

# Webdynpro ABAP Course content

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## Web Dynpro Introduction

- What is webdynpro ABAP?
- Lifecycle of webdynpro ABAP
- Advantage of webdynpro ABAP
- Introduction to entities
  - Controllers
  - Context
  - APIs
  - Configuration
  - Layouts
  - Definition of component and properties
- Webdynpro JAVA v/s Webdynpro ABAP
- Model View Controller(MVC) architecture
  - Model – Data model
  - View – UI model
  - Controller – Logical programming
  - Layering concept
  - Relational model with model and controller
  - Design pattern and OOPS
- Webdynpro Services
  - Configuring services in sap for webdynpro
  - View controller services
  - Creating web service for webdynpro
  - Service calls and external services
  - Fully qualified domain name (FQDN) in webdynpro
  - Configuring FQDN
  - Settings of FQDN
  - SAP web application service security

## Webdynpro Controllers

- Structure of controller
  - Attributes
  - Context section
  - Reuse section
  - Methods
  - Events
  - Model
  - Handlers
  - Inbound plug
  - Outbound plug
  - Layout
  - Hook methods

- Types of controller
  - Component controller
  - Configuration controller
  - Custom controller
  - Interface controller
  - Window controller
  - View controller
- Difference between view controller and component controller
- Difference between component controller and interface controller
- Hook methods
  - Component controller
    - DOINIT
    - DOEXIT
    - DOBEFORENAVIGATION
    - DOONAPPLICATIONSTATECHANGE
    - DOPOSTPROCESSING
  - Configuration controller
  - Custom controller
  - Interface controller
  - Window controller
    - DOONOPEN
    - DOONCLOSE
  - View controller
    - DOINIT
    - DOEXIT
    - DONMODIFYVIEW
    - DOBEFOREACTION
    - DOAFTERACTION

## Context

- Context
  - Introduction to context
  - Creating nodes
  - Creating attributes
  - Creating dependent nodes
  - Creating independent nodes
  - Creating iterative nodes
- Context node properties
  - Cardinality
    - 0..1
    - 0..n
    - 1..1
    - 1..n
  - Selection
    - 0..1
    - 0..n
    - 1..1
    - 1..n
  - Singleton
  - Supply function

- Initialize lead selection
  - Behaviors of different properties
- Context mapping
  - Internal mapping
  - External mapping
  - Cross-component mapping
  - Reverse mapping
  - Mapping between reusable components
  - Inter-framework mapping
- Context programming
  - Reading node
  - Reading element
  - Creating single element using create\_element method
  - Creating multiple elements bind\_table
  - Creating structural element bind\_static\_attributes
  - Dynamically adding elements to context node
  - Deleting elements using remove\_element
  - Navigating through context tree
  - Binding elements
  - Setting attribute values for single element using set\_attribute
  - Setting attribute values for structural element using set\_static\_attributes
  - Setting attribute values for table element using set\_static\_attributes
  - Getting values from elements for single and complex element
- Data binding
  - Simple binding
  - Complex binding
  - Binding with singleton node
  - Binding with node having max cardinality n
  - Binding with single UI element
  - Binding with table UI element
  - Binding with tree UI element
  - Binding with properties of UI element
  - Binding with attribute property of context element

#### User interface elements

- Input field
  - Creating input field
  - Setting ID for input field
  - Binding obligatory property of input field
  - Setting tooltip for input field
  - Setting properties like enable, read-only etc.
  - Coding for input field
  - Defaulting value in input field
  - Setting fonts for input field
  - Disabling input field
  - Hiding input field dynamically
  - Password type input field
- TextView

- Creating Text view
- Setting ID for Text view
- Binding obligatory property of Text view
- Setting tooltip for Text view
- Setting properties like enable, read-only etc.
- Coding for Text view
- Defaulting value in Text view
- Setting fonts for Text view
- Disabling Text view
- Hiding Text view dynamically
- Password type Text view
- Buttons
  - Creating buttons
  - Setting id for button
  - Adding text to button
  - Creating action for button
  - Handling on\_click event
- Text edit control
- Check box
- Line
- VGutter
- Title bar
- Value selectors
  - Radio buttons
    - By Index
    - By Key
  - Drop down
    - By Index
    - By Key
  - List box
    - By Index
    - By Key
- Table UI element
  - Creating Table
  - Creating cell editors
  - Adding label and columns to cell editor
  - Adding table columns from context node
  - Adding table columns and cell editor manually
  - Changing cell editors
  - Binding table UI element
  - Setting data into table UI element from Bind\_table
  - Disabling table columns
  - Hiding table columns
  - Changing color of table columns
  - Deletion of table row
    - Using Context element delete
    - Using Node value delete
  - Changing table row and updating context
  - Changing table layout
  - Setting table title
  - Getting related data using Supply function
  - Creating table toolbar and adding table buttons

- Handling table events
    - Row select
    - Row click
    - Column select
    - Cell click
    - Change cell
    - On enter
- Tree UI element
  - Creating hierarchy
  - Maintaining table context according to hierarchy
  - Setting text for root node
  - Binding levels of tree
  - Code for each level of tree
  - Accessing data for tree in event handlers
  - Using element as signature of event method
  - Setting tree title
  - Creating tree toolbar and adding tree buttons
  - Deletion of tree branches
  - Changing data in tree hierarchy
  - Handling tree events
    - Double click
    - Node select
    - Expand
- Roadmap UI element
- Chips
  - Creating chips
  - Creating Inport
  - Creating Out port
  - Using Page Builder API
  - Using Page header
  - Using standard chip
  - Passing data to interface of chip
- Business Graphics
  - Creating business graphics
  - Binding Business graphics
  - Node
  - Binding
  - Comparison
  - Store Application
- Containers
  - Transparent container
    - Creating transparent container
    - Setting layout for transparent container
    - Adding UI elements to container
    - Adding UI elements together to container
    - Setting background color for transparent container
    - Setting width and height for container
    - Create container form option
  - Tray
  - Group container
  - Scrollable container
- Business graphics

- Charts
- Bar chart
- Pie chart
- Line chart
- Forms
- Horizontal charts
- Tab strip
  - Tabstrip creation
  - Adding tabs to tabstrip
  - Changing tabstrip text
  - Adding tabstrip to container
  - Changing tab text dynamically
  - Showing views for tabs
  - Positioning of tabs
- Layout properties
  - Grid layout
  - Form layout
  - Row layout
  - Matrix layout
  - Layout head data
- View container UI element
  - Creating View container
  - Showing view of same component in view container
  - Showing view of another component in view container
  - Changing layout for view container
  - Addition of views in view container using WINDOW
- Navigation
  - Navigation between views
  - Creation of inbound and outbound plug
  - Firing of outbound plug for navigation
  - Connecting plugs for navigation in WINDOW
  - Defining navigation between views
  - Default plug concept
  - Cross-component navigation
  - RESUME plug
  - Passing parameter using plug between views

## Internationalization

- Showing text from ABAP dictionary
  - Binding text from ABAP dictionary
  - Showing heading, long, medium and long texts
- Showing text from OTR
  - Introduction to online text repository
  - Attaching text from OTR
  - Creating OTR text
  - Changing text to OTR
  - Changing text to OTR dynamically into fixed language
- Showing text from Assistance class
  - Introduction to assistance class
  - Object WD\_ASSIST

- Creating text elements in assistance class
- Calling method to get text from assistance class
- Other uses of assistance class

## Messages

- Introduction to controller API
- Introduction to Message API
- Getting message manager class object
- Calling message method
- Showing direct message
- Showing message from message class
- Showing attribute error message
- Error handling and highlighting of text boxes
- Handling of messages in DOBEFOREACTION method

## Component Reuse

- Introduction to component reuse
- Interface controller and nodes
- External context mapping between used and usable component
- ALV Component
  - Adding reusable component in component
  - Adding reference of INTERFACECONTROLLER of reuse component in controllers
  - Adding viewcontainer UI element
  - Using interface view in view container of used component
  - Creating proxy object
  - Creating interface controller object
  - External context mapping
  - Calling methods of ALV to
    - Change column width
    - Hide column
    - Show column
    - Showing icon in column
    - Changing color of column
    - Changing label of column
    - Showing image in column
    - ALV functions
  - Subscribing to events of ALV
    - Row select
    - Column click
    - Column select
    - On change of
- OVS Component
  - Object value selector
  - Dictionary search help
  - Freely programmed search help
  - Attaching own search help to fields

- Select options
  - Creating range table
  - Adding of range table
  - Dynamic table creation
  - Handling user input
  - Selecting data using range input
  - Calling methods to default input
  - Calling methods to set functions to range

#### Dialog Boxes (Popups)

- Introduction to popup API
- Using controller api to get window manager
- Showing URL in new window
- Showing popup with text and buttons
- Showing reusable component in new window
- Showing window of same component as popup
- Popup action handling
- Type casting of popup api
- Displaying Interface View of Component Usage as Popup

#### Faceless component

#### Adaptation Techniques

- Introduction of adaption
- Type of adaption techniques
  - Configuration
  - Customization
  - Personalization
- Types of adaption
  - Implicit
  - Explicit
- Creation of component configuration
- Creation of application configuration
- Using application parameter
- Dynamic assignment of application configuration
- Static assignment of application configuration
- Customizer and customization
- Personalization

#### Dynamic Modifications at Runtime

- Creating Context nodes dynamically
  - Creation of context node
  - Dynamically setting the properties
  - Addition of attributes to dynamic context node
  - Allocating memory dynamically
  - Binding elements to dynamic context node
  - Removing node



- Creating UI elements dynamically
  - Obtaining ROOTUIELEMENTCONTAINER object
  - Introduction to UI element classes
  - Creation of UI element object
  - Setting layout property for UI element object
  - Adding UI element to ROOTUIELEMENTCONTAINER object
- Attaching actions dynamically to UI element

#### Enhancements in webdynpro

- Controller enhancement
  - Pre-exit
  - Post-exit
  - Overwrite-exit
- View Enhancement
  - Adding new element
  - Removal of standard element
- Class enhancement

#### Floorplan Manager

- Object Instance Floorplan (OIF)
- Quick Activity Floorplan (QAF)
- Guided Activity Floorplan (GAF)
- Modifying IDR at runtime
- IDR and extended IDR
- Handling FPM actions