Getting Current with Delphi XE

This course is a four-day course on Delphi XE. This course is designed to provide the Delphi professional with the opportunity to explore the enormous wealth of features that have been added to Delphi in recent years. During this time, the Delphi integrated development environment, debugger, compiler, and especially the Delphi language have all undergone a radical transformation.
This course focuses on bringing Delphi developers up-to-date with Delphi's rich assortment of new features. In particular, features added in Delphi 2005 through Delphi XE are explored. The course starts with the VCL and RTL enhancements that have been added to Delphi. Next, we take a look at the language features. Included in this discussion is a focus on how Unicode-enabled Delphi affects your code as well as issues involved in migrating existing applications to unicode-enabled Delphi. We then explore the Delphi IDE and Debugger features added to Delphi. Next, we cover Delphi DataSnap and building DataSnap Clients and Servers. We finish up with a look at preparing for 64-Bit Delphi.

Although this course is intended for experienced Delphi developers, we can also customize this course for developers who have less experience with Delphi.

CARY JENSEN, PH.D.
All Rights Reserved.
Jensen Data Systems, Inc.
Phone: 281-359-3311
Email: info@JensenDataSystems.com
Course includes a course book plus all code examples presented along with additional code examples.

Getting Current with Delphi: VCL and RTL Enhancements

Delphi 2005
Integrated Unit Testing
.ButtonGroup and CategoryButtons
.DockTabSet
.Other Enhancements

Delphi 2006
Margins and Padding
.New Panel Types
.Tray Icon
.IntelliMouse Support
.Other VCL/RTL Enhancements

Delphi 2007
.Vista and XP Themes
Vista and Windows 7 Dialogs
MainFormOnTaskbar
ShellResources Component
dbExpress 4
Other Enhancements

Delphi 2009

Unicode Support
DataSnap 2009
Additional Vista/Windows 7 Improvements
    GlowSize
    TCustomButton
    TProgressbar
New and Enhanced Components and Classes
    TCustomButton Revisited
    TEdit
    TButtonedEdit
    TLabel
    TCategoryPanelGroup and TCategoryPanel
    TListView
    Ribbon Control
    TCustomHint and TBallonHint
Generics
Enhancements Borrowed from .NET
    System.TMonitor
    TStringBuilder
    Reading and Writing Files and Streams
    .NET-Inspired TObject Methods
Other Enhancements

Delphi 2010

Gestures
    Adding Gesture Support
    Gestures and Event Handlers
    Creating Custom Gestures
JSON Support
    Creating a JSON Object
    JSON Object to String
    String to JSON Object
    Retrieving Data from a JSON Object
    Marshaling and Unmarshaling
Virtual Keyboard
DataSnap Enhancements
Other Enhancements

Delphi XE

Regular Expressions
More DataSnap Enhancements
Thread Enhancements
Other Enhancements

Summary

Delphi Unicode Support and Issues

What is Unicode?
Unicode in Delphi
What to Watch Out For
- Assumptions About a Character’s Size in Bytes
- Assignment Between UnicodeStrings and AnsiStrings
Reading and Writing Files

Getting Current with Delphi: Language Features

Delphi 2005

New Visibility Directives
Namespace Support
FOR IN Loop
Function Inlining
Nested Types and Nested Type Constants
The & Character in Identifiers
Class Helpers
Unicode Characters in Non-published Identifiers

Delphi 2006

Enhanced Records
- Record Members
  - Overloaded Operators
  - Record Helpers
New Class Members
- Class Variables
  - Class Static Methods
New Class and Methods Directives
- Abstract Classes
- Sealed Classes
- Final Methods

Delphi 2007

Delphi 2009

Unicode
Generics
  - Using Generics
    - Generic Constraints
Anonymous Methods
  - Anonymous Method Types
    - Anonymous Methods and Closures
Scoped Enumerators
InnerExceptions
Other Language Enhancements
Delphi 2010

Expanded and Enhanced RTTI Attributes
Delayed Loading of DLLs
Interface Operators and Casting
Class Constructors and Destructors

Delphi XE

Summary

Getting Current with Delphi: IDE and the Debugger

Delphi 2005 IDE

New IDE with Dockable Panes
   The Structure Pane
   Floating Designer
Code Folding in the Editor
New Tool Palette with Search (Ctrl-Alt-P)
   Enhanced Tool Palette Behavior
Refactoring
   Symbol Renaming
   Variable and Field Declarations
   Resource Refactoring
   Extract Method Refactoring
   Find Unit
SyncEdit
History Manager
   The Content Pane
   The Info Pane
   The Diff Pane
Other IDE Enhancements
   Error Insight
   Help Insight
   Toggle Comments
   Filename in Object Inspector
   Group by Option in Find in File
   Saving Messages Pane Contents
   Persistent Bookmarks
   Small Update to Code Navigation
   Saving Source Files As Unicode
   Basic XML Document Generation

Delphi 2005 Debugger

Run Without Debugging
Updated Breakpoint-Related Dialog Boxes
Log Call Stack Breakpoint Option
   Updated Breakpoint pane
   Frame Selection in the Local Variables Pane
Delphi 2006 IDE

Designer Alignment Assistance
  Dynamic Alignment Guides
  Design Guidelines
  Form Positioner
Live Templates
  Access Live Templates
  The Parts of a Live Template
  Custom Live Templates
  Surround Templates
  Active Scripts
Block Completion
Enhanced Navigation
Custom Help Sight Support
Change Parameter Refactoring
The Enhanced Code Editor Gutter
Other IDE Enhancements

Delphi 2006 Debugger

FastMM
File Closing Options
Reintroduction of the Remote Debug Server
Other Debugger Enhancements
  Expandable Local Variables and Watches Panes
  Expandable ToolTips
  Grouped Watches
  Control over Order of Symbol Table Loading

Delphi 2007 IDE

MS Build
  Build Configurations
  Build Events
Project Page

Delphi 2007 Debugger

Frame Breakpoints in the Call Stack
Ignoring Non-user Breakpoints
Transparent ToolTips (hold down CTRL key)

Delphi 2009 IDE

Updated Resource Support
  Choice of Resource Compilers
  Resource Editor
  Integrated Resource Linker
Updated Type Library Editor
Other IDE Enhancements
  Class Explorer
  Together No More
  Inheritable Build Configurations
**Flat, Nested, and List Options in the Project Manager**

**Delphi 2009 Debugger**
- Wait Chain Traversal
- InnerExceptions

**Delphi 2010 IDE**
- IDE Insight
- Code Formatter and Formatting Options
- Component Toolbar
- Updates to Searching
  - New Incremental and Find Search Bar
  - Search in Directories and Directory Groups
  - Object Repository Search
- Other IDE Enhancements
  - Managing the Reopen Menu
  - Background Compilation
  - Audits and Metrics Without Modeling Support
  - Reserve Words in Code Completion
  - Refactoring and Generics

**Delphi 2010 Debugger**
- Debugger Visualizers
- Skip/Replay
- Enhanced Thread Debugging
  - Breaking on a Specific Thread
  - Freezing and Thawing Threads
- Other Debugger Enhancements
  - Event Log Scroll Lock
  - New Context Menu Items in Registers Pane of CPU Windows

**Delphi XE IDE**
- Subversion Integration
- Updated Code Formatting
- Other IDE Enhancements
  - Embedded Help
  - Build Groups in Project Manager
  - Display Preferences in Help
  - Command-Line Tools for Audits, Metrics, and Document Generation
  - Other Enhancements

**Delphi XE Debugger**
- Updated Breakpoint Windows
- Third-Party Tools
  - Auto-Close the CPU and Modules After Debugging

**Summary**

**Building DataSnap Servers and Clients**

**DataSnap Servers**
Getting Current with Delphi XE
Copyright © 2010-2011 Cary Jensen, Jensen Data Systems, Inc. All Rights Reserved.
REPRODUCTION/POSTING PROHIBITED WITHOUT WRITTEN CONSENT OF THE AUTHOR
COM-Based DataSnap Servers
Building a DataSnap Server
Exposing DataSetProviders and Methods from your DSServerModule
Authentication and Authorization
   Authentication
   Authorization
Filters: Encrypting and Compressing Client/Server Communications
Installing a DataSnap Server
DSServerModules and Concurrency

DataSnap Clients
COM-Based DataSnap Clients
IP-Based DataSnap Clients
Creating an IP-based DataSnap Client
   Adding IP-Based DataSnap Server Connectivity
   Adding Support for Filters
   The Server Methods Proxy Class
   Connecting to the DataSnap Server
   The Effects of Authentication and Authorization

Creating a DataSnap Server Windows Service from a DataSnap Server VCL Forms Application

Summary

Getting Ready for 64-Bit Delphi

Overview of 64-Bit Computing
   The Need for a 64-Bit Delphi Compiler
   Data Types and the 64-Bit Compiler
   Do I Have to Compile in 64-Bits in Future Delphi?
   Windows 64 Issues
   Code Affected by 64-Bit Compilation

Summary