

TCL/EXPECT

Current Version: oc-tclexp-5.2

Course Length: 3 days

Course Description: This three-day course provides the student with an introduction to creating Tcl and Tcl/Expect scripts.

Audience: Programmers, testers, and system administrators who wish to use Tcl/Expect in their environment.

Prerequisites: Programming experience in a structured language, such as C, C++, Java, or COBOL, is required.

Course Contents

Introduction to Tcl/TK

- Install/Set-up Tcl/TK
- History of Tcl
- Advantages and Disadvantages of Tcl
- Creating a Simple Tcl Program
- Interactive tclsh shell

Tcl Basics

- Math in Tcl
- Data Types
- Command Substitution
- Grouping
- Escaping Special Characters
- Special String Characters
- Commenting Your Script
- Receiving Input in Tcl

Variables

- Creating Variables
- Referencing Variable's Values
- Unsetting Variables

- Determining if a Variable Exists
- Predefined Variables

Lists

- What is a List?
- Creating Lists
- Returning Elements from Lists
- Creating Lists from Strings
- Creating Strings from Lists
- Modifying Lists
- Searching Lists
- Sorting Lists
- The concat Command
- The argv List

Arrays

- What is an Array?
- Creating Arrays
- Returning Elements from an Array
- Removing Data from an Array

Procedures

- Creating Procedures
- Passing Parameters to Procedures
- Variable Scope
- The return Statement

File and Process Handling

- Running UNIX or Linux Commands
- Running Commands on PCs
- Checking File Status
- File Handles
- Determining the Host Name

Introduction to Expect

- What is Expect?
- Expect's Capabilities

- Expect Shell
- Installing Expect
- Expect Options
- Where to Find More Information

Using the Send Command

- Introduction to the Send Command
- Sending Slowly
- Sending Humanly
- Sending Special Characters
- Send vs. Puts

Using the Expect Command

- Introduction to the Expect Command
- Expect Variables
- Pattern Pairs
- Setting Time Outs
- expect eof
- Ignoring Case
- Using Comments with Expect
- Turning Off Expect Output
- The close Command
- The wait Command

Using Globs and Regular Expressions with Expect

- Using Globs
- Using the * Glob Character
- The array Command
- The env Array
- The tcl_platform Array

Strings

- String Manipulation
- Finding the Length of a String
- Comparing Two Strings
- Matching a Pattern in a String

- Other String Operations
- Appending to a String

Regular Expressions

- What are Regular Expressions?
- The “*” and “+” Characters
- The “.” Character
- Character Sets
- The Anchor Characters
- The “?” Character
- Grouping Patterns
- Alternation
- The Backslash Character
- The regexp Command
- The reesub Command
- Other Commands that Use Regular Expressions

Flow Control

- Control Statements
- The if Statement
- The switch Statement
- Using while Loops
- Using foreach Loops
- Using for Loops
- Using break to Control Loops
- Using continue to Control Loops
- Catching Errors
- Exiting and Error Messages
- The ? and [] Characters
- Using Backslashes
- Using Regular Expressions
- Grouping and ‘Back Referencing’
- Using Both Globs and Regular Expressions

Processing Handling

- Running Multiple Processes

- The spawn_id Variable
- Using the -i Option
- Using Procedures
- Predefined Spawn Ids

Handling User Input and Controlling Output

- Sending Standard Output to the User
- Sending Standard Error to the User
- Receiving Input from the User
- Pausing the Script
- Disabling Terminal Echo
- Signals