these materials, worldwide, on a regular basis. This unique fact guarantees that our materials are not only robust and interesting, but also technically correct, current and of the highest quality and usability.
- **We're published authors, online contributors and regular industry speakers.** Our team was selected to write the online *J2EE, EJB, EJB CMP-CMR and Web Services Tutorial Series for IBM developerWorks®* (www.ibm.com) These are the same instructors who train our classes and author the courseware. Most of our trainers/consultants have also authored additional articles on a variety of advanced IT topics, and are recognized speakers and presenters on the industry technical seminar circuit. Our team is comprised on several successful published authors. Members of our team have written or contributed to: *Eclipse Kick Start, Mastering Eclipse; Professional Jakarta Struts; Python Programming; Using Java Tools for Extreme Programming; Mastering Resin; Mastering TomCat and others.*
- **Our services are guaranteed.** Whether you're a stakeholder organizing your firm's educational services, a student in our live or virtual classroom or a trainer using our materials to educate your own client or team – **Our core mission is to make YOU a success in the classroom.**

► For Additional Information

Need dedicated training? All courses can be brought onsite or run virtually for a **private presentation, anywhere around the world,** customized to suit your unique requirements or goals. Please contact Training@triveratech.com for course details, Public Schedule dates and locations, and Special Discount Offers.

Need courseware? **Let us take the risk out of your classroom delivery!** All materials are also available on a worldwide basis for corporate license with complete instructor support and free corporate branding. Our LoadNGo Set up is available to partners as well! We guarantee our pricing and service. Samples of our course materials, as well as live client references for all of our services are available upon request. Please contact Courseware@triveratech.com for details.

For more information about our training, mentoring or courseware development or licensing options, or to see our complete list of course offerings and services, please visit us at www.triveratech.com, email Training@triveratech.com or call 609.953.1515.



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Please contact us for details & pricing.