ASP.NET Using Visual Basic 2010

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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.

Prerequisites: This course assumes that students have already been introduced to Visual Studio 2008 or 2010 and Visual Basic, and have a basic understanding of the .NET Framework. Some prior experience with Web development will also be helpful.

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Course description: In this course, you will learn how to use features of Visual Studio 2010 and Visual Basic/C# 2010 to build ASP.NET Web pages. You will gain an understanding of the architecture behind ASP.NET and how to use the various ASP.NET server controls. You will learn to create consistent web sites using Master Pages, add membership features and configure-deploy ASP.NET applications, to authenticate users and limit their access to resources, direct users using Site Navigation tools, debug .NET, and to display/edit data using ASP.NET and ADO.NET. In addition, you will learn about ASP.NET features, such as support for LINQ (Language Integrated Query), CSS tools, and will become familiar with the tracing features in Visual Studio that help you quickly troubleshoot issues. You will also learn how to work with ASP.NET Profile features, ASP.NET Web Parts, and how to take advantage of creating your own user-defined control. As you progress through the course you will learn about optimizing your sites, the ListView control, and so much more.

Course outline:

Introduction to ASP.NET
- Introduction
- Dynamically Create Pages
- Demo: View Classic ASP Page
- ASP Object Model
- Demo: View Classic ASP Page
- Handle ASP Postbacks
- Demo: View Classic ASP Page
- Demo: View ASP Page Source
- ASP Shortcomings
- ASP.NET to the Rescue
- ASP.NET Web Apps
- Create New Web App
- Demo: Create ASP.NET App
- Summary

ASP.NET Controls
- Introduction
- Render HTML w/Server Ctrls
- Types of Server Controls
- HTML Controls
- Demo: HTML vs Server Ctrls
- Web Server Controls
- Demo: Page w/HMTL Ctrls
- Demo: View Code Behind File
- Demo: Page_Load Event
- Demo: Retrieve Data
- Demo: Handle Postback
- View Client Source
- Demo: Build a Table
- Demo: Properties Window
- Demo: Modify Styles
- Browse Final Page
- ASP.NET Server Controls
- Demo: Page w/Server Ctrls
- AutoPostBack Property
- Demo: AutoPostBack Property
- Summary

Data Binding
- Introduction
- Demo: Data Binding
- Add/Config SqlDataSource
- Add/Config DropDownList
- Add Data Connection
- Add Products Table
- Refresh Gridview
- Config Gridview
- Browse the Page
- Web Development w/VS
- Code Behind vs Inline Code
- Web Sites and Applications
- Demo: Web Site Project
- Demo: Web App Project
- ASP.NET Development Server
- Demo: Development Server
- Demo: Web Site Properties
- Demo: Web App Properties
- Multi-Targeting Support
- Demo: Multi-Targeting
- Summary

Introduction to Controls
- Introduction
- Web Server Controls
- WebControl Class
- Browser Detection
- Label Control
- Demo: Label
- Simple Input Controls
- TextBox Control
- Demo: TextBox
- CheckBox Control
- RadioButton Control
- Demo: CheckBox/RadioButton
- GroupName Property
- Demo: GroupName Property
- Summary

Hyperlink Buttons
- Introduction
- Overview: HyperLink Control
- Postback Behavior
- Demo: HyperLink
- Overview: Button Controls
- Demo: Button
- Demo: LinkButton
- Demo: ImageButton
- Multi Events w/Single Handler
- Demo: Handle Multiple Events
- Display Images
- Demo: Image Control
- Demo: ImageMap
- Define Image Hotspots
- Demo: Image Hotspots
- Control Hotspot Behavior

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- Image Alternate Text
- Summary

List Controls
- Introduction
- Overview: List Controls
- Demo: List Controls
- Demo: Add Items to List
- Demo: Add Items at Runtime
- Demo: AutoPostBack
- Demo: Multiple Selections
- Demo: Selection List Location
- Demo: Clear Selections
- Control Focus
- Demo: Control Focus
- Form Defaults
- Demo: Focus Method
- Demo: Access Keys
- Demo: Associated Ctrl ID
- Demo: Default Buttons
- Summary

Calendar Control
- Introduction
- Overview: Rich Controls
- Overview: Calendar Control
- Demo: Calendar Control
- Graphics Instead of Text
- Demo: Style Properties
- Handle Calendar Events
- Demo: Calendar Events
- Code: SelectionChanged
- Code: VisibleMonthChanged
- Demo: DayRender
- Code: DayRender
- View Client-side Code
- Summary

AdRotator / XML Controls
- Introduction
- Overview: AdRotator
- Demo: AdRotator
- How AdRotator Works
- Advertisements File
- Set Target Frame
- Demo: Target Frame
- Keyword Filter
- Test AdRotator.aspx
- Overview: XML Control
- Demo: XML Control
- Setting Properties
- Summary

Retrieve Data
- Introduction
- Overview: ADO.NET
- ADO.NET Classes
- OleDb vs SqlClient
- ADO.NET Architecture
- DataTable Object
- Demo: Fill DataTable
- Connect to Data Source
- Set Up Connections
- Make the Connections
- The using statement
- Exception Handling
- Overview: Commands
- Overview: Command Object
- Overview: Read Data
- Demo: SqlDataReader
- Summary

Data Set and Providers
- Introduction
- Work with Data
- Get Data into DataSet
- DataSet Object
- Steps to Fill DataSet
- Demo: OleDb DataSet
- Rows and Columns
- Use DataRows
- DataColumns and Schema
- Demo: SqlClient DataSet
- Choose a Provider
- SQL Server Data Provider
- OLE DB Data Provider
- ODBC Data Provider
- Multiple Providers
- Demo: Multiple Providers
- Summary

Intro to LINQ
- Introduction
- Working with Data
- LINQ and VB/C#
- LINQ and Language Features
- LINQ Usages
- LINQ Overview
- LINQ Syntax
- Demo: Query Expressions
- Intellisense with LINQ
- Extension Methods
- Demo: Custom Extension
- More Complex Objects
- Object Initializers
- Demo: Object Initializers
- Query Extension Methods
- Lambda Expressions
- Demo: Lambda Expressions
- Anonymous Types
- Demo: Anonymous Types
- Interesting Examples
- Demo: List Processes
- Demo: Process a Text File
- LINQ and Delayed Execution
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- Demo: Add LINQ to SQL Class
- Demo: Add Stored Procedure
- Demo: Examine Data Model
- Demo: Query SQL Database
- Call Stored Procedures
- Demo: Call Stored Proc
- Anonymous Types w/SQL
- Demo: Anonymous Types
- Modify SQL Data
- Demo: Modify SQL Data
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LINQ to DataSets/XML
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- Overview: LINQ to DataSets
- LINQ to Typed DataSets
- Demo: Typed DataSets
- LINQ to Untyped DataSets
- Demo: Untyped DataSets
- LINQ tor XML
- Demo: LINQ to XML
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- Demo: Transform XML
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.NET Configuration
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- Benefits
- Navigate Hierarchy
- machine.config
- Demo: config files
- Root web.config
- Application web.config
- Use location Element
- Config File Elements
- system.web Element
- Demo: web.config
- appSettings Section
- connectionStrings Section
- system.web Section
- ASP.NET Configuration Tools
- Config Security Features
- Web Site Admin Tool
- Demo: Web Site Admin Tool
- Unified Error Handling
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Programming Configuration
- Introduction
- Configuration APIs
- Demo: Configuration API
- Connection Strings/Providers
- Write to Config Files
- Demo: Write to Config Files
- Save appSettings
- Retrieve all appSettings
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External Files
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- Overview: Exernal FIles
- Demo: External Config File
- Standard Config Sections
- Demo: Debug Setting
- Read from Standard Section
- Write to Standard Section
- Is There More to Config API?
- Encrypt Config Sections
- Protected Config Provider
- Demo: Protected Provider
- Demo: Encrypted Conn String
- Demo: Encrypt Data
- Retrieve Connection Strings
- Encrypt w/External FIle
- Move Encrypted Files
- Summary

SqlDataSource
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- Data Binding
- Data Source Controls
- Data-Bound Controls
- SqlDataSource
- Demo: SqlDataSource
- Configue SqlDataSource
- Add/Configure DropDownList
- Run/View Source
- Use Stored Procedure
- Add/Config DetailsView Ctrl
- View in Browser
- Add/Configure Filtering
- Data Source Control Events
- Handle Delete Error
- Demo: Handle Delete Error
- Demo: Dropdown Refresh
- Demo: Item Updated Event
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- Demo: LinqDataSource
- XmlDataSource Control
- Demo: XmlDataSource
- Demo: FormView Control
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Simple Validators
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- Where Do They Work?
- Overview: Validation Ctrls
- Types of Validators
- Is a Page Valid
- RequiredFieldValidator
- Designer Markup
- Handle Initial Values
- Manage Screen Size
- Demo: RequiredFieldValidator
- RangeValidator
- Demo: RangeValidator
- CompareValidator
- Demo: CompareValidator
- View Client Source
- Summary

ComplexValidators
- Introduction
- RegularExpressionValidator
- Regular Expressions
- Regular Expression Editor
- Demo: RegExprValidator
- Combine Validators
- CustomValidator
- CustomValidator Props
- Validate on the Server
- When Does it Validate?
- Client Side Validation
- Demo: CustomValidator
- ValidationSummary
- Demo: ValidationSummary
- Validation Groups
- Demo: Validation Groups
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CSS Styles
- Introduction
- Advantages of Styles
- Format Content w/HTML
- Styles on HTML Elements
- Demo: Add Inline Style
- Design Embedded Style Sheet
- Define a Style
- Demo: Define Styles
- Design Linked Style Sheet
- Linked Style Sheets
- Overview: CSS
- Cascading Order
- Investigating Styles
- Font Attributes/family
- Demo: font-family
- Font Styles-Decorations
- Demo: Font Styles
- Attributes
- Demo: Attributes
- DIV and SPAN Tags
- Demo: DIV and SPAN Tags
- Classes and IDs
- Group Attributes
- Consolidate Styles
- Demo: Classes and IDs
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Themes
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- Review: CSS
- Overview: ASP.NET Themes
- Themes vs CSS
- Themes, Folders and Skins
- Demo: Explore Themes
- Skins
- View Label Markup
- View Skin Markup
- Create a Theme
- Demo: Apply a Theme
- Demo: Create a Theme
- Organize Skins
- Work with Themes
- Deal with Conflicts
- Demo: Conflicts w/Themes
- Opt Out of Theme
- Create Named Skins
- Demo: Use Named Skins
- Images with Skins
- Demo: Use Images
- Combine CSS and Themes
- Apply Themes Globally
- Apply Themes at Runtime
- Demo: Themes at Runtime
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Master Pages
- Introduction
- Two New Page Types
- Demo: Create Master Page
- Demo: Create Content Page
- Convert to Content Page
- Add Default Content
- Demo: Convert Page
- Demo: Add Default Content
- Practical Master Pages
- Demo: Add Table Layout
- Nested Master Pages
- Demo: Nested Master Pages
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- Introduction
- Providers / Data Sources
- Default XmlSiteMapProvider
- SiteMapDataSource Control
- Absolute / Relative URLs
- Relative URLs
- Absolute URLs
- URLs in Server-Side Controls
- Create XML Site Map
- Demo: XML Site Map
- Built-In / Custom Attributes
- Site Navigation Controls
- Demo: Navigation Controls
- View Page Source
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- Demo: Master Page Nav
- URL Mapping
- Demo: URL Rewriting
- External Config Files
- Adjust Site Map
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- Authentication/Authorization
- Website Admin Tool
- Configure Authentication
- Enable User Login
- Test the Application
- Set Up Roles
- Override Automatic Trimming
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Gridview - Part 1
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- Configure the Gridview
- View the Source
- Filter Gridview Data
- Create a DropDownList
- Test the DropDownList
- Filter by Selection
- Add DropDownList to Grid
- Introducing Templates
- Convert into a Template
- Demo: Convert to Template
- Edit DataBindings
- Demo: Show Data w/Gridview
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Gridview - Part 2
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- Display Filtered Info
- Add a Hyperlink
- View the Page
- Make Hyperlink Editable
- Make Field Sortable
- Delete Rows / Handle Errors
- Add Delete Link
- Convert to Template Field
- Add Client-Side Alert
- Test Delete Link
- Add Event Handling Code
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Preserving State
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- Methods to Preserve State
- Page-Level State
- Dynamic Page Modifications
- Demo: Dynamic Modifications
- View State / Page Lifecycle
- Enable Change Events
- Demo: Enable Change Events
- Overview: View State
- Preserve Postback Data
- Raise Change Events
- Storing Custom Data
- Custom Data Syntax
- Disable View State
- View State: Encryption
- View State: Tampering
- Page-Level Limitations
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- Demo: Cookies
- Using Cookies
- Demo: Work with Cookies
- Limits of Cookies
- ASP.NET Session State
- Problems in Classic ASP
- Demo: Default Session State
- Session Object

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- Store Objects in Session
- Demo: Store Objects
- Store ADO.NET Objects
- Demo: Work with Data
- Review: Object Storage
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- Session State Options
- Session State Mode Attribute
- Out-of-Proc State Server
- Demo: Config State Server
- Ensure Data Is Serializable
- Use DataViews/ DataTables
- Test StateServer Session
- Store Session in SQL Server
- Config SQL Server State
- SQL Server Objects
- Test SQL Server Session State
- Cookieless Session IDs
- Application State
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Intro to Membership
- Introduction
- Overview: Membership
- Membership Management
- Role Management
- Security Services Stack
- Where Does Data Go?
- Data Access Provider Model
- Prepare SQL Server
- Demo: Prepare SQL Server
- Set Up Configuration
- Web-Based Config Tool
- Demo: ASP.NET Config Tool
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- Set Up Security
- Create/Manage Roles
- Create/Manage User
- Examine web.config
- Examine aspnetdb.mdf
- Modify Provider Behavior
- Examine machine.config
- Role Support
- Role Manager
- Create/Manage Access Rules
- Test Access Rule
- Work without Cookies
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- Overview
- LoginStatus Control
- Login Control
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- Demo: Login Control
- LoginView Control
- LoginName Control
- ChangePassword Control
- PasswordRecovery Control
- CreateUserWizard Control
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- Demo: CreateUserWizard Ctrl
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- Demo: Work with Users
- Add New User
- Delete a User
- Change Password Info
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- Roles Class
- Demo: Work with Roles
- Get All Roles
- Delete Roles
- Is User in Role
- Add User to Role
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- Sample XML Provider
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Server Debugging
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- Visual Debugger
- Demo: Configure Debugging
- Visual Studio Options
- Config Project-Level Debug
- Work with Breakpoints
- Breakpoints Window
- VS Stores Breakpoints
- Step through Code
- Debug Toolbar
- Customize Debug Toolbar
- Step Into/Step Over/Step Out
- DataTips and Visualizers
- Work With Data Tips
- Run to Cursor
- Work with Visualizers
- DataSet Visualizer
- Tracepoints
- Summary

Debugging Windows
- Introduction
- Debugging Windows
- Locals Window
- Watch/Quick Watch Windows
- Call Stack/Threads Windows
- Debug Exceptions/Handle Errs
- The Exception Assistant
- Redirecting Users
- Custom Error Page
- aspxerrorpath query string
- Debug Stored Procedures
- Debug w/Database Project
- Work with Data Connections
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JavaScript Debugging
- Introduction
- Overview: Debugging
- Configure Script Debugging
- Demo: Config Script Debug
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- Break Mode /Breakpoints
- Dynamic Debug Tab
- Data Visualizers
- Locals Window
- Immediate Window
- Breakpoints Saved
- Dynamic Resource Files
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- Custom Data Visualizers
- Demo: Create a Visualizer
- Build Custom Visualizer
- Demo: Create Interface
- Code: Create Interface
- Implement Client Visualizer
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- Trace.Write and Trace.Warn
- Demo: Using Write and Warn
- Interpret Trace Output
- Page Tracing with TraceContext
- Demo: TraceContext
- Application-Level Tracing
- Configuring Web.config
- <trace> Attributes and Options
- Forwarding Trace Output
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- Using TraceListeners
- TraceListener Methods
- Pre-Defined TraceListeners
- Trace Switches
- TraceSwitch Class
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- Demo: Listeners and Switches
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Health Monitoring
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- TraceContextRecord
- Demo: Create Event Handler
- Send Web Event Data
- Demo: Setup aspnetdb Database
- Demo: SqlWebEventProvider
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- Providing States Data
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- User Control Events
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- Demo: Providing States Data
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- Demo: Adding Attributes
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- Demo: Property Behavior
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- Demo: IPostBackDataHandler
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- Reviewing the Postback Events
- Specifying a Toolbox Icon
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- Improvements over Classic ASP
- Types of Caching in ASP.NET
- Page Output Caching
- Caching Static Pages
- Demo: Caching Static Pages
- Caching Multiple Page Versions
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- Varying by Form Parameters
- Demo: Form Parameters
- Varying by HTTP Header
- Demo: Varying by HTTP Header
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- Demo: Using VaryByControl
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- Call a Method to Insert HTML
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- Demo: Vary by Parameters
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- Demo: Poll Changes to a Table
- Steps for Poll-Based Caching
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- Source Control vs. Directive
- Polling on Query Results
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- Controls and Templates
- What About ListView?
- What About Templates?
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- Demo: CategoryDetail.aspx
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- Formatting the DataList
- Demo: Format DataList Control
- Binding Data to the DataList
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- Demo: Configuring ListView
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- Demo: Look at ListView Templates
- Demo: Configure ListView Templates
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- Demo: Modifying Page to Listview
- Demo: Adding LINQDataSource
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- Demo: Sort Data in a Listview
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- Demo: Profile Behavior
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- Migrating Anonymous Users
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