Visual Basic .NET 2003 Part 1

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Ken Getz is a featured instructor for several of our Visual Studio courses. He is a Visual Basic and Visual C# expert and has been recognized multiple times as a Microsoft MVP. Ken is a seasoned instructor, successful consultant, and the author or co-author of several best-selling books. He is a frequent speaker at technical conferences like Tech-Ed, VSLive, and DevConnections and he has written for several of the industry's most-respected publications including Visual Studio Magazine, CoDe Magazine, and MSDN Magazine.

Mary Chipman is a programmer-writer for the Data Access Technologies team at Microsoft. Previously, she was a senior consultant and was repeatedly recognized as a Microsoft MVP. Mary is the co-author of the "Microsoft Access Developer's Guide to SQL Server" (Sams) and has written additional books and articles for technical journals. She has been a frequent speaker at industry conferences and is an experienced trainer and courseware author.

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Course description: In the first part of this course you will learn how to use Visual Studio .NET and Visual Basic .NET to build applications to run on the .NET platform. You will become familiar with the new Visual Basic .NET programming syntax including new object-oriented enhancements like inheritance. This course teaches you how to create Windows Forms and trap Windows Forms Events. You will learn how to access data using the new objects in ADO.NET including the DataReader, DataAdapter, and DataSet. Learn to build solid applications using the new Try/Catch block and Exception Object for efficient error trapping and Event logging and Breakpoints for effective debugging. Tap into the Internet by building Web-based application and XML Web Services including understanding the SOAP toolkit, UDDI, and how to build Web Services consumers. Learn how to leverage the security features in the .NET framework and build powerful reports using Crystal Reports.

Course outline:

Introduction
- Overview
- Create New Project
- Workspace Layout
- Solution Explorer
- Properties Window
- Size Properties / Handles
- Run / Compile
- Form Properties
- Summary

Form Controls
- Add Controls
- Size / Position
- Multiple Controls
- Format Toolbar
- Summary

Behind the Scenes
- View Code
- Regions
- Form Classes
- Dispose Method
- Variables
- Attributes
- Comments
- Set Properties
- Summary

Event Handling Code
- Control Properties
- Create Handles
- Add Event Code
- Event Handlers
- Summary

Form Menu
- Add Menus
- Menu Properties
- Add Menu Code
- Change Controls
- Modify Form Behavior
- Keyboard Shortcuts
- Summary

Form Components
- Add Components
- Tool Tips
- Use Tool Tips
- Timer
- Form Opacity
- Closing Event
- Summary

Create Console Application
- Key Terms
- vbc.exe
- Create with Notepad
- Use vbc.exe
- Summary

Visual Studio .NET
- Profiles / Options
- View
- Solution Properties
- Implicit vs. Explicit
- Modules / Classes
- Summary

Variable and Data Types
- Declare Variables
- Outside of Procedures
- Static Variables
- Block Variables
- .NET Data Types
- Convert Data Types
- View Variable Properties
- Use CType Conversion
- Summary

Operators
- Overview
- AndAlso / OrElse
- Use Operators
- Summary

Working with Code
- Functions
- Declare Function
- Sub Procedure
- Parameters
- For Loop
- Do Loop
- If Statements
- Select Case
- Summary

Enumeration and Structures
- Enumeration
- Constants w/Enumeration
- Structures
- Enumeration w/Structure
- Summary

VB.NET Event Handling
- Delegates
- Event Handler
- Multiple Controls
- Multiple Handlers

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- AddHandler
- Summary

Form And Control Events
- Inheritance Chain
- Form Events
- Mouse Events
- Keyboard Events
- KeyUp / KeyDown
- Disable Keys
- Control Events
- Validate Events
- Summary

Classes and Objects
- Class Usage
- CLR Types
- Object Creation
- Advantages
- Summary

Class Library
- Overview
- Properties
- View Library Object
- Set Reference
- Summary

Constructors
- Overview
- Imports Statement
- Call Constructor
- Naming Conventions
- Overload
- Summary

Properties
- Overview
- Fields vs. Properties
- Public Properties
- Use Private Field
- Advantages
- Validate
- Calculated
- Summary

Methods
- Overview
- Create Method
- Call Method
- Create Events
- Raise Event
- Declare Var w/Events
- Handle Events
- Dispose
- Summary

Tab Controls and Context Menu
- Tab Control
- TabAlignment
- TabAppearance
- Context Menu
- Context Menu Code
- TabPages Order
- Summary

Range Selection Controls
- TrackBar Control
- TrackBar Properties
- Shortcut Keys
- NumericUpDown
- DomainUpDown
- Properties
- Summary

Range Selection Code
- TrackBar Events
- Scroll Event
- ValueChanged Event
- Context Menus
- RadioCheck Procedure
- Change Properties
- Using Enum.Parse
- Summary

Option Controls
- GroupBox Control
- CheckBox
- ControlBox Options
- TopMost
- CheckBox Location
- Labels / Images
- RadioButton
- WindowState Property
- Summary

LinkLabel and List Controls
- LinkLabel
- LinkLabel Procedure
- ListBox
- ComboBox
- Fill ListBox
- Cast ListBox Items
- Anchoring
- Add Controls Dynamically
- Summary

Anchoring and CheckedListBox
- Anchoring Properties
- AutoScroll
- ListBox Options
- Select Event
- Toggling Visibility
- CheckedListBox
- CheckOnClick Property
- Summary

Docking and Splitter Controls
- Docking Concepts
- Splitter Control
- Build Split Object
- TextBox
- Set Border Style
- Summary

Dialog Control and Tab Order
- Dialog Controls
- Create Icon Object
- Create Color / Font Object
- Tab Order
- Summary

String Class
- Overview
- String Constructors
- Static / Shared Method
- Compareordinal
- Concat / Format / Join
- No Summary

Manipulating Strings
- Instance Methods
- String-returning Methods
- StringBuilder Class
- ToString Method
- Summary

Dates and Times
- Overview
- DateTime Constructors
- Shared Methods
- DateTime Properties
- Conversion Methods
- Calculation Methods
- DateTime Methods
- Using DateTime Type
- Summary

TimeSpan Type
- Elapsed Time
- Create TimeSpan Values
- TimeSpan Properties
- Create a TimeSpan
- TimeSpan Fields / Methods
- Parse TimeSpan
- Summary

Exception Handling
- .NET Error Handling
- No Error Handling
- Simple Try / Catch Block
- Unhandled Error
- Exception Object
- Summary

Catching Specific Exceptions
- Overview
- Multiple Exceptions
- Exception Order
- Exception Hierarchy
- Summary

Throw and Finally
- Throw Keyword
- Exception Handling Options
- Passing Error Information
- InnerException
- Run Code Unconditionally
- Use Finally Block
- Summary

Debugging Environment
- Configure
- Configuration Properties
- Debug Setup / Use
- Debug Window
- Watch Expressions
- Conditional Breakpoint
- Multiple Languages
- Debug Stored Procedure
- Summary

Logging and Tracing
- Windows Event Log
- Create Event Log
- Write to / View Log
- Tracing Application
- Trace Switch / Listeners
- Write Trace Listeners
- Modify Configuration
- Summary

Understanding Inheritance
- Overview
- Inheritance Class
- Overriding
- Virtual
- Shadowing
- Protected
- Summary

Implementing Inheritance
- Supporting Inheritance
- Setting Class / Properties
- Override Methods
- Create Derived Class
- Overloads Overrides
- Implement Derived Class
- Overriding in Action
- Summary

Using Inheritance
- Customize Controls
- Create Derived Group Box
- Create Custom Control
- Create Custom Event
- Override Inherited Class
- Summary

Using Custom Controls
- Setting Up Component
- Add to Toolbox
- Create Control Toolbox
- Test Derived Control
- Summary

Polymorphism
- Overview
- Inheritance-based
- Base Class Type
- Summary

Using Interfaces
- Overview
- Work with Interfaces
- Implement Interfaces

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- Implement IComparable
- IComparable.CompareTo
- Implement IComparer
- Use Dual Interfaces
- Summary

Selecting Files
- Useable Form Controls
- ShowDialog Method
- Filter Property
- Control Properties
- Events
- Summary

Path and FileSystemInfo
- Path Class
- Path Class Methods
- Directory / File Classes
- Object Hierarchy
- FileSystemInfo Class
- Directory Class Methods
- Create Directory Method
- Summary

TreeView Control
- Get Logical Drives
- Add Nodes
- Expand Nodes
- Get Folder Names
- View Expanded Tree
- File / Folder Properties
- TreeView After Select
- Polymorphism
- Summary

Reading and Writing Files
- Stream-based Objects
- FillList Procedure
- FileStream Object
- FileStream Reader
- Alternative Solutions
- StreamWriter
- Summary

Working with Arrays
- Overview
- Create Arrays
- Dynamically Sized Arrays
- Arrays as Objects
- Clone an Array
- User-defined Arrays
- Initializing Arrays
- Multidimensional Arrays
- Summary

Controlling Arrays
- Retrieve Array Items
- For Each Loop
- GetUpperBound Method
- Pass an Array
- System.Array Members
- Sort Arrays
- Search Arrays
- Summary

Arrays in .NET
- Array Examples
- Arrays and Text Files
- Resize Theory
- Sort TextLine Array
- Summary

ArrayList Class
- Overview
- Add / Insert Method
- AddRange Method
- Manipulate ArrayList
- ArrayList and Text Files
- Summary

HashTable and SortedList
- HashTable DataStructure
- Add Item to HashTable
- HashTable Theory
- Assign HashTable Value
- Retrieve From HashTable
- Iterate Through HashTable
- SortedList Class
- Summary

Stack Queue and Collections
- Stack And Queue Concepts
- Add Items
- Peek Method
- Pop / Dequeue
- Typed Collections
- Array Problems / Solutions
- FillTextLineCollection
- Summary