

TTEP101: Mastering Perl Programming Foundation (5 days)

Course Title / Code: TTEP101: Mastering Perl Programming Foundation

Duration: 5 days

Skill Level: Introductory and beyond

Audience: Programmers new to Perl

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.

Perl provides numerous advantages over other programming languages with its built-in support for complex data structures, the most advanced text processing features of any popular programming language, subroutines that support variable-length argument lists and multiple return values, and standard modules for accessing databases and creating web pages.

Mastering Perl Programming Foundation is a five day, in-depth hands-on Perl training course that provides students with a comprehensive introduction to the Perl programming language, from introductory through advanced concepts and skills. Students who attend this course will learn to gather user input, perform sophisticated string manipulation, access information held within a database, write information to a database, and learn to take advantage of Perl modules.

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

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

- Practical Extraction and Report Language (PERL)
- String manipulation: assignment using various forms of quotation, concatenation, transliteration, and interpolation.
- Mathematical processing: numeric literals, arithmetic, conversion from strings, and random number generation.
- Logical tests: Boolean operators, string and numeric comparison operators, grouping, and interpretation of scalars as "true" or "false".
- Advanced pattern matching using regular expressions: quantifiers, character classes, meta characters, anchors, and other special characters.
- Arrays and Hashes: assignment methods, setting and getting individual elements, operators, sorting, transforming, filtering arrays, anonymous hashes, and building complex data structures using references.
- Flow control: for loop, for each iterative loop, while and until loop, and block control statements.
- Subroutines: creation, passing and retrieving arguments, returning single and multiple values, and recursion.

- Formatted Output
- References: scalar, array, and subroutine references, anonymous arrays and code blocks, and passing subroutines as parameters
- File handles and file test operators
- File I/O for reading, writing, creating, renaming, and deleting files
- Directory I/O for making, moving, removing, and reading the contents of directories

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 **introductory-level** course is intended for Systems Programmers, Application Developers, and Multi-tiered client/server developers. To gain the most from this course, the student should be comfortable with the UNIX/Linux family of operating systems and have basic procedural programming experience.

This course is taught on a UNIX Server which we log onto from a Microsoft Desktop.

► Suggested Learning Path & Course Options

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

- TTE1010 - Introduction to Unix

Follow-on Courses: Post training-courses would include:

- TTEP201 - CGI Programming using Perl
- TT2120 - Java Programming Essentials for Non-OO Programmers

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: Language Overview

- Perl Overview
- The Perl Interpreter
- Running a Perl Application
- The Perl Help System
- Our First Perl Statement

Session: Language Basics

- Language Basics
- Basic Language Rules
- Comments
- Scalar Variables
- Printing Scalar Variables; Quoting Scalar Variables
- <STDIN> as a Scalar
- Cleaning up after Scalars
- “Special” Scalars
- Safe Coding with Scalars
- Scalar Operators

Session: Arrays and List Data

- Arrays and List Data
- What is a List?
- Representing a List
- List Variables
- Assignment
- Retrieving List Values
- List Slices
- Special List Variables
- <STDIN> as a List
- Built-In List Functions
- The reverse Function
- The sort Function
- The push and pop Functions
- The shift and unshift Functions

Session: Control Structures and Looping

- Control Structures and Looping
- Statement Blocks
- The if Statement
- The Truth in Perl
- The unless Statement
- The if/unless modifiers.
- The while Statement; The until Statement
- The do {} while/until Construct
- The for Statement
- The foreach Statement
- Modifying Looping Behavior
- The last Statement
- The next Statement

- The redo Statement

Session: Hash Data

- Hash Data; Has Data Defined
- Hash Variables
- Built-in Hash Variables; Built-in Hash Functions
- The keys Function
- The values Function
- The each Function
- The defined Function
- The exists Function
- The delete Function

Session: Input/Output

- Input/Output
- STDIN, STDOUT, and STDERR
- More on STDOUT
- Formatted Output Using printf
- Format Control Strings
- Here Documents
- Using the <> (Diamond) Operator
- Creating Data Streams

Session: Functions and Subroutines

- Functions and Subroutines
- User Defined Functions
- Invoking a Function
- Passing Parameters
- Local Variables
- Function Return Values

Session: Regular Expressions

- Regular Expressions
- What is a Regular Expression?
- Regular Expression Operators
- The =~ Operator
- Single Character Matches
- Wildcard Character Matches
- Multiplicity Specifiers
- Anchors
- Remembering a Match
- Alternation
- Regular Expression Options
- The i Option; The g Option; The s Option; The o Option; The e Option

Session: Formatted Output

- Formatted Output; What is a Format?
- Format Definitions;

- Invoking a Format; Sample Format
- Specifying Field Holders
- Top Of Page Formats
- Special Format Variables

Session: Directory Operations

- Directory Operations
- File Test Operators
- The stat() and lstat() Functions
- Globbing
- Directory Functions
- The chdir() Function
- opendir() and closedir()
- The readdir() Function
- Directory Manipulation
- The unlink() Function
- The rename() Function
- The link() Function
- The symlink() Function
- mkdir() and rmdir()
- The chmod() Function

Session: Process Management

- Process Management
- Child Processes in Perl
- The system() Function; The exec() Function
- Asynchronous Processes
- The fork() Function
- Preventing Zombies
- Signal Handlers

Session: Packages and Modules

- Packages and Modules
- Defining a Package
- Accessing Data in Another Package.
- What Is Happening Behind the Scenes?
- Typeglobs
- Using Typeglobs to Access Package Data
- Package Files
- Perl Modules
- The Exporter Module
- Importing Symbols
- Lifecycle Code Blocks

Session: Complex Data Structures

- Complex Data Structures
- Data Structures
- References; Dereferencing

- Anonymous References
- Multidimensional Data Structures
- Accessing Multidimensional Data
- Putting it to work

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.



Trivera Technologies is a 100%
Female-Owned Small Business Concern
GSA Schedule # GS-35F-0188T
Please contact us for details & pricing.

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.