

## Korn Shell and Bash Shell Programming

Duration: 40 Hours | Price: INR 7000 **SAVE NOW! INR 6000 Until December 1, 2011**

### Students Will Learn

- Input/Output Techniques
- Looping and Conditional Branching
- Functions, Math, and Arrays
- String Manipulation
- Command Line Arguments
- File Handling and Manipulation

**Course Description:** This hands on Korn and Bash Shell scripting course provides a comprehensive introduction to writing Korn and Bash shell scripts. Besides covering fundamental syntax for program flow control, variable assignment and substitution, I/O control, and mathematical expressions, it emphasizes the powerful features of these shells, including built-in string operators, variable typesetting/conversion, functions, and coprocess communication and control. The creative use of standard UNIX and Linux utilities within scripts to solve problems is stressed throughout. The course is designed for the administrators and programmers who are developing, testing, or integrating software on UNIX or Linux, as well as for advanced UNIX or Linux users. Both the commonalities and differences between the Korn and Bash shells are examined, and students will have the opportunity to learn from examples coded in both shells.

**Course Prerequisites:** Familiarity with UNIX file system and commands.

### Korn Shell and Bash Shell Programming Course Overview

#### Introduction

- Comparing Popular Shells
- Korn Shell Compatibility for Bash
- Korn and Bash Shell Advantages
- Korn and Bash Shell Disadvantages
- Versions of ksh and bash
- Shell Command Syntax
- Comments
- Continuing a Command on Multiple Lines
- Special Characters
- Pattern Matching
- Complex Pattern Combinations
- Tilde Expansion

#### Process Management

- Process Priority
- Background Jobs
- Signals
- Traps
- DEBUG and EXIT
- ksh Co-Processing
- bash Co-Processing
- Pausing
- Time and Date
- Scheduling Execution
- Run Commands Later
- Aliases
- How the Shell Finds Commands
- Command History and Editing

## Writing Scripts

- Shell Programming Language
- Reserved Words
- How to Write and Run Scripts
- Debugging
- Data Types
- Using Variables
- The typeset Command
- Constants
- Special Predefined Variables
- Printing to the Screen (echo, print)
- The printf Command
- Accepting Input with ksh
- Accepting Input with bash
- Arithmetic Operators
- Floating-Point Numbers
- Bitwise Operators
- Grouping Operations
- Binary, Octal, and Hexadecimal
- Indexed Arrays
- Quoting
- Command Substitution

## Advanced I/O with Streams

- Redirection Review
- Opening Additional Streams
- Redirection Operators
- Inheriting and Duplicating Streams
- Caution with exec
- here Documents

## String Manipulation

- String Comparison
- String Relations
- Concatenation
- Substring Manipulations
- Wildcards and Pattern Matching

## Command Line Processing

- Getting Data Into Scripts
- Manipulating Positional Parameters (set, sort, shift)
- Analyzing Switches with getopt
- Options
- Reserved Variables (OPTARG, OPTIND, IFS)
- Setting Default Values

## Advanced Customization of the Shell Environment

- Command Line Options
- The set command
- Parents and Children
- Inheritance
- Exporting
- Dot Scripts
- Startup Scripts
- Environment Variables
- Setting Prompts in ksh and bash

## Programming Logic

- Conditional Expressions
- Testing Strings
- Testing Options
- Numeric Conditions
- Testing Completion Status
- Truth in Korn and Bash Shells
- The case Statement
- Loops: while and until
- The for Loop
- Menus and the select Statement
- Redirection and Loops
- When to Use Different Constructs

## Security

- Process Ownership
- suid and sgid
- Restricted Shells
- Other Security Features
- The newgrp Command
- Statement blocks
- case Statement

## Performance and Porting Issues

- Improving the Performance of Scripts
- Timing Commands and Scripts
- System Resources
- Setting Limits
- Portability Issues

**Additional File Processing Commands**

- Examining and Comparing Files
- Reporting Differences Between Files
- Comparing Files of Any Format
- Displaying Data in Octal and Hex
- Compressing Data
- Converting File Formats

**Functions**

- Writing Functions
- Returning Value from Functions
- Returning String Output
- Local and Global Variables
- Defining Functions
- ksh Autoload Functions

**Overview of File Manipulation Utilities**

- Editing a File from a Script
- Scripting with ed or sed
- UNIX and Linux Utilities to Manipulate Files
- Regular Expressions
- grep and egrep
- The Stream Editor sed
- Sorting in Scripts
- Generating Reports with awk
- Splitting Large Files
- Counting Words, Lines, and Characters
- Transforming File Contents
- Extracting Text Strings

**Compound Commands**

- Pipelines
- Command Lists
- And and Or Lists
- Background Jobs
- Command Grouping
- I/O Redirection

**Student Testimonials**

"One of the best training classes I have ever had. I will definitely recommend SPIRO to my friends for their training needs."

– **JAMES**

"Great instructor; very responsive to every question, would stay with us after hours." – **ELAKKIAY.G**

"I learned a great deal from this class. The knowledge I gained will help me greatly at work." – **KANNAN.S**

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