

Semi Design

find you way in #VLSI with us

Tcl/Tk

Introduction to Tcl

- a. About Tcl
- b. Difference in Programming Languages
- c. Compiled vs Interpreted
- d. Why Tcl/Tk
- e. Features of Tcl
- f. Applications of Tcl
- g. How it Started
- h. Setting Up Tcl
- i. What is tclsh and wish
- j. Tcl Comparison Chart

Reference Books

- k. A Quick Demo to tclsh
- l. Getting Started – puts , gets
- m. Special Characters
- n. Rules: Key to Learn Tcl
- o. Variables – set, unset, info, incr
- p. Inside Tcl Interpreter
- q. Tcl Parsing
- r. QUIZ
- s. Special Variables
- t. Variable Scope
- u. Mathematical Expressions –expr
- v. System Method – clock, exec

Operators

- a. What are Operators
- b. Arithmetic Operator
- c. Relational Operator
- d. Logical Operator
- e. Bitwise Operator
- f. Ternary Operator
- g. Operator Precedence
- h. Test Your Understanding

Control Structures

- i. Decision Making
- j. If Statement

- k. If..Else Statement
- l. If..Elseif..Else Statement
- m. Example of If..Else
- n. Nested If Statement
- o. Switch Case Statement
- p. Switch Case Example
- q. Exercise Part-1

Looping Structures

- a. What is Looping
- b. Types of Loops
- c. For Loop
- d. For Loop Example
- e. Foreach Loop
- f. Foreach Loop Example
- g. While Loop
- h. While Loop Example
- i. Exercise Part -2
- j. Loop Control Structures
- k. Break Statement
- l. Continue Statement
- m. Exercise Part -3

Data Structures

- a. Array
- b. Size of Array
- c. Iterations in Array
- d. Associative Array
- e. Indices of Associative Array
- f. Iteration in Associative Array
- g. Multi-Dimension Array
- h. Accessing & Removing Elements in Array
- i. String
- j. String Escape Characters
- k. String Quiz
- l. String Inbuilt Methods
- m. String Append
- n. String Probing
- o. String Modifying
- p. String Searching
- q. String Comparing

- r. String Replacement
- s. Test Your Understanding
- t. String Exercise
- u. String Types
- v. String Formatting
- w. String Split
- x. String Join
- y. String Exercise

Lists

- a. Forming a List
- b. List Append
- c. List Concatenation
- d. List Length & Index
- e. List Set & Replace
- f. Modifying List Elements
- g. Extracting List Elements
- h. Searching in a List
- i. Sorting a List
- j. Test Your Understanding
- k. Sum of all Values in a List
- l. Reversing a List
- m. Exercise Part -4

Dictionary

- a. Dictionary Values & Size of Dictionary
- b. Getting all Keys or Values of Dictionary
- c. Dictionary Iterations

Procedures

- a. Passing Arguments to Procedure
- b. Passing a Variable Argument
- c. Passing Default Argument
- d. Example
- e. Recursive Procedures
- f. Procedures & Scope
- g. Exercise Part -5

Namespace

- a. Creating Namespace
- b. Nesting Namespace
- c. Exporting and Importing Namespace
- d. Forgetting Namespace

Package

- a. Creating a Package
- b. Using a Package

File and Directory Handling

1. File Basics
2. Opening a File
3. Closing a File
4. Reading From a File
5. Example of Reading
6. End of File
7. Writing In a File
8. Example of Writing
9. Exercise
10. Directory Handling
11. Creating, Deleting and Copying a Directory
12. More Directory Commands
13. More to Try Exercise

Error Handling

Regular Expression

1. Why Need Regular Expression
2. Regular Expression

Regular Expression

Test Your Understanding

Introduction to Tk

1. What is Tk
2. Features of Tk
3. Wish Interpreter
4. Quick Demo
5. Widget Overview
6. Creating a Widget

2. Basic Widgets

- a. Label Widget
- b. Button Widget
- c. Entry Widget
- d. GUI – X raised to power Y
- e. Message Widget
- f. Text Widget
- g. Create Your Basic Widget

3.

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4) Tk Managers

- a. Window Manager
- b. Layout Geometry
- c. Top Level Widget
- d. Creating and Destroying Window
- e. Geometry Manager

5) Layout Widgets

- a. Pack Widget
- b. Grid Widget
- c. Frame Widget
- d. Place Widget

6) Selection Widgets

- a. Radio Button Widget
- b. Check Button Widget
- c. Menu Button Widget
- d. List Box Widget

7) Mega Widgets

- a. Dialog Widget
- b. Spin Box Widget
- c. Scroll Bar Widget
- d. Scale Widget
- e. Notebook Widget
- f. Progress Bar Widget
- g. GUI Exercise

8) Font Widget

9) Image Widget

10) Canvas Widgets

- a. Drawing Widgets on Canvas
- b. Canvas Line
- c. Create a Ruler
- d. Canvas Rectangle
- e. Canvas Oval
- f. Canvas Arc
- g. Canvas Polygon

11) Canvas Widgets

- a. Example
- b. Canvas Text
- c. Canvas Bitmap
- d. Canvas Image

12) Event Handling

- a. Event
- b. Event Animation
- c. Event Delay
- d. Event Binding to Input Devices
- e. Linking Event with Button Widget

13) Final Exercise

14) Project

- a. Tic Tac Toe
- b. Basic Calculator
- c. Ping Pong