SAP

Web Dynpro

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About the Tutorial

SAP Web Dynpro is a standard SAP UI technology to develop web applications using graphical tools and development environment integrated with ABAP workbench. The use of graphical tools reduces the implementation effort and helps maintain components in ABAP workbench.

This tutorial explains the key concepts of Web Dynpro with relevant screenshots for better understanding.

Audience

This tutorial is designed for all those who want to learn the basics of SAP Web Dynpro and advance in the field of software development.

Prerequisites

Basic knowledge of ABAP is a must to understand this tutorial. Understanding the Model-View-Controller (MVC) model and having experience in web applications is a plus.

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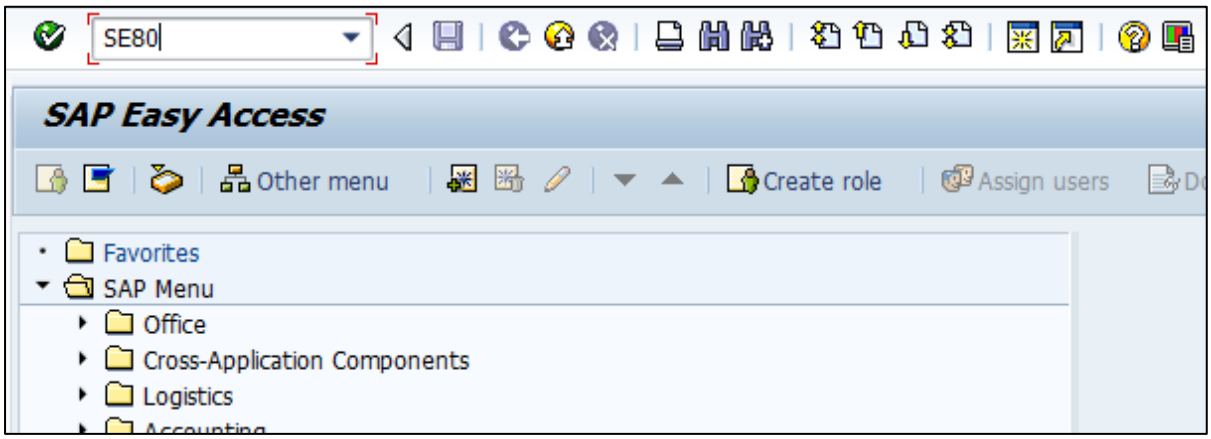
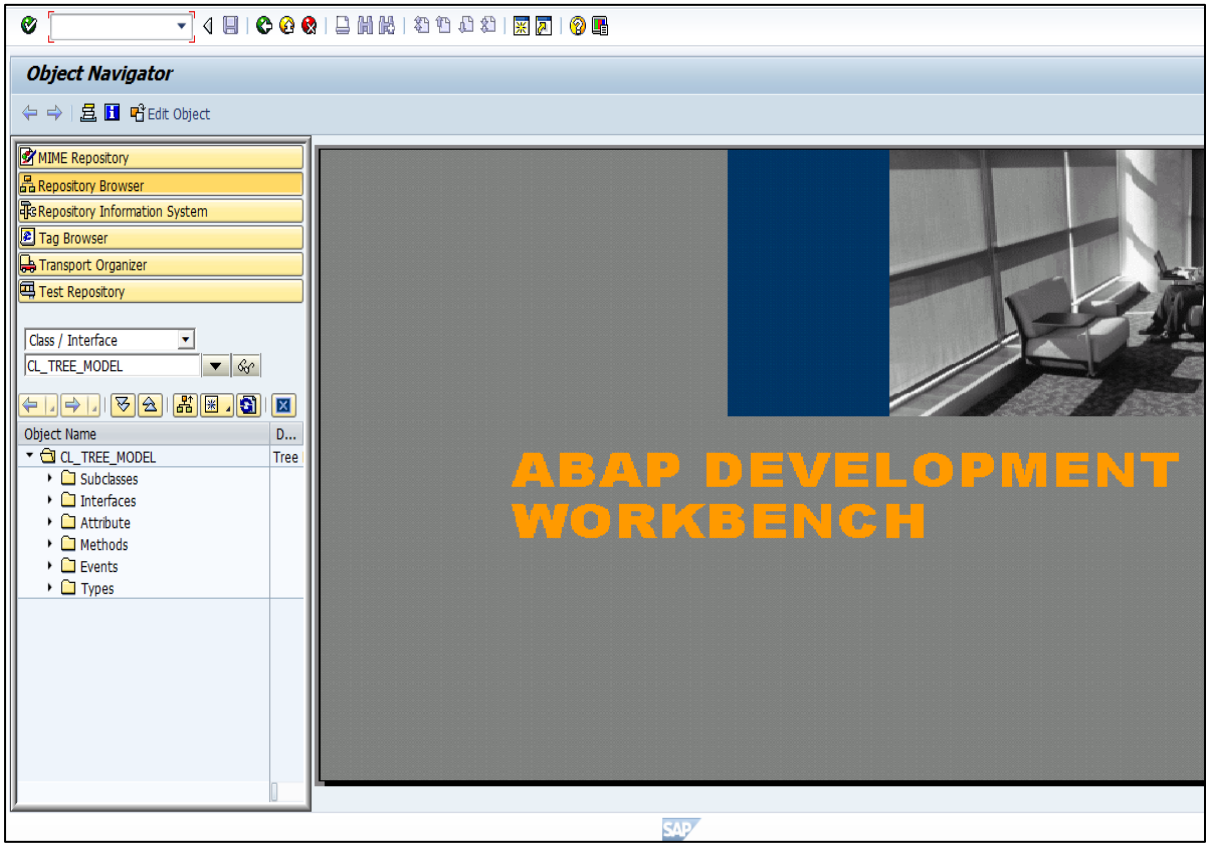
1. Web Dynpro – Overview

Web Dynpro is a standard SAP UI technology that allows you to develop web applications using graphical tools and development environment integrated with ABAP workbench. Using graphical tools reduces the implementation effort and you can better reuse and maintain components in ABAP workbench.

To access Web Dynpro runtime environment and graphical tools in ABAP workbench, you can **use Transaction code: SE80**





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Key Benefits of Using Web Dynpro

Following are the key benefits of using Web Dynpro for developers in ABAP environment:

- You can easily maintain and reuse the components for development.
- Less implementation time with the use of graphical tools.
- You can easily change the layout and navigation using graphical tools.
- Easy structure changes.
- With the use of data binding, you can use automatic data transport.
- Ease of integration in ABAP environment.

Web Dynpro ABAP is the same as Web Dynpro Java and supports the same set of functions for the application development.

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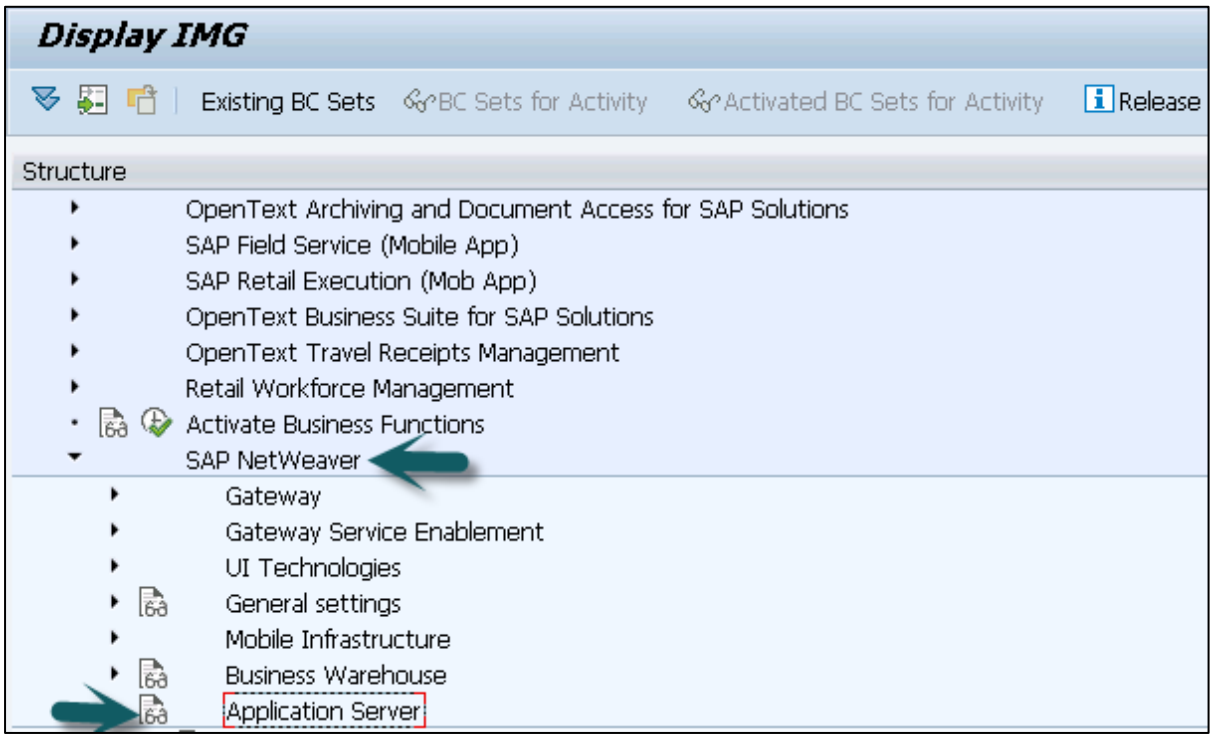
2. Web Dynpro – Configuration & Integration

Once you install ABAP application server, it is necessary to configure it properly for application development.

To find the details about ABAP configuration, you can go to SAP Reference IMG -> SAP NetWeaver -> Application Server



If you are using SAP Solman, you can check this configuration by going to T-Code: SOLAR_LIBRARY.

To use Web Dynpro with ABAP application development, you have to make additional configuration for web Dynpro programming.

Internet Communication Manager

You need to set HTTP/HTTPS in ICM service. A service contains following different components:

- Service/Port
- Protocol used in service HTTP/HTTPS
- Processing timeout
- Keep alive timeout
- Service status: Active/inactive

You can choose Go To -> Service to create, delete, activate or deactivate services. To display the ICM server cache statistics, choose Goto ->Statistics

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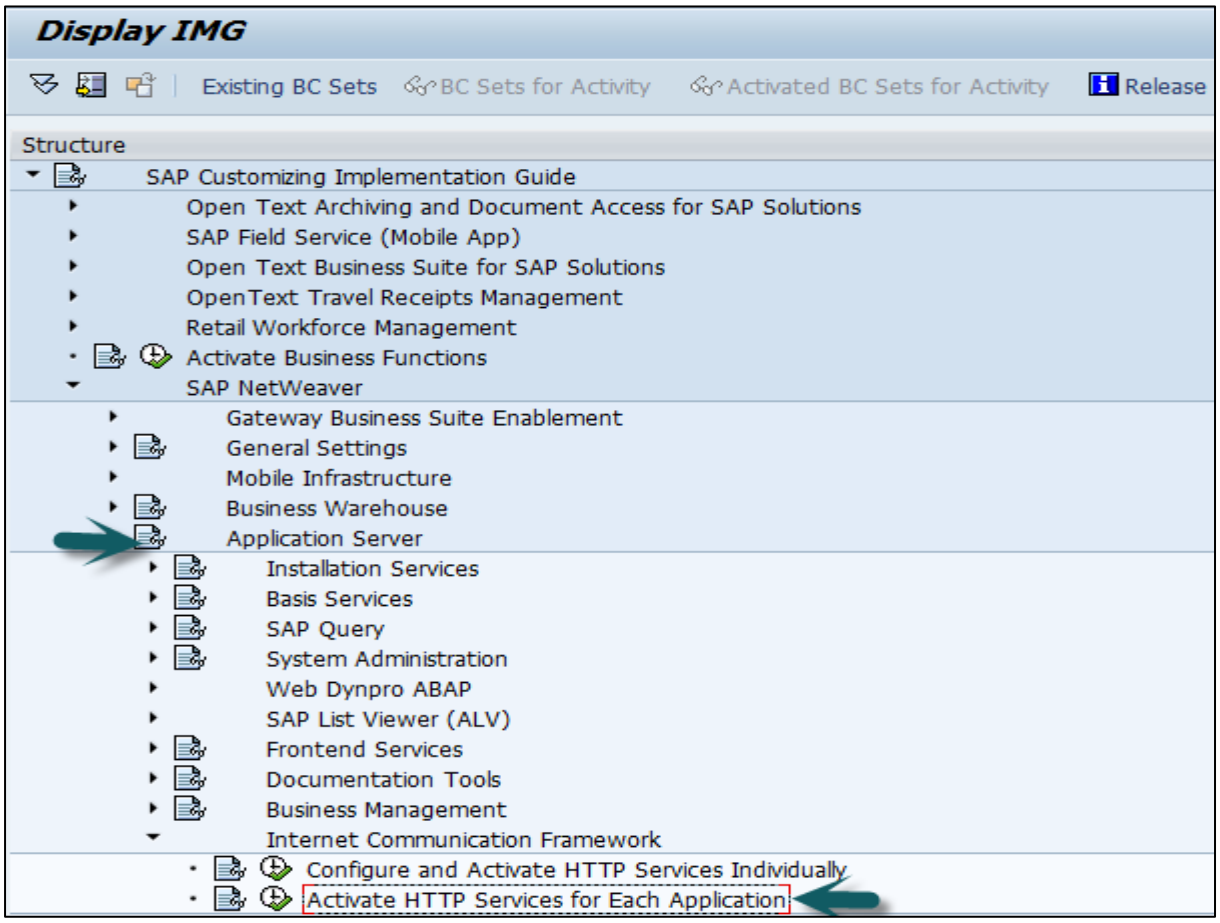
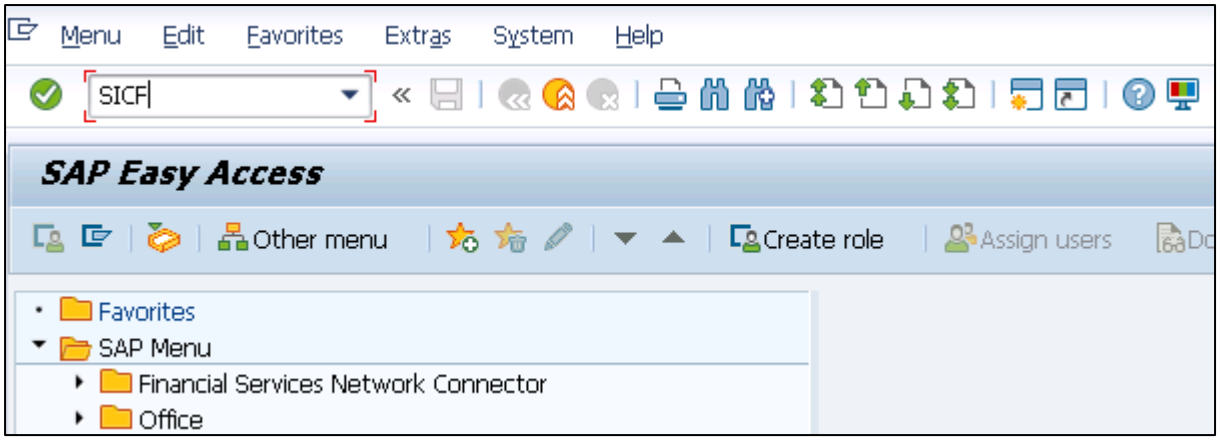
Internet Communication Framework

You should activate the Internet Communication Framework (ICF) service. You can activate this service by going to SPRO -> SAP Reference IMG -> SAP NetWeaver -> Application Server -> Internet Communication Framework -> Activate HTTP service



When you install Application server ABAP, all ICF services are in inactive state. You can maintain ICF services using T-code: SICF under ICF tree.



You can activate ICF service in the following ways:

- Using the menu option, Service/Host -> Activate
- Using the context menu and choosing Activate Service.

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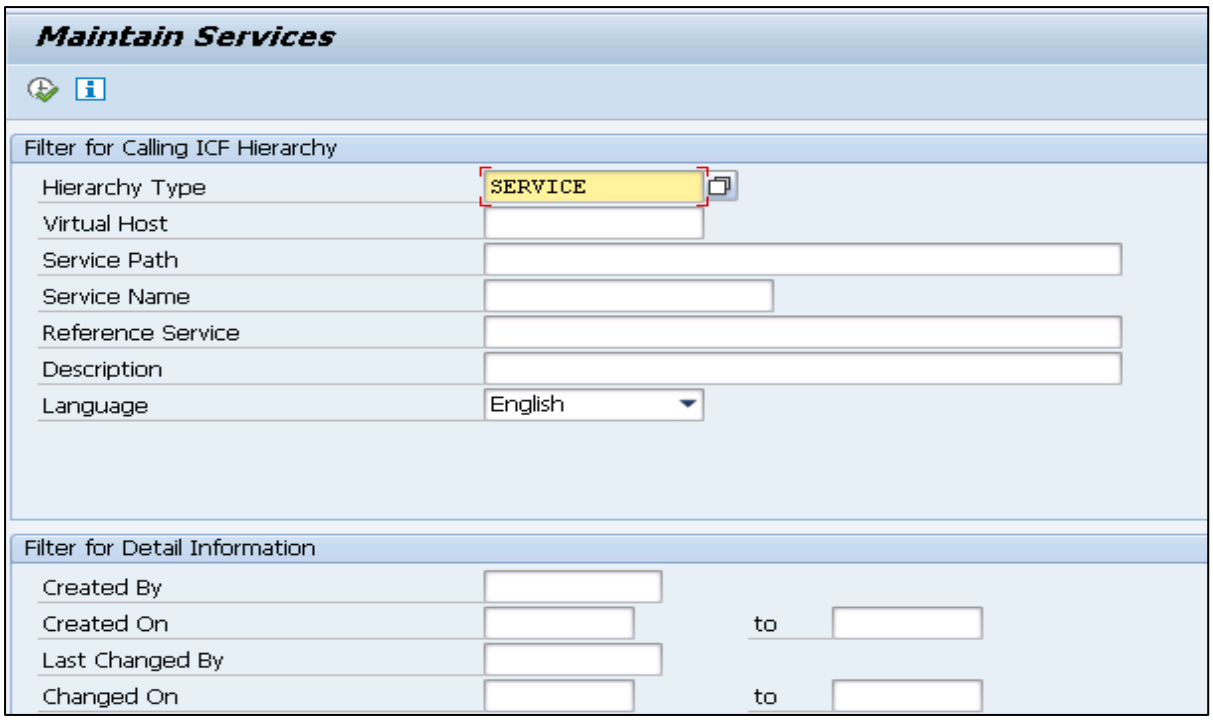

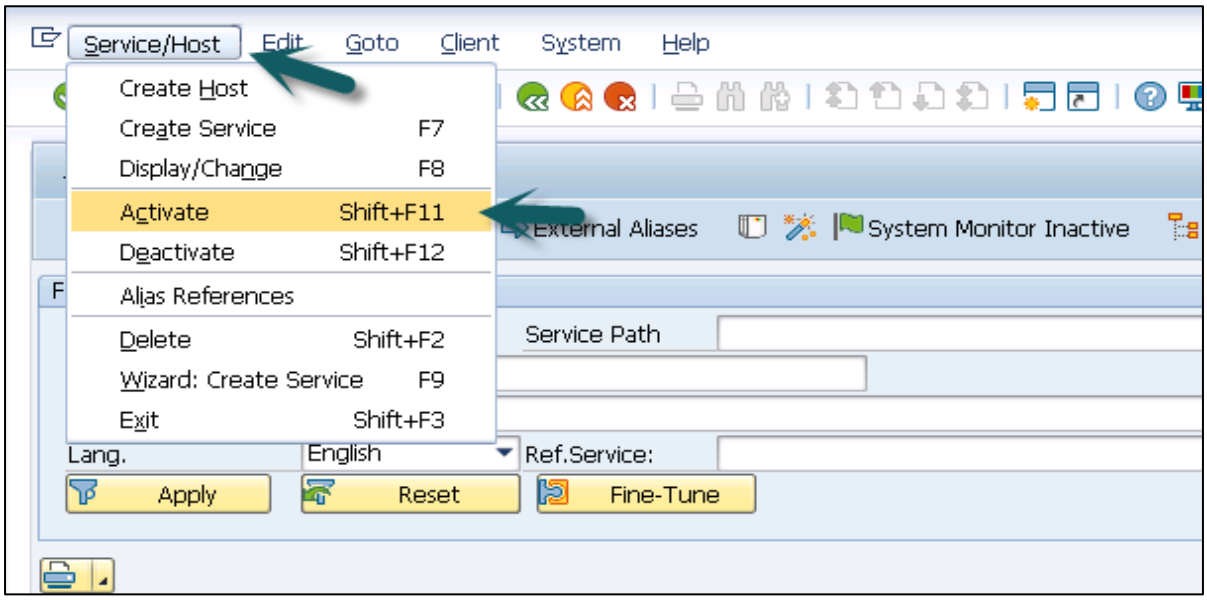

Layout Editor in View Designer

You should activate all the services in SICF for Web Dynpro ABAP to use the layout editor in the view designer.

Single Sign On

You should set SSO on the relevant host.

FQDN

You should use fully qualified domain names FQDN and short forms should be avoided.

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3. Web Dynpro – Architecture

Web Dynpro is an ABAP environment for web development and is based on the Model View Controller (MVC) concept of UI programming. It is available for both Java and ABAP as per the platform, and supports similar functions.

Web Dynpro has the following features:

- Separation of display and business logic
- Easy change in the layout with the use of graphical tools
- No platform dependency of interfaces

Following are the key concepts as part of Web Dynpro architecture:

Metadata

Web Dynpro provides you with an environment for the development of web-based applications and you can use graphical tools to define web Dynpro application in the form of metadata in application development. You can also define your own events; however, event handling should be defined in a separate code and that has to be executed when an event is triggered.

The user interface in Web Dynpro application consists of small elements defined by using Web Dynpro tools. You can also change or enhance the user interface by changing these elements at run time or integrate the elements again.

Graphical Tools

There are a wide range of graphical Web Dynpro tools that you can use to generate web-based applications. You don't need to create source code for this. Following are the key features of graphical tools in Web Dynpro application:

- Define properties of user interface elements
- Data flow
- User interface layout

For all these properties, you can use graphical tools without creating a source code.

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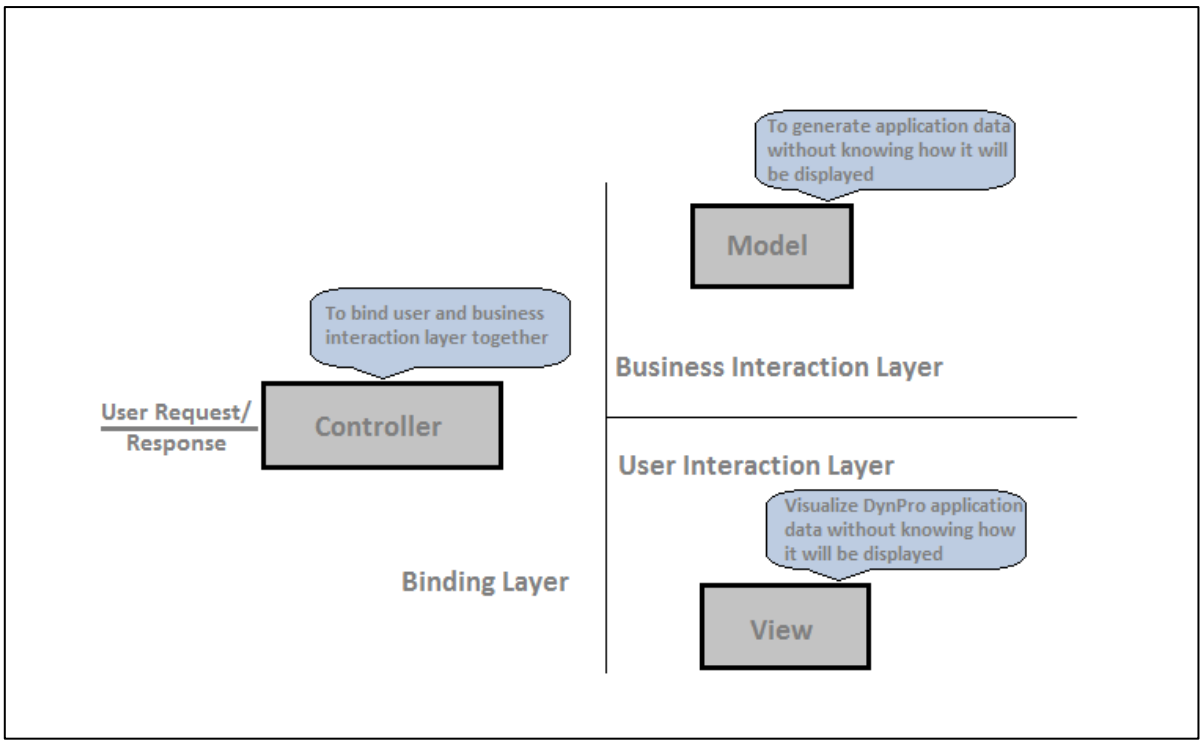

Business and Application Logic

Web Dynpro allows you to run your application on the front-end and the back-end system can be accessed using service locally or via a remote connection. Your user interface is maintained in Dynpro application and persistent logic runs in the back-end system.

You can connect Web Dynpro application to the back-end system using an adaptive RFC service or by calling a web service.

MVC Programming Model

Web Dynpro applications are based on MVC model:

Model: This allows the access to back end data in a Web Dynpro application.

View: This is used to ensure the representation of data in a web browser.

Controller: This is used to control communication between Model and View where it takes input from the users and gets the processes data from the model and displays the data in the browser.

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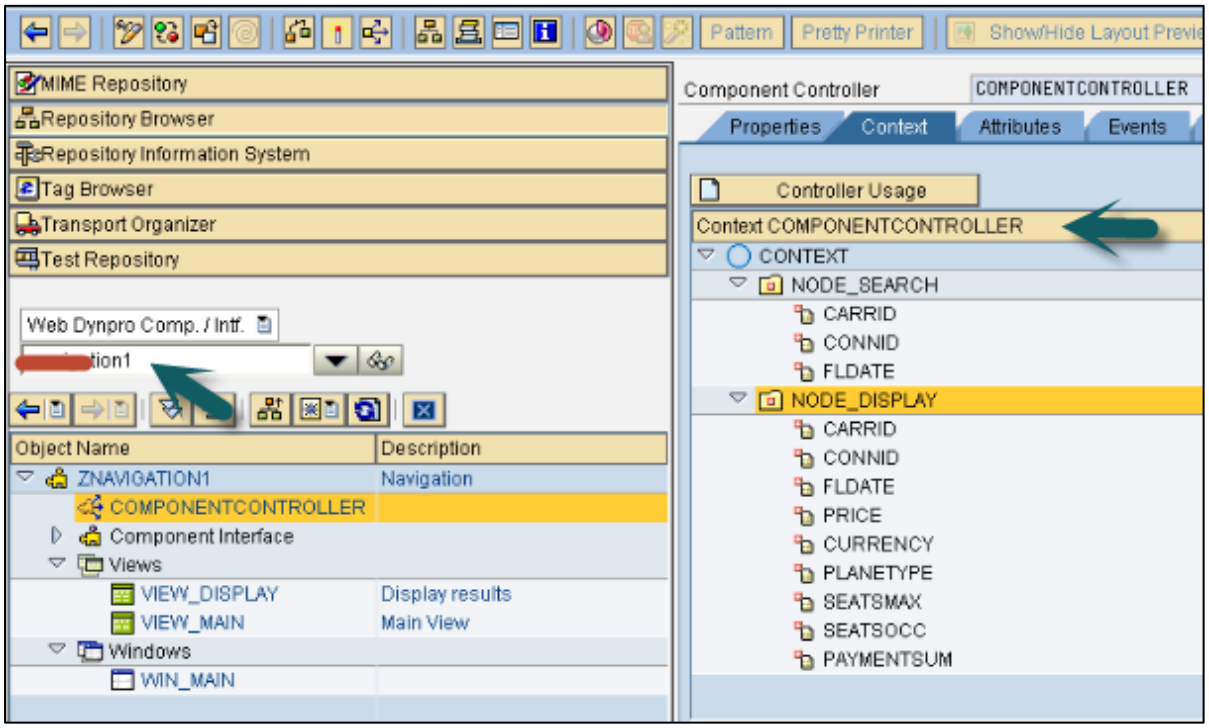
4. Web Dynpro – Navigation

In Web Dynpro application, you can navigate from one view to the other view using plugs.

Run T-code: SE 80 and create a simple Web Dynpro component:



We have created a Web Dynpro component with two nodes and two views.

VIEW_DISPLAY displays the output in a tabular format and VIEW_MAIN performs search parameters. In VIEW_MAIN you have configured the search layout and VIEW_DISPLAY contains the display layout.

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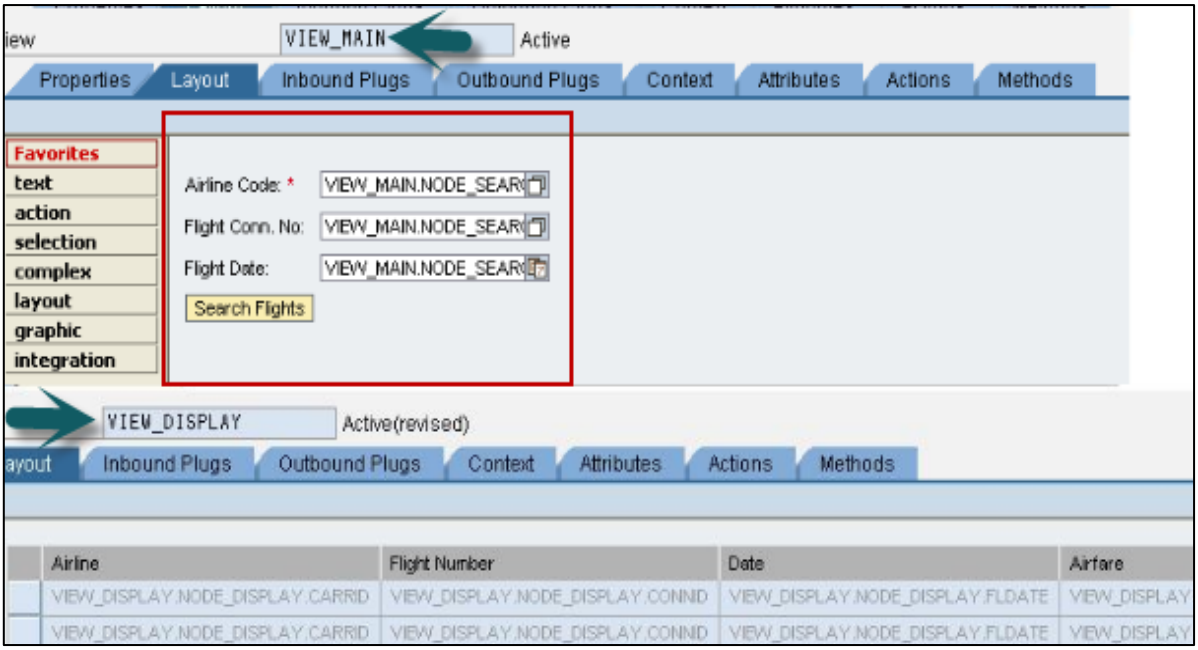
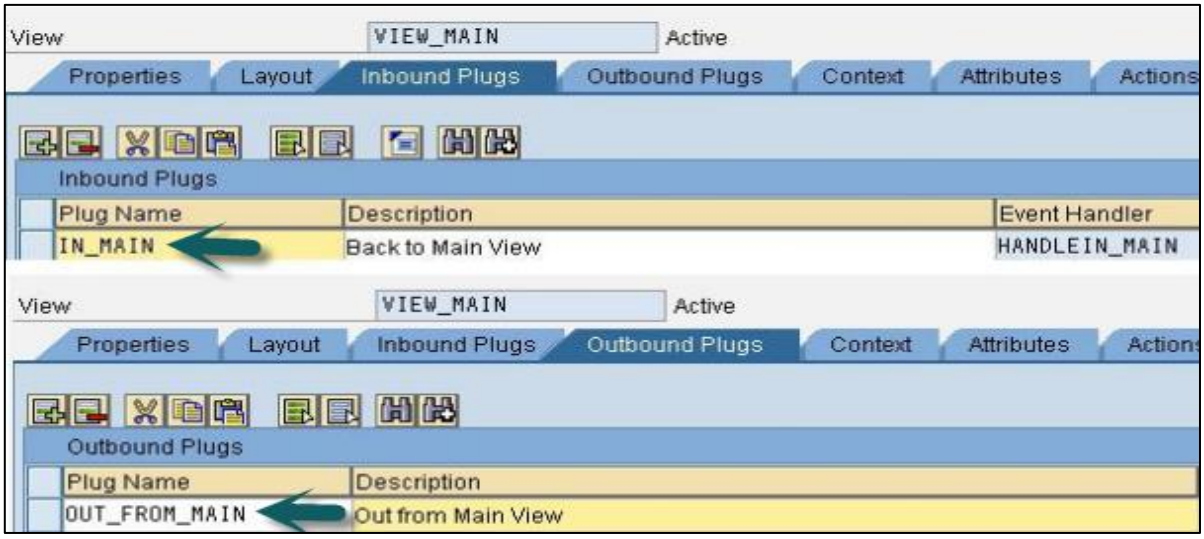


In VIEW_MAIN you have configured inbound plugs IN_MAIN and OUT_FROM_MAIN as outbound plugs. Similarly, create an inbound and outbound plugs for VIEW_DISPLAY.



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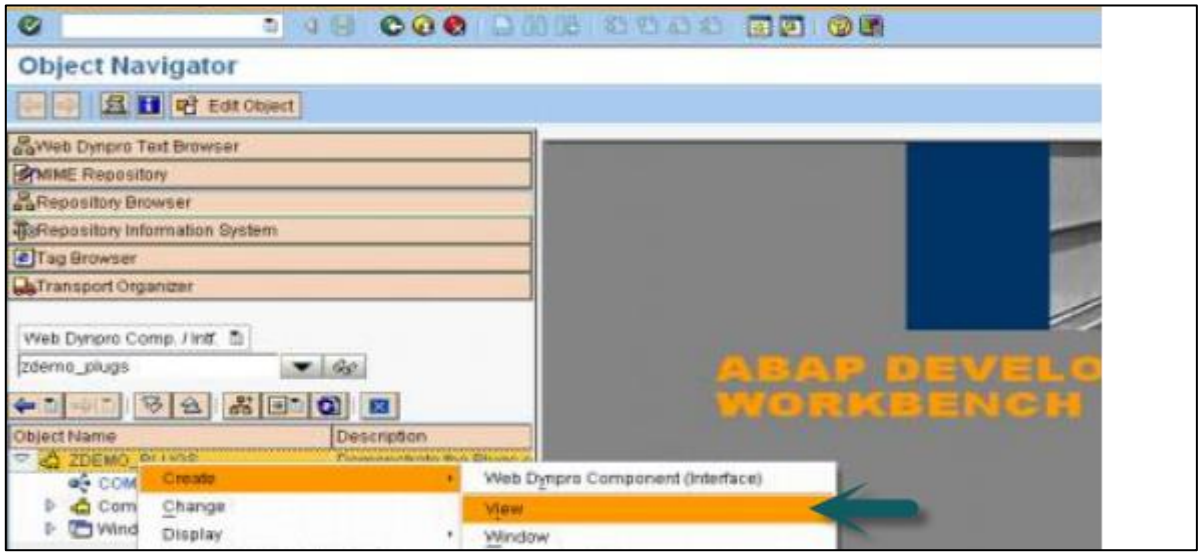
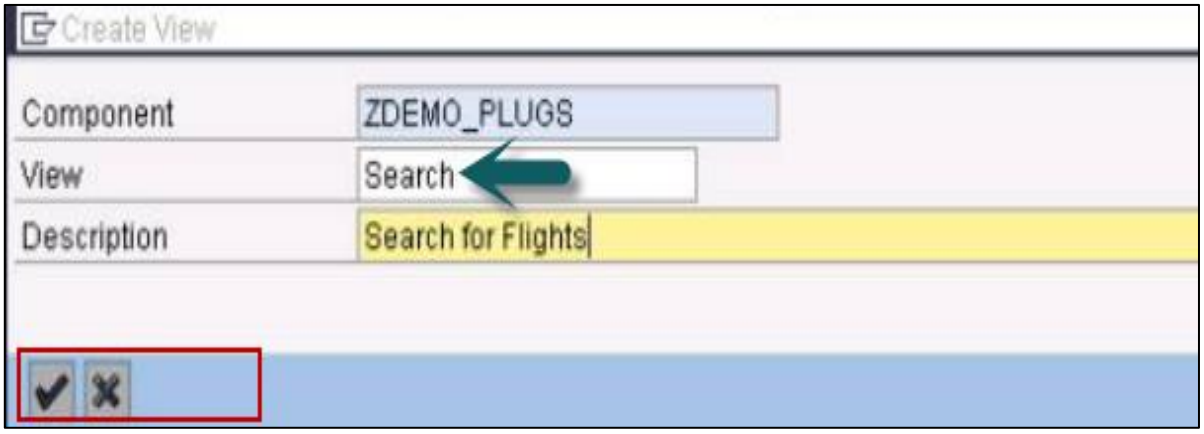
How to Create a New View?

Step 1: Click the component in object tree and go to the context menu as shown in the following screenshot:



Step 2: Enter view name and click on tick mark.



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