Develop Fusion Applications using Visual Builder Studio LVC

Application Development Learning Subscription

DURATION	MODULES	COURSE CODE
2 Days	**13 Lectures**	**—**

Course Overview

Want to turn your ideas into powerful apps? You're in the right place! Learn to use Visual Builder Studio to customize and extend user interfaces. With hands-on practices, you'll be equipped to create, edit, enhance, maintain, and deploy App UI-based extensions for Fusion Apps.

What You Will Learn

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- Course Description O-2
- Target Audience O-7
- What’s Next? O-8

Introduction to Extensions in Visual Builder Studio

- Objectives
- Topics
- What Can You Do with Oracle Visual Builder Studio?
- Extensions Deliver New Capabilities to Oracle Cloud Apps
- Examples of Extensions and Configurations
- Extension Best Practices
- Topics
- Customize Existing Page Components
- The Extension Life Cycle: Customize Existing Page Components
- Customize an Existing Page’s Components: Basic Use Cases
- Customize an Existing Page’s Components: Intermediate Use Cases
- Choose or Create a Project to Hold Your Extension
- Topics
- Create New Pages
- The Extension Life Cycle: Create a Bespoke App UI
- Develop Bespoke Mash-Up Visual Applications
- VBS Support for External Bespoke Mash-Up Visual Applications

- Topics
- Create a New Application Extension and Dependency
- Work with an Extension
- What Is a Workspace?
- What Is the VB Studio Designer?
- What Is a Dependency?
- Add and Remove Dependencies
- Work with a Sandbox
- What Are Dynamic Components?
- What Are Fragments?
- Summary

Create App UIs in Extensions

- Objectives
- Topics
- Overview of an App UI Application
- Single Page Application Architecture
- App UI Single Page Application Architecture
- Opening a Workspace
- Choose What to Do in Your Workspace
- What Is an App UI?
- Topics
- Configuring an Existing App UI
- Creating a New App UI
- Why Should Multiple App UIs Be Created in a Single Extension?
- How Are App UI Applications Structured?
- Topics
- Use the Designer to Edit Source Files in the Workspace
- Use the Designer to Edit Source Files
- Reopen Closed Editor Tabs
- Personalize Designer Theme
- Use Diagram View to See the App UI’s Structure
- Designer Modes: Live, Design, Code
- Use the Structure View to View and Modify the Page
- Control Placement of Panels
- Preview a Visual Application
- Commit Your Work
- Use Branches to Isolate Changes
- Oracle Fusion Apps Naming Conventions
- Topics
- Manage Extension and App UI Settings
- Flow and Page Level Settings
- Control Access to Your App UI
- Summary

Configure and Manage Service Connections in Extensions

- Objectives
- Topics
- Add Service Connections to Your Extension
- What Are Service Connections?
- How to Use Service Connections
- Service Connection Metadata
- Service Connections: Static vs. Dynamic
- Topics
- Create a Service Connection
- Create a Service Connection from the Catalog
- Dynamically Retrieve Metadata
- Copy Minimal OpenAPI to the Application
- Create an External Service Connection (No Catalog)
- Create an External Service Connection (No Descriptor)
- Overview Tab
- Server Tab
- Operation Tab
- Request Tab
- Response Tab
- Test Tab
- Topics
- Edit a Service Connection Definition
- What Edits Can You Make to a Service Connection?
- Add a Server: New or Copy Existing
- Edit a Server's Authentication Details
- Add Server Variables for Service Connections
- Edit a Service Connection: Add Endpoints
- Edit a Service Connection: Edit Endpoints
- Retrieve Metadata for a Dynamic Service Connection
- Convert a Service Connection between Static and Dynamic
- Add Transforms: Implemented in Backend
- Authentication Mechanisms and Identity Propagation
- Topics
- What Is a Backend?
- Create a Backend
- Add a Local Server to Use a Different Backend During Development
- Display Data from a REST Service: Overview
- Display Data from a REST Service: Details
- Summary

Develop Flows, Pages, and Fragments

- Objectives
- Agenda

- Anatomy of App UI Applications
- Agenda
- Work with Pages and Flows
- Create and Manage Pages
- Page Flow and Navigation
- Page Flow and Navigation: Return Navigation
- Page Flow and Navigation: Pass Page Parameters
- Embed a Subflow within a Page
- Use Diagram View to Manage App UI and Flows
- Agenda
- Use Fragments to Manage and Reuse Code
- Create and Use a Fragment
- Define Descriptive Properties for Fragment Slots
- Customize How a Fragment Variable Is Displayed in the Properties Pane
- Section Fragment Properties for Display in the Properties Pane
- Create and Use a Fragment
- Putting It All Together: Pass Data to the Fragment
- Pass Data to the Fragment Container
- Emit an Event to the Container: Create the Fragment Event
- Emit an Event to the Container: Configure the Container
- Defer Rendering of a Fragment's Content
- Agenda
- How Fragments Behave in Extensions
- What Are Referenceable and Extendable Fragments?
- Add a Fragment from a Dependency
- Summary

Implement Event Handling and Action Chains

- Objectives
- Agenda
- Anatomy of App UI Applications
- Agenda
- What Are Variables?
- Create Variables
- Kinds of Variables
- Variables and Scope
- Default Value and Expressions
- Expressions and Implicit Objects
- Bind Variables to Components
- Visual Builder Studio Types
- ServiceDataProvider (SDP) Types and Variables
- Define Filter Criteria for SDP Variables
- Use ArrayDataProvider for Arrays of Data
- Create Variables to Temporarily Store Data Changes in a Buffer
- Types and Variables

- Create Custom Types and Assign to Variables
- Create Types from Endpoints
- Make Variables and Types Available to Extensions
- Agenda
- What Is an Action chain?
- Action Chain Scope
- JavaScript vs. JSON Action Chains
- JavaScript Action Chains
- Visual Builder Studio Built-In Actions
- Add Actions to the Chain
- Sequential Assign Variable Actions Are Stacked
- Add a Code Action
- Action Chains: If Else
- Simplify Action Chain View with the Summary Button
- Fire Notifications to Display Banners
- Agenda
- Events Trigger Actions
- Work with Events and Event Listeners
- Types of Events: Components
- Types of Events: Life Cycle
- Types of Events: Variable
- Types of Events: Custom
- Add an Edit Page to a Selected Table Event
- Investigate How the Edit Page Is Constructed
- Make a REST Call in an Action Chain
- Summary

Develop App UIs with Redwood Components

- Objectives
- Topics
- Redwood UI Components
- VBS and Redwood Components Are JET Components
- JET Cookbook
- Work with the Component Exchange
- Install Components from the Component Exchange
- Badges for Developers
- Component Contract’s Four Aspects
- Properties Pane
- Topics
- What is Redwood?
- Redwood Platform Enables Better Designs with Components
- Redwood Templates and Patterns
- Redwood Patterns Build a Complete Page
- Redwood Page Templates: Referenced Layout and Functionality
- Create a New Page: Select Page Pattern and Template

- Common Pattern Template Page Configuration
- Welcome and Overviews: Display Content and Take Action
- Smart Search: Search, Display Results, and Take Action
- Simple Create and Edit Page Pattern
- Horizontal Foldout: Display Details
- Redwood Templates Are Responsive by Design
- Redwood Templates Support Responsive Mobile Layouts
- Use Styling for Finer-Grained Control of Layout
- Style Components with JET Styles
- Use Redwood Containers and Layout Components in Pages
- Topics
- Add a GUI Component to the Page
- Components Palette
- Insert a GUI Component into the Structure Pane
- Add a Component to the Parent Slot
- Bind Data to Components: REST Endpoints
- Bind Data to Components: Quick Start Wizards
- Bind Data Using QuickStart Wizards
- Edit Table Columns
- Use Lists Instead of Tables
- Comboboxes and Select Components
- Filter Queries with Selection Components
- Topics
- Use Pop-Up Dialog Boxes to Display Information
- Use Drawers to Display Information
- Visualize Data Using Charts and Gauges
- Charts and Graphs Return Selected Items
- Use Gauges for Table Data
- Summary

Enhance App UI Applications

- Objectives
- Introducing the VBCookbook
- Create a Visual Application for the VBCookbook
- Use VBCookbook Recipes in Visual Builder
- Build Queries with Components: Input Text
- Build a Query: Use Master RowKey as Filter to Detail Collection
- Populate Variables with Selected rowData
- Modify Table Columns and Headers
- Use Component Properties: Deselect Rows in a Table
- Fire Data Provider Event to Refresh Data
- Show Additional Data for Selection Components
- Use Cascading Selection Lists of Values (LOVs)
- What Do the Endpoint Test Query Params Mean and How Are They Used?
- Selectively Display a Field

- Selectively Enable a Field and Handle Button Navigation
- Work with Resource Files
- Work with JavaScript
- JavaScript Editor
- Create and Use a Custom JavaScript Function
- Add Swipe Motions to Navigate in Mobile Apps
- Work with Translations
- Audit Your Application
- Preview a Visual Application
- Share an App UI
- Summary

Create Dynamic Components in Visual Builder Studio

- Objectives
- Topics
- What Are Dynamic Components?
- Work with Layouts in Your Extension
- Explore a Layout
- Extend a Layout in a Dependency
- Three Ways to Create a Layout
- Create a Rule Set in a Layout
- Override Field Properties in a Layout
- Terminology: Data Model and Presentation Layer
- Add a Dynamic Table to a Page
- Add a Dynamic Form to a Page
- Topics
- Determine What’s Displayed at Runtime with Rule Sets
- Add a Rule Set to a Layout
- Build a Dynamic Component Rule Set Based on Screen Size
- Build a Rule Condition Based on User Role
- Build a Rule Condition Based on Context
- Preview Different Layouts
- Topics
- Control How a Field is Rendered with Field Templates
- Create Field Templates
- Apply a Template to a Field
- Start an Action Chain from a Field
- Add and Group Fields in Dynamic Form Layouts
- Edit a Field’s Properties
- Set a Field to Be Read Only
- Set How User Assistance Is Rendered in a Layout
- Set a Field to Display as a Text Area in a Form
- Set a Field as Required
- Use Conditions to Show or Hide Fields in a Layout
- Configure How Columns Render in a Dynamic Table’s Layout

- Add Converters and Validators to a Field
- Create Fields For a Layout
- Create a Calculated Field
- Create a Virtual Field
- Topics
- Add a Dynamic Container to a Page
- Dynamic Container Displays Content in Sections
- Use Fragments as Sections for Dynamic Containers
- Guidelines for Working with Container Sections
- Make a Rule Set Extendable
- Summary

Create Business Rules in Visual Builder Studio

- Objectives
- Topics
- What Are Business Rules?
- What Are Business Rules in Redwood and VB Studio?
- Customize Tables and Forms Using Business Rules: Express
- Customize Tables and Forms Using Business Rules: Advanced
- Topics
- Control Your Display with Rule Sets
- Modify Field Attributes for a Single Layout and Rule Set
- Modify Field Attributes for All Layouts in the Rule Set
- Control Layouts with Business Rules Instead of Rule Sets
- How Do Business Rules Govern Layout Settings?
- Use Business Rules Across All Your Rule Sets
- Main Components: Conditions and Properties
- Create a Rule For Forms
- Create a Rule For Tables
- Filter Your Rules
- Set Conditions for a Rule
- Use Condition Builder to Define Conditions
- Build Advanced Expressions
- Override Field Properties in a Form
- Set a Default Value for a Field
- Locks, Blanks, and Dashes
- Topics
- Nested Rules
- Add an If/Else Rule
- Add a Switch Rule
- Understand What Will Be Shown at Runtime
- Identify the Regions and Fields Impacted By a Rule
- Display Messages When Conditions Are Met
- Which Rules Take Precedence in the Presentation Layer?
- Summary

Configure Business Rules Using Express Mode in Visual Builder Studio

- Objectives
- What Is Express Mode?
- How to Access Express Mode: Edit Page in VB Studio
- Express Mode vs. Advanced Mode
- Using Express and Advanced Modes
- Express Mode: Page Designer
- Advanced Mode
- Publish Your Changes
- Manage Your Published Extensions
- Summary

Review Code with Merge Requests

- Objectives
- Topics
- What Is a Merge Request?
- Requestor Creates a Merge Request
- Merge Request Details
- Create a Merge Request from a Template
- Topics
- A Word About Roles
- Manage Your Extension with Git
- Committed Work Is Pushed for Review
- Reviewer Opens a Merge Request
- Reviewer Views the Merge Request and Requests Attention
- Reviewer Can See Commits and Changed Files
- Reviewers Can Add an Inline Comment to a File
- Reviewers and Developers Can Add a General Comment
- Use the Toolbar to Work with Comments
- Filter Merge Requests
- Topics
- Reviewers Approve or Reject a Merge Request
- Merge Branches and Close the Merge Request
- View Merge Request Statuses
- Different Ways to Merge Branches
- Revert a Merge Request
- Set a Merge Request to Draft State
- Summary

Manage Git Repositories and Build, Package, and Deploy Extensions

- Objectives
- Topics
- How Are Extensions Applied at Runtime?
- Create a New Git Remote Branch for New Work

- Branch Protection Settings
- Create or Switch a Branch
- Manage Local Branches: Rename and Delete
- Switch a Workspace’s Environment
- Topics
- Builds, Jobs, and Pipelines
- Create and Manage Jobs
- Manage Jobs with Pipelines
- Create a Pipeline
- Add Other Jobs to the Pipeline
- View Pipeline Layout
- Administrators Manage Pipelines and Secure Build Jobs
- Enable or Disable the CI/CD Pipeline for Publishing
- Deploy Application – Build Jobs
- VB Studio Extension Package and Deploy Steps
- Topics
- Manage an Extension
- Export an Extension
- Import an Extension
- Manage Your Published Extensions
- Summary

Manage Project Assets in Visual Builder Studio

- Objectives
- Topics
- What is Visual Builder Studio?
- VB Studio Application Development and Delivery
- Topics
- What Do You Want to Do with VB Studio and Oracle Cloud Apps?
- Get Started: Open a Project or Use Edit Page in VB Studio
- Project Home
- Add Team Members
- Manage Environments
- Track Issues
- Create Products for Issue Tracking
- Create Issues for Issue Tracking
- Manage the Git Repository
- Create a New Project Using a Template
- Administer Projects
- Repositories
- Branch Protection with Custom Rules
- Builds
- Set Your Preferred Color Theme
- Use Wiki Pages to Collaborate
- Topics
- Develop Bespoke Mash-Up Visual Applications

- VBS Support for External Bespoke Mash-Up Visual Applications
- Application Extension vs. Visual Application
- Summary