Perl (Course Content)

Pre-requisites:

Knowledge of any programming language (C / C++ / Shell Scripting)

Objective of the Course:

The participants should be in a position to understand Perl Scripts written by others. The participants should be in a position to write their own Perl Scripts. Perl Database Automation using DBI. Perl web programming using CGI.

Software Requirements

Ubuntu 14.xx (Root password + Internet Connection).
Java + Eclipse,
E-p-i-c Perl Plugin for eclipse
MySQL Server (don't provide root password)
cpan DBD::mysql (Driver)
cpan DBI (perl module)
cpan CGI (Perl Module)
cpan MQSeries
Apache Web Sever (for CGI only).
Sublime Text Editor

Note: Ubuntu can be installed on Virtual Machine (Vmware). It's free to download from ubuntu site. All above software are free to download.

Coverage:

- Brief History of Perl
- Executing Perl commands at the command line
- White Spaces
- Semicolons
- Commenting lines
- Special Characters (new line, tab, etc)
- Quoting strings
- Cross Platform Perl Scripts
- Working with variables
  - Scalars

- Arrays
- Hashes - Associative Arrays

Operators
- Arithmetic Operators
- Assignment Operators
- Logical Operators
- String Operators

Relational Operators
File Test Operators
I/O Statements
- Reading from keyboard
- Writing to Screen

Control structures
- Conditionals
  - if
  - unless
- Loops
  - while
  - do .. while
  - until
  - do .. until

Loop Control
- last
- next
- redo

LAB Exercise: User of Array and Function, Hash and Functions, list, join, split, Interpolation, q/, qq/, qw/, /u, /l etc.

Summary and Conclusion

Global Special Variables
Global Special Arrays & Hashes
Global Special File Handles
Global Special Constants
Special Variables

File Handling
- Opening the file
  - read mode

write mode
append mode
read-write mode
Reading from the file
Writing to the file
Closing the file

Simple Perl functions
Extracting characters from a string

Finding the index of a character in the string Extracting a substring from a string
Array Functions
Inserting elements in an array at specified position

Lab Exercise:

- Write a Copy command Perl Program. Use of <> and File handling
- Use of File Test command -X (-r, -o, -M, -e, -d etc)
- Use of Global Special Variable

Summary and Conclusion

Regular Expressions
Basic Regular Expressions
Advanced Regular Expressions
Scope of the variable
Dynamic Scope
Lexical Scope

References
Array References
Hash References
Constructing multidimensional arrays

Subroutines
parameter processing
Call By Reference
Call By Value

Packages and Modules

Defining a Module's interface
Making Variables Private to a module
Determining the Caller's Package
Automating Module Clean-up
Preparing a Module for Distribution
Speeding Module Loading with SelfLoader
Speeding Up Module Loading with AutoLoader
Overriding Built-in Functions
Reporting Errors and Warnings Like Built-Ins
Referring to Packages Indirectly
Building and Installing a CPAN Module

Lab Exercise :

1) Write a Subroutine for total of any Sequence
2) Write a Subroutine using @ARGV
3) Write a Subroutine using shift (parameter passing).
4) Build Packages using Package Variables (our)
5) Use of existing packages in Perl

Object Oriented Perl

Constructing an object
Destroying an Object
Managing Instance Data
Managing Class Data
Using Classes as Structs
Cloning Objects
Calling Methods Indirectly
Determining Subclass Membership
Writing an Inheritance Class
Accessing Overriden Methods
Generating Attribute Methods Using AUTOLOAD
Solving the Data Inheritance Problem Coping
with Circular Data Structures
Overloading Operators
Creating Magic Variables with tie

Working with Databases

DBI Module
Connecting to Database
Disconnecting from the database
Create a table

Insert a record in the table
Query the table
Update a record
Delete a record
Drop a table

Lab Exercise :

1) Create a Person class.
2) Write a Class Method and Object Method
3) Access Class Method and Object Method using New object
4) Inherit Person class in Employee Class
5) Add new method in Employee class
6) Override some method of parent class in Employee class
7) Create a Database in Mysql.
8) Create a Table using perl DBI
9) Insert single record using Perl DBI
10) Insert Multiple record using placeholder (?).
11) Update and Select records etc.

Introduction to MQSeries
Message queue
MQSeries client
MQSeries messages
MQSeries objects

use CGI
Configure Apache Server for CGI
scripting Create CGI form
Use of get, put, post method.
Perl CGI & DBI application.

The Perl Debugger

Entering and Exiting the Perl Debugger
- Entering the Debugger
- Exiting the Debugger

List in Stepping Through Programs
Displaying Variable Values
Breakpoints
Tracing Program Execution
Line Actions
Other Debugging Commands

Lab Exercise :

1) MQSeries CPAN modules
2) Writing your own MQSeries module
3) package MQSeries::Command::Base Sample Example
4) package MQSeries::Command::Request
5) package MQSeries::Command::Response;

Summary and Conclusion