

IBM WebSphere Development Studio Client for iSeries



Tutorial: WebFacing a 5250 RPG application

Version 5.1

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Introduction to this tutorial

You can use the IBM® WebFacing Tool to create Web front ends to iSeries™ applications that use DDS for their green-screen transactions. You choose a Web style for your green-screen application, generate a set of JSP and XML files that interact with the logic of your program, and then easily test your application in the WebSphere® test environment of the workbench. When you are ready to deploy your application, you can generate standard J2EE WAR and EAR files that can be installed on a WebSphere Application Server.

The WebFacing Tool is ideal for applications that you want to deploy broadly over a corporate Intranet or the Internet, where rapid deployment takes precedence over customizing the look and feel of each page. With the WebFacing Tool you can continue to deliver your application as a 5250 application, and use the same ILE and non-ILE programs to deliver the application through the Web. Note that there are some restrictions, described in the WebFacing documentation, on which DDS keywords can be converted to generate sets of JSP and XML files.

CODE Designer has been enhanced to work with the WebFacing Tool. A new Web Settings section helps you specify how your DDS fields will be handled by a browser after they are converted using the WebFacing Tool, without affecting their appearance on the green-screen.

Tutorial purpose:

Before you begin, take a minute to read the learning objectives for the tutorial.

Length of time:

This tutorial takes approximately 1.5 hours to complete.

Modules:

Work on the modules in sequence. The pictures in the modules show similar tasks. Some of the names and icons may be different from the environment you will be working with when you complete the modules.

Prerequisites

You should also learn about the prerequisite knowledge for the tutorial before beginning. This section describes the type of knowledge you need to already have to fully benefit from this tutorial.

Learning objectives

In order to successfully convert existing DDS screens in a green-screen application to a Web browser user interface, you will need to understand many concepts. This tutorial is designed to help you learn about those concepts while working through the steps.

In this tutorial, you will convert the DDS screens in an existing 5250 order entry application to a Web browser user interface. While creating a browser user interface, you will learn how to use the IBM WebFacing tool. You will also learn how to customize the output of the conversion process using the IBM WebFacing tool and the CODE Designer. Finally, you will learn how to run the WebFacing application in the WebSphere Test Environment that is part of Development Studio Client.

The tutorial is broken into eleven modules, each with their own specific learning objectives. You can choose to complete all modules, or you can choose to complete only a few, depending on your own learning goals. Each module is composed of several exercises. These exercises must be completed in order to successfully achieve the module's goals.

The first module, Reviewing the 5250 application, helps you learn about the 5250 order entry application before you start and use the WebFacing tool to convert it. This allows you to become familiar with the 5250 screens and the behavior of the application. After the conversion with the WebFacing tool you can then easily compare the 5250 and the Web user interface.

The second module, Creating a WebFacing project explains that before you can use the WebFacing tool to reface your application you need to create a WebFacing project. You will also learn that this project is a complete Web project with the directory structure and files needed to conform to the Java™ 2 platform, Enterprise Edition (J2EE) standard of a Web application and it also contains additional information unique to WebFacing like the source to be converted and runtime information.

The third module, Converting selected source members, helps you learn about the conversion option, how to select one or multiple files for conversion and how to work with the conversion logs to check the results of the WebFacing conversion.

The fourth module, Running the Web application explains how to run the Web application in the WebSphere Test Environment. You also learn about the WebSphere Test Environment. You see the results of the conversion results and have the opportunity to try the converted interface like you did in module 1.

The fifth module, Changing the user interface, you learn how to change certain aspects of the user interface related to the conversion process.

The sixth module, Changing the style of the Web user interface, you learn how to create a new style, change style settings, specify the new style to be used for the project and refresh the project with the new style.

The seventh module, Adding command key rules and labels, explains how to add your own command key recognition rules to the WebFacing conversion properties. You will also learn how to add command key labels that have missing labels in the DDS source.

The eighth module, Working with more style properties, you learn how to apply changes to windows, the look of push buttons, and subfiles.

The ninth module, Adding authentication, explains how to secure your application by forcing authentication before the application is called.

The tenth module, Enhancing the input page using Web tools, explains how to take the plain index.html page generated by the WebFacing tool and add color and some pictures to make the input page of the Web application more interesting. You will learn how to use the Page Designer tool and some other related Web tools.

The eleventh module, Exporting to iSeries WebSphere Application Server Express 5.0, describes how to export files created by the WebFacing Tool to a remote WebSphere Application Server, to publish and deploy your application as you would when your application is ready for production.

Be sure to read about the Prerequisite knowledge for the tutorial before beginning. This section describes the type of knowledge you need to already have to fully benefit from this tutorial.

Prerequisite knowledge

In order to complete this tutorial end to end, you should already have working knowledge of the following:

- Basic Microsoft® Windows® operations such as working with the desktop and basic mouse operations such as opening folders and performing drag-and-drop operations
- How Web applications work
- How to use a browser to navigate the Internet

It is also useful, but not necessary, for you to have basic knowledge of the following:

- DDS
- Servlets and Java Server Pages (to understand the generated output of the WebFacing tool)

If you do not have current knowledge of these technologies and concepts, you might be interested in learning more about these after you complete this tutorial. You can find some additional information on these topics in the Help system that is part of WebSphere Development Studio Client for iSeries. There are also plenty of resources on the Internet at our product Web page <http://ibm.com/adwtools/iseries>.

In the next module, you use a 5250 emulation screen to start the sample Order Entry application. In this application you will be prompted with the first screen for a customer number. You will work with the help panels this application provides. You will select a customer from a list of valid customers and then go through the steps of filling an order by specifying the quantity ordered. After all parts and their quantities for this order have been specified you complete the order by pressing a specific command key. The application will then prompt you for a new customer number to handle the next order.

When you are ready to begin, start with the first module.

Chapter 1. Reviewing the 5250 order entry application

In this module, you are going to explore the application by invoking it from a 5250 session and working with the applications green screens and command keys. This will also test your user profile setup. If you can run this application directly without changing the job environment on the iSeries, the WebFacing conversion and the WebFacing server will not have problems during the remaining exercises later.

Note: If you have problems make sure the library list for your job is setup correctly to include library WFLABXX at job start up.

You will learn about the 5250 application, before you start to use the WebFacing tool to convert it. This will allow you to become familiar with the 5250 screens and the behavior of the application. After the conversion with WebFacing tool you will then be able to compare the 5250 and the Web user interface.

Remember: Before beginning this module, you should learn about the Prerequisite knowledge for the tutorial.

In order to review the 5250 order entry application, there are several steps you will need to learn about and follow:

- Starting the 5250 application
- Knowing what screens the application provides
- Knowing how the application works in its 5250 environment
- Knowing what command keys are supported and what functions they allow

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Starting the 5250 application
- Accessing the online help
- Selecting a customer
- Filling the order
- Completing the order

The exercises in this module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

This module will take approximately 5 minutes to complete.

Starting the 5250 application

You need a 5250 emulator on your workstation to start the order entry application.

To start the 5250 application:

1. Start a 5250 emulation session.
2. In the **User ID** field, type your user ID.
3. In the **Password** field, type your password.

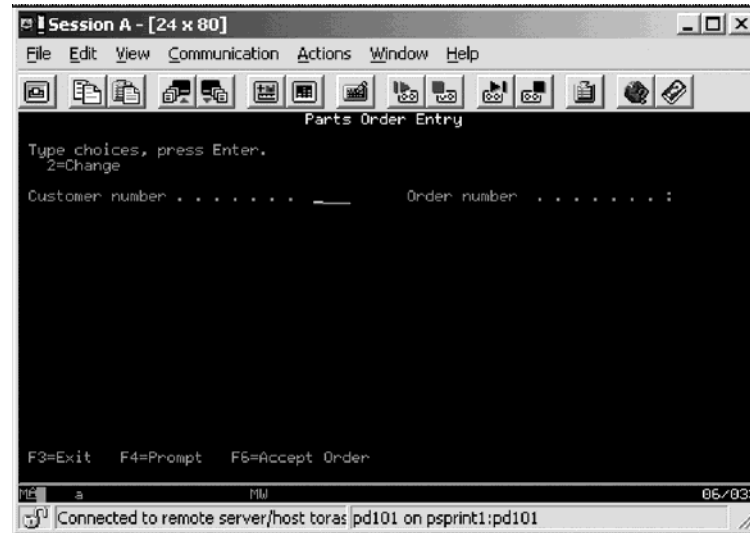
- On the command line of the 5250 screen, add the library WFLABXX to your library list:

```
ADDLIBLE WFLABXX
```

- Invoke the Order Entry Application:

```
CALL ORDENTR
```

The application starts and shows the first panel. This first screen prompts for a customer number. You have a choice of keying in the customer number directly or you can press **command key 4** to display a list of existing customers.

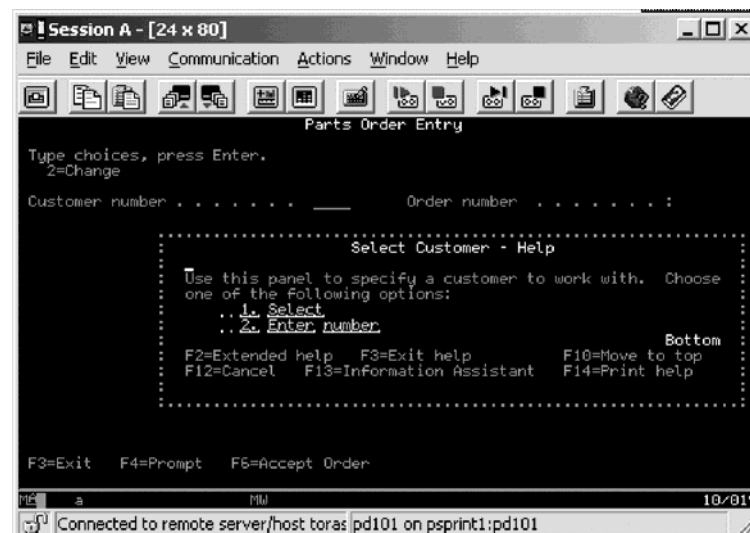


Accessing the online help

Before you go ahead with the order entry process, try the help. This application uses User Interface Manager (UIM) help. You will also convert these UIM help panels with the WebFacing tool. To understand the results of the UIM help conversion, try the help in the 5250 environment and then later in the browser.

- Move the cursor to the **Customer number** field.
- Press **command key 1**.

Panel group help displays for the customer number:



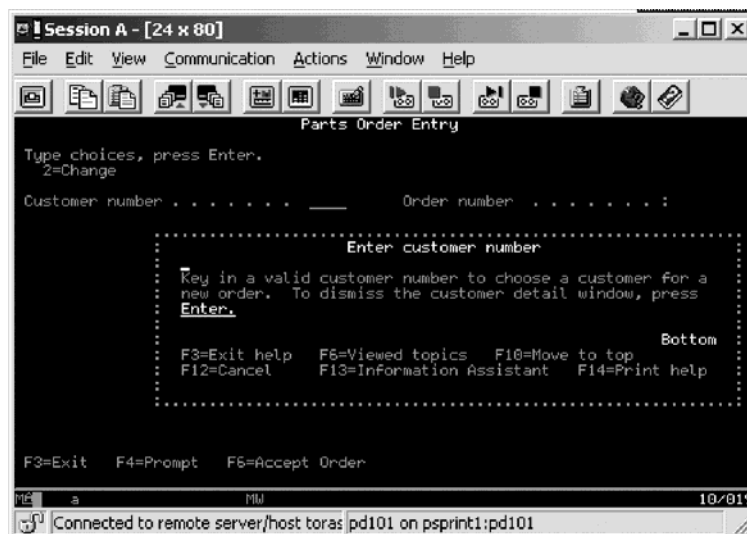
3. To see more help, move the cursor underneath the 1 in the help area and press the **Enter** key.

Help for requesting a customer list displays:



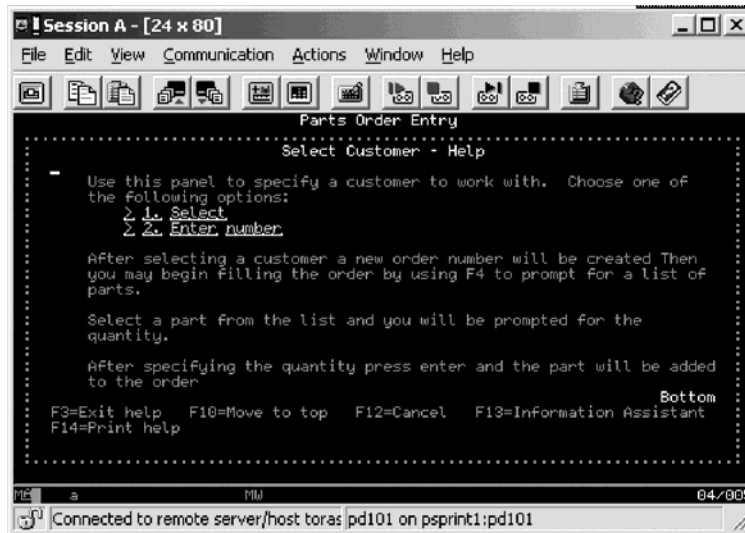
4. Press **command key 12** to return to the help for the **Customer number** field.
5. To see help for the second choice, move the cursor underneath the 2 in the help area and press the **Enter** key.

Now you see detailed help for specifying a valid customer number:



6. Press **command key 12** to leave the help for the **Customer number** field. The main help panel in the Select customer – Help area shows.
7. Press **command key 2** to get to the extended help.

Here you see the extended help for the **Customer number** field:



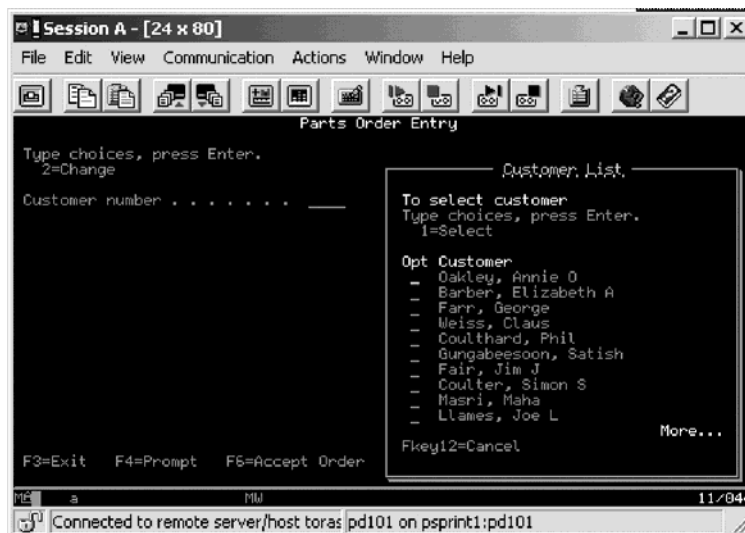
8. Press **command key 12** to leave the extended help for the **Customer number** field.
9. Press **command key 12** again to leave the help for the **Customer number** field.

Selecting a customer

Now you have an understanding how the help panels in this application work and look. Next you need to identify the customer related order. You have the choice of specifying a valid customer number, or you can get a selection list of valid customers. Use the selection list to because it uses the WINDOW DDS keyword and so you can see how the WebFacing tool converts a DDS window.

1. Press **command key 4** to display the customer selection list.

A list of customers displays:



2. In the **Options** field, type 1 to select a customer.
3. Press the **Enter** key to proceed.

This returns you to the initial panel now filled with detailed data for the selected customer.



You'll notice that an order number has been assigned as well. You are ready to order some parts.

Filling the order

The process of selecting parts is similar to the way you selected a customer in the previous exercise. You are able to key in the part number directly or select the part from a selection list. Next you want to work with the parts selection list.

On the order entry panel:

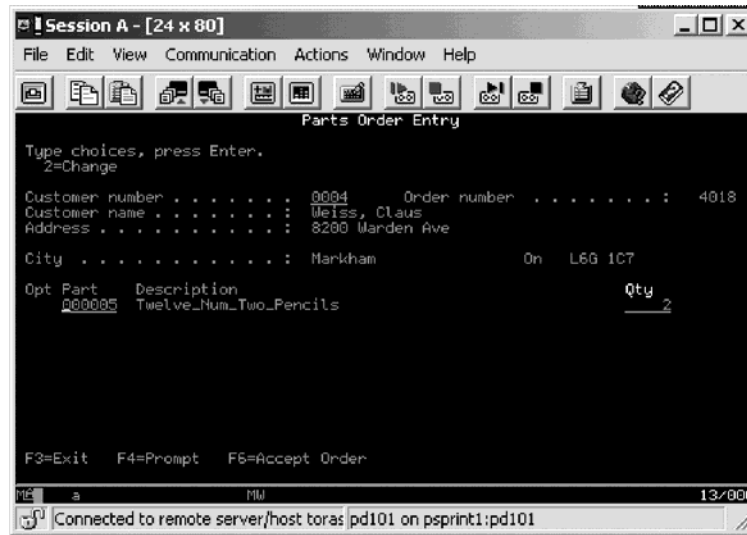
1. Press **command key 4** to see a list of available parts.

The Select Part panel opens:



2. In the **Options** field, type 1 next to a part that has lots of quantity left.

Back on the order screen, the part appears in the order; on the top line of the parts list:



Next you order a certain quantity of this part.

3. Change the **Qty** field to a value, for example 2.
4. Press the **Enter** key to add the part and quantity ordered to the order.

The detail order line for this part, with the quantity specified, is now part of this order:



Add more parts until your order is complete.

5. Press **command key 4** to see a list of available parts.
6. Select a part from the parts list and press **Enter**.
7. Specify the part quantity and press **Enter**.

Completing the order

Now you are ready to accept the order. You use the Order Entry panel to complete the order.

To complete the order:

1. Press **command key 6** to accept the order.

The order is added to the database and the next order can be filled. You return to the starting screen of the application.

You have worked with all panels in this application:

- The start order entry panel
- Several help panels
- The customer list window
- The full order entry panel
- The parts list window

You can add more orders but if you understand how the user interface of this application works, stop adding orders.

2. Press **command key 3** to exit the application.

You are now ready to put a brand new user interface onto this application.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Start the order entry application
- Use the help panels in this application
- Select a customer from the customer selection window
- Select parts from the parts selection window
- Order a certain quantity of parts for the order
- Complete the order
- Exit the application

Before you can use the WebFacing tool to reface your application you need to create a WebFacing project in the Development Studio Client workbench. The first step when starting with the WebFacing tool is to create a WebFacing project You will identify the project information, like the DDS source member names to be WebFaced, and they will be stored in a workspace on your workstation. This exercise guides you through the process of identifying the DDS and Panel Group source members to be converted by the WebFacing tool. It also goes through specifying some of the runtime information you will need later when running the WebFaced application.

You have reviewed all the panels in the order entry application. Continue to the next module.

Chapter 2. Creating the WebFacing project

In this module, you will learn how to create a WebFacing project, something that you need before you can create a Web user interface for the Order Entry Application. You will then learn how to use this WebFacing project to facilitate the conversion of your DDS source and to test the generated output.

A WebFacing project is a complete Web project with the directory structure and files needed to conform to the Java 2 platform, Enterprise Edition (J2EE) standard of a Web application. It also contains additional information unique to WebFacing, like the source to be converted.

In order to create the WebFacing project, there are several steps you will need to learn about and follow:

- Understanding the workspace
- Understanding the WebFacing project
- Understanding the WebFacing perspective
- Understanding the J2EE settings page
- Starting Development Studio Client workbench
- Starting the WebFacing tool project wizard
- Stepping through the project wizard pages
- Providing the correct input to the project wizard
- Browsing through the new WebFacing project

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Starting Development Studio Client workbench
- Opening the WebFacing perspective
- Starting the WebFacing Project wizard
- Selecting display file source members to convert
- Specifying the CL command to launch the application
- Selecting a Web style
- Completing the WebFacing project information

The exercises in this module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

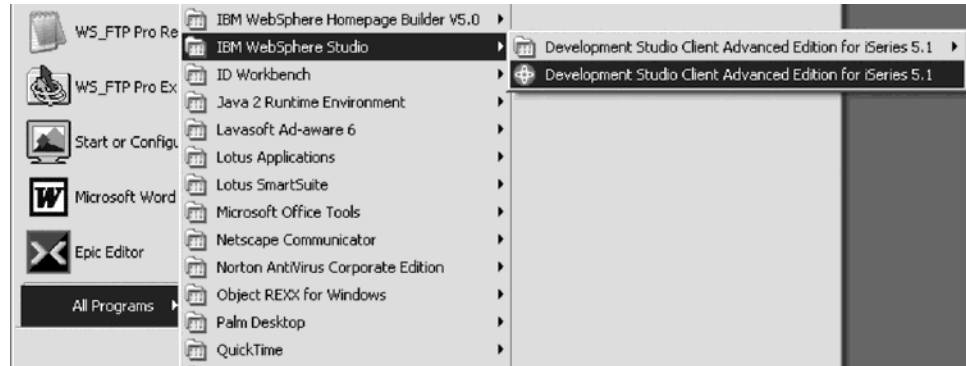
This module will take approximately 5 minutes to complete.

Starting Development Studio Client workbench

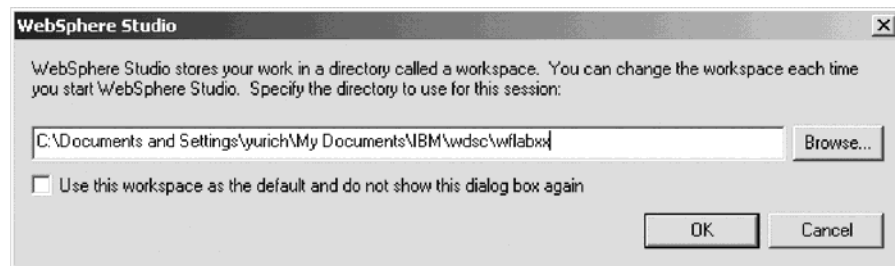
Now go ahead and start Development Studio Client.

To start Development Studio Client:

1. On the desktop task bar click **Start > All Programs > IBM WebSphere Studio > Development Studio Client for iSeries 5.1.**

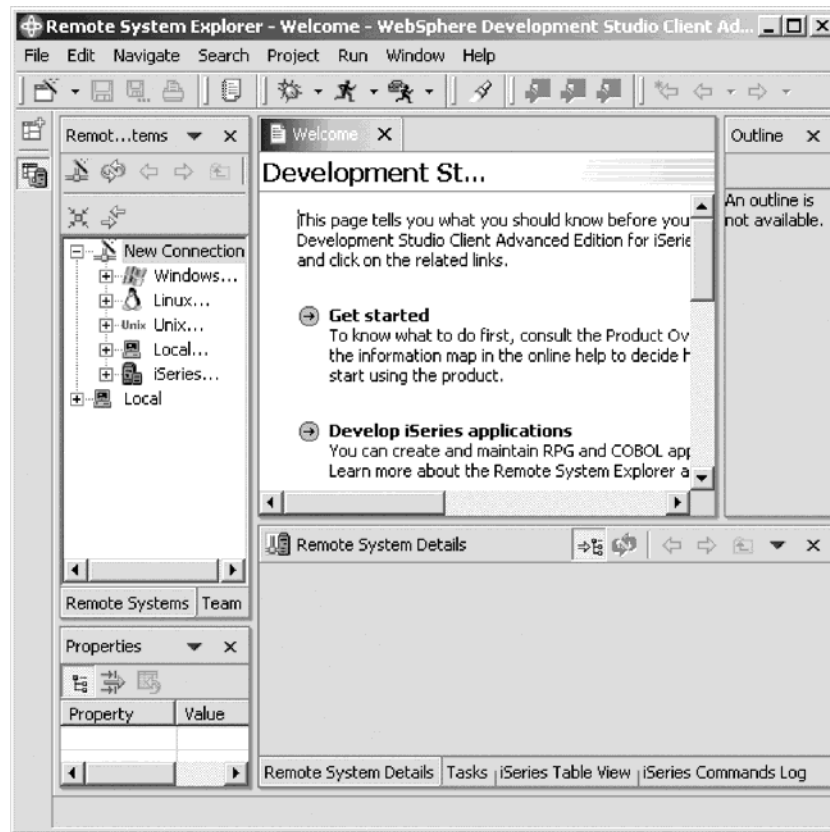


A dialog appears asking you for the workspace location, unless you used the Development Studio Client before and selected not to show this dialog again. The workspace contains all the information about your Development Studio projects. You can accept the default or store the work related to this tutorial in a separate workspace. You can always start with a new workspace later, if you don't want to mix these exercise WebFacing projects with your real work.



2. Accept the default directory structure but change the name of the workspace directory to the name wflabxx.
3. Click **OK**.

After a few moments of loading, the workbench opens, and the initial window of Development Studio Client opens:



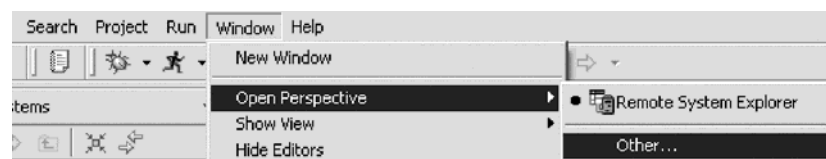
Note: If you didn't reset the workspace, or you are working with the standard version of Development Studio Client, your environment will differ slightly from the screen captures in this tutorial.

Opening the WebFacing perspective

The Development Studio Client shows the Remote System Explorer (RSE) perspective by default. This is the perspective that you would use to work with iSeries objects. It allows specifying connections to iSeries servers and provides for the programmer a similar interface to iSeries objects as the Program Development Manager (PDM) does in a green screen environment.

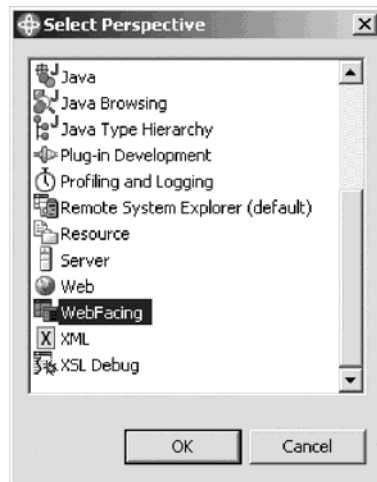
The WebFacing tool provides its own perspective since it needs to give its users access to unique views and tools targeted towards the WebFacing task. To create a WebFacing project you first need to open the WebFacing perspective.

To open a WebFacing perspective:



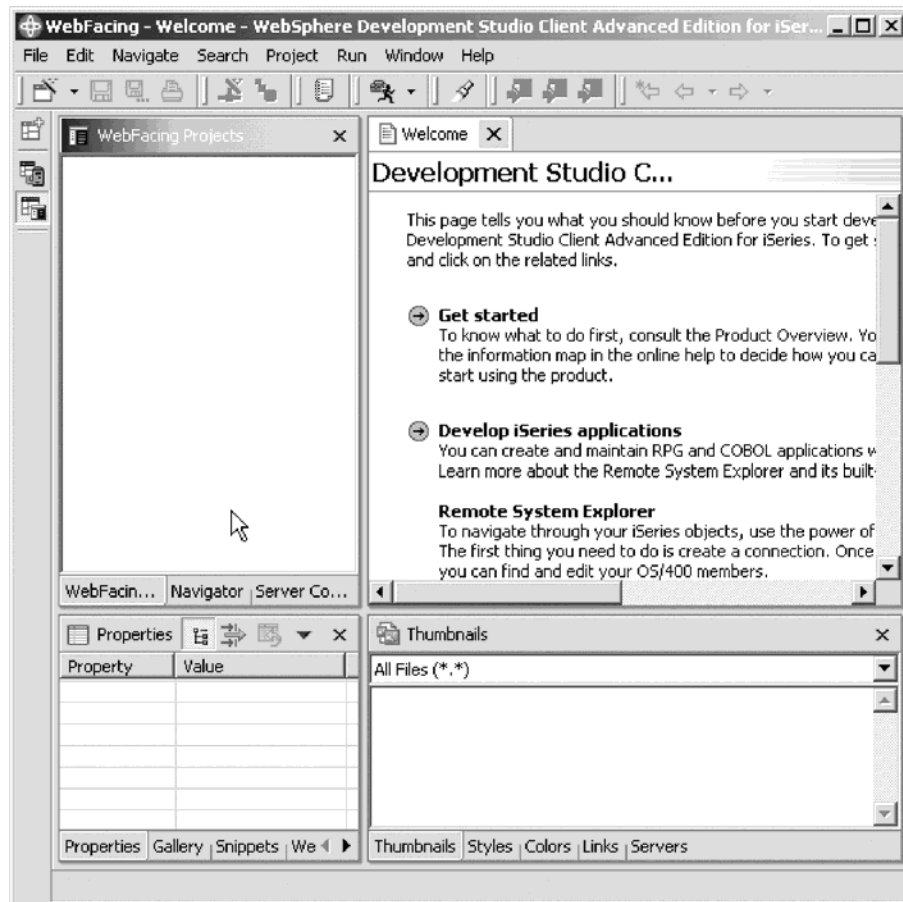
1. Click **Window > Open Perspective > Other** from the workbench menu.

The Select Perspective dialog opens:



2. Select **WebFacing** from the list.
3. Click **OK**.

The workbench now shows the WebFacing perspective with the WebFacing Projects view open in the left pane of the workbench.

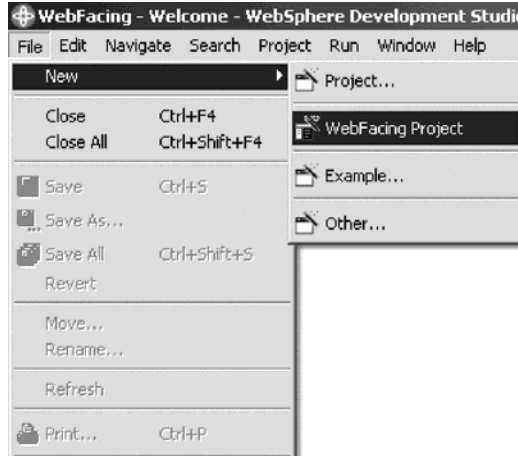


You are ready to start the WebFacing project wizard to create a WebFacing project.

Starting the WebFacing Project wizard

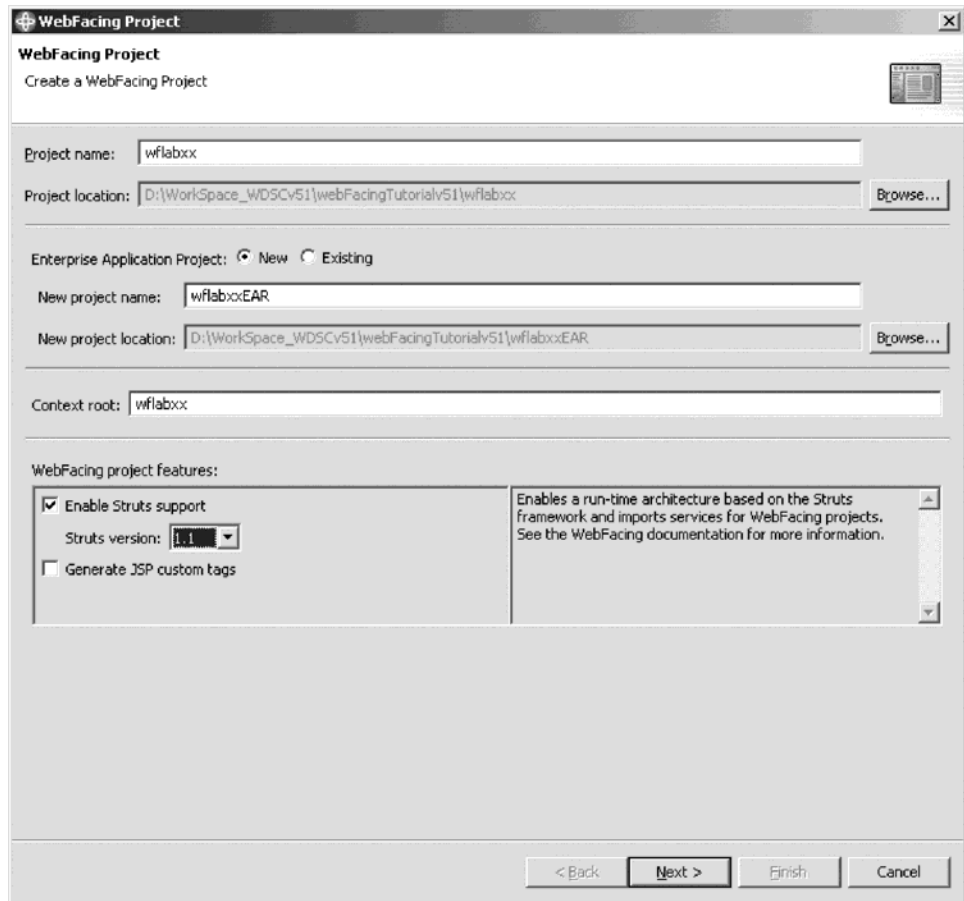
To start the WebFacing Project wizard:

1. In the WebFacing perspective, click **File > New > WebFacing Project** from the workbench menu:



This will start the WebFacing project wizard.

2. In the WebFacing project wizard you will be presented with the WebFacing Project page:



3. In the **Project name** field, type the project name wflabxx.
4. Change the Enterprise Application project name to wflabxxEAR.

This will create a unique Application file for this WebFacing project.

5. Leave the default value for the **Context root** field.

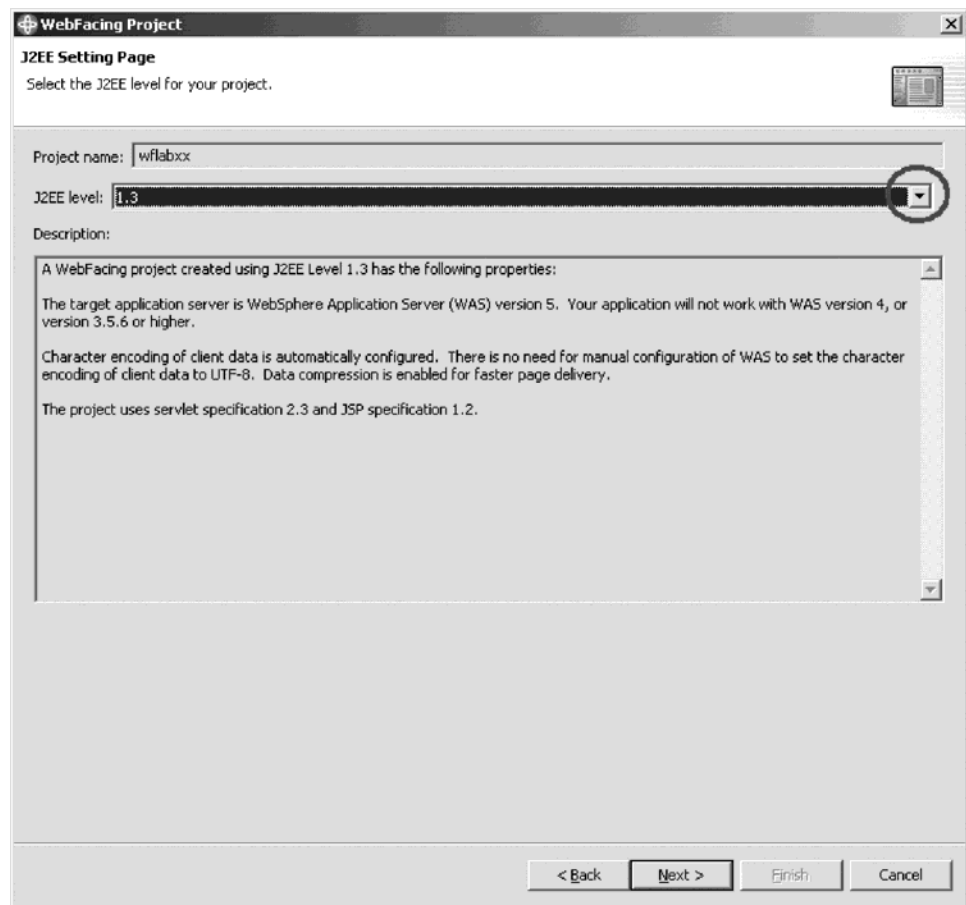
The default value for the context root is the name you provided for your WebFacing project. The context root is the Web application root, the top-level directory of your application when it is deployed to a Web server. The context root can also be used by the links builder to ensure that your links remain ready to publish as you move and rename files inside your project.

6. Leave the **Enable Struts support** check box selected as you want to create a project that uses Struts technology.
7. Click **Next**.

The J2EE Settings page opens.

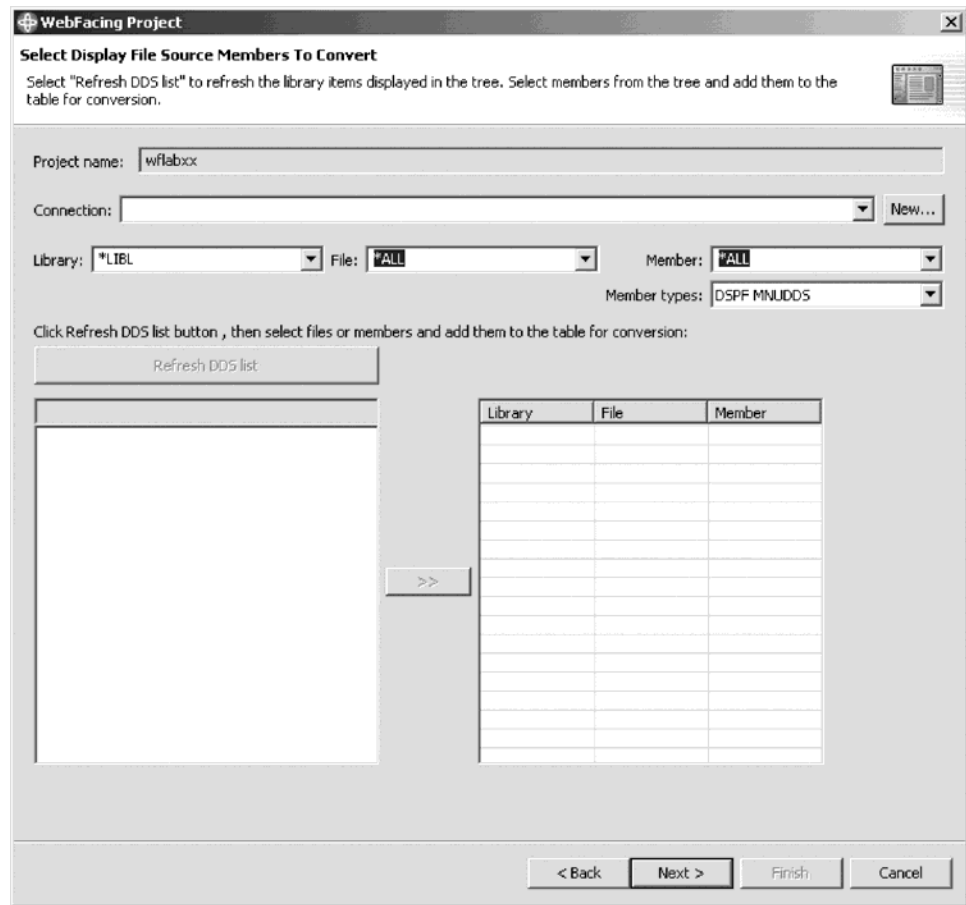
The J2EE Settings page allows you to specify the J2EE level you want the WebFacing tool to use when creating the files for your WebFacing project. Why do you want to specify a J2EE level? If you plan to use the WebSphere Application Server version 5 only then select J2EE level 1.3. If you are using previous versions of WebSphere Application Server in your environment and are planning to deploy the WebFaced application to these versions then use J2EE level 1.2 since these older versions of WebSphere Application Server don't support the J2EE level 1.3. In this exercise you will use the WebFaced application in the WebSphere Test environment, which is version 5, so you will use J2EE level 1.3.

8. Select **1.3** from the **J2EE level** list.



9. Click **Next**.

The Select Display File Source Members to Convert page opens:



Selecting display file members to convert

On this second page of the WebFacing project wizard you need to specify the name of the iSeries server that contains your display file DDS source, as well as which members of the in the source file you want to convert. Specifically, the WebFacing Tool needs to know these names:

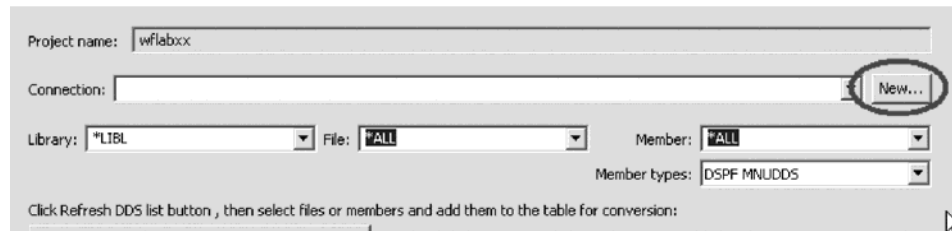
- Server name
- Library name
- Source file name
- Member name

Note: You need to identify members for all record formats used in your application. If you miss one and at runtime the record format gets requested, your end user will get a Page not found error.

First since you are starting with a new workspace, you need to specify the iSeries server name to specify where the Data Description Source (DDS) is located,

To connect to an iSeries:

1. Click **New** beside the **Connection** list.



The screenshot shows a web-based interface for creating a connection. At the top, there is a 'Project name' field with the value 'wflabxx'. Below it is a 'Connection' field which is currently empty, and a 'New...' button is circled in red to the right of this field. Underneath the 'Connection' field are three dropdown menus: 'Library' set to '*LIBL', 'File' set to '*ALL', and 'Member' set to '*ALL'. To the right of these is a 'Member types' dropdown set to 'DSPF MNUDDS'. At the bottom of the window, there is a small instruction: 'Click Refresh DDS list button , then select files or members and add them to the table for conversion:'.

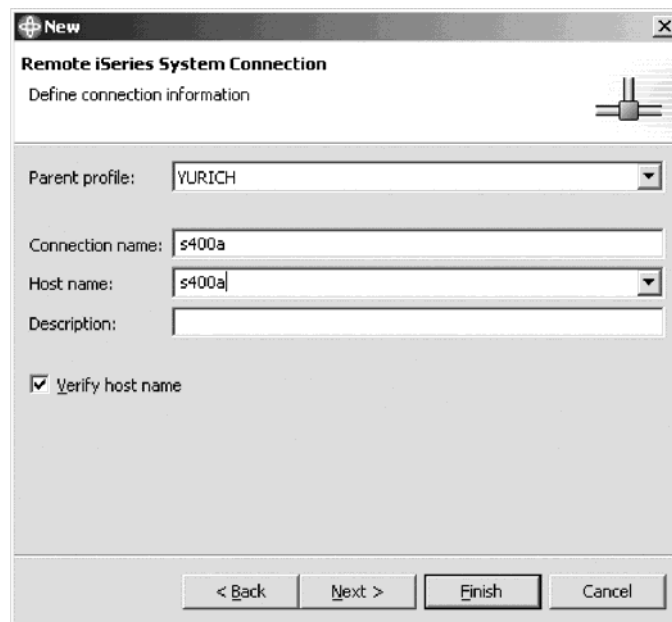
The Name personal profile page opens:



The dialog box is titled 'New' and 'Name personal profile'. It contains the text 'Uniquely name user profile' and a small icon of a person. Below this is a paragraph of introductory text: 'Welcome to Remote Systems. Connections can be sharable by the team or private to you. Enter a profile name to uniquely identify you from your team members. You will decide for each new connection whether it is owned by the team profile or your profile.' A text input field labeled 'Profile:' contains the text 'YURICH'. At the bottom of the dialog are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

2. Accept the default profile name as this is your own private connection.
3. Click **Next**.

The Remote iSeries System Connection page opens:



The dialog box is titled 'New' and 'Remote iSeries System Connection'. It contains the text 'Define connection information' and a small icon of a person. Below this are several input fields: 'Parent profile:' with a dropdown menu showing 'YURICH'; 'Connection name:' with a text input field containing 's400a'; 'Host name:' with a dropdown menu showing 's400a'; and 'Description:' with an empty text input field. There is a checked checkbox labeled 'Verify host name'. At the bottom of the dialog are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

4. In the **Host name** field, type the name of the host system, for example s400a.

Note: This is your iSeries server name; don't use the one shown unless your system is named S400A.

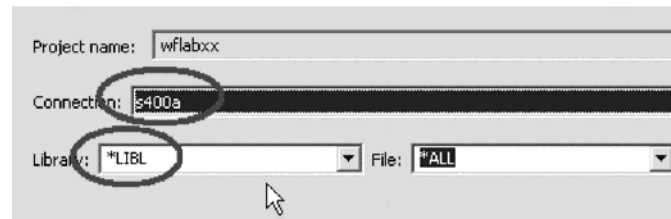
The connection name will be filled automatically with the same value.

5. Leave the **Verify host name** check box selected to verify that the host name or IP address exists.
6. Click **Finish**.

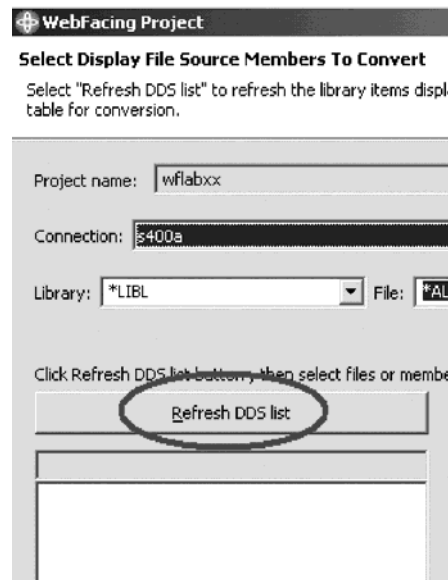
The connection is created and can be re-used by all tools in the workbench.

The connection wizard also checks whether the iSeries host can be reached and if this test is successfully completed, you return to the Select Display File Source Members to Convert page.

7. Check that your iSeries server is selected in the **Connection** list.



8. Make sure that *LIBL is selected in the Library list.
9. Click **Refresh DDS list**.



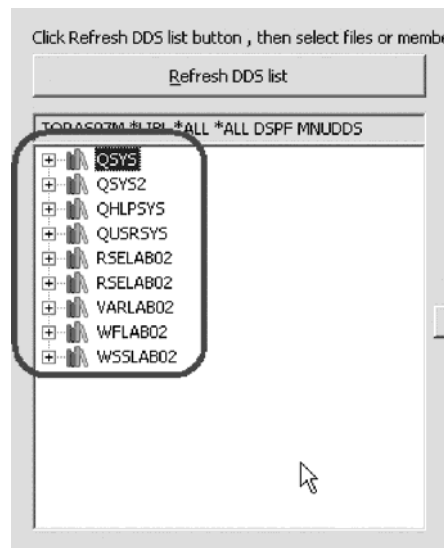
A User ID and password dialog opens:



10. In the **User ID** field, type your user ID. Use the same user ID that you used when running the Order Entry application in Module 1.
11. In the **Password** field, type your password.
12. Select the **Permanently change user ID** check box.
13. Select the **Save password** check box.
14. Click **OK**.

A connection to the iSeries server gets established. The library list of your iSeries job is displayed under the **Refresh DDS list** button on the Select Display File Source Members to Convert page.

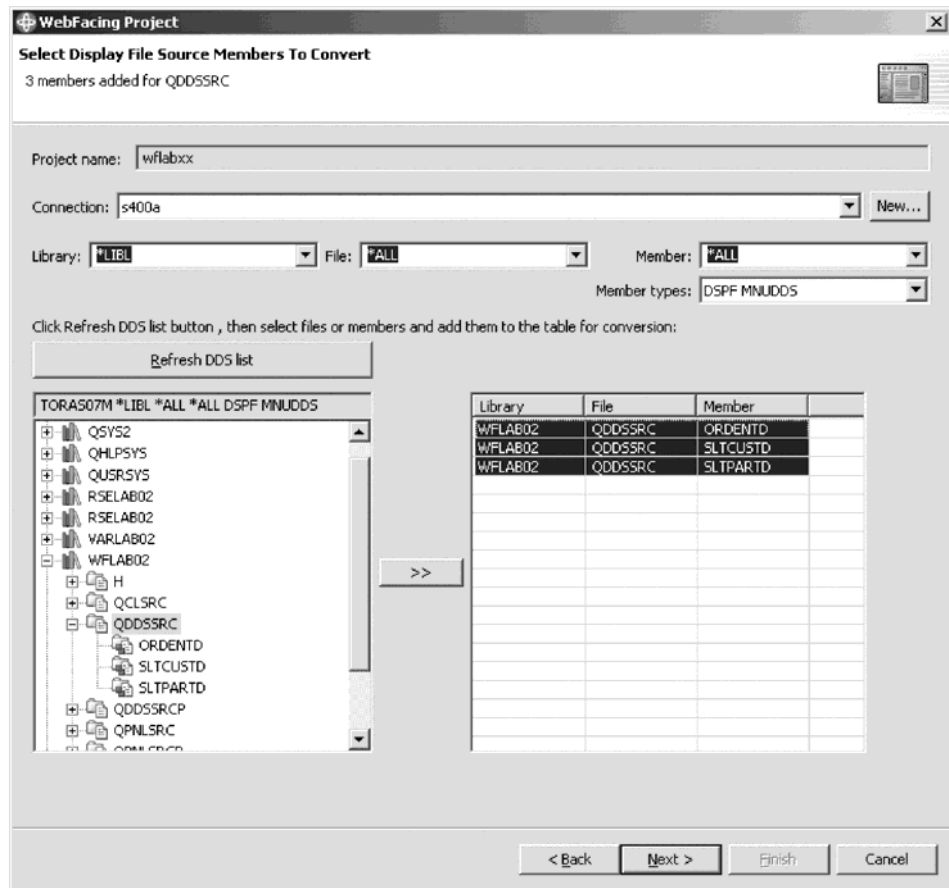
If you do not see the library WFLABxx in your library list then your job is not set up correctly to include library WFLABXX at job start up.



To select DDS members to convert:

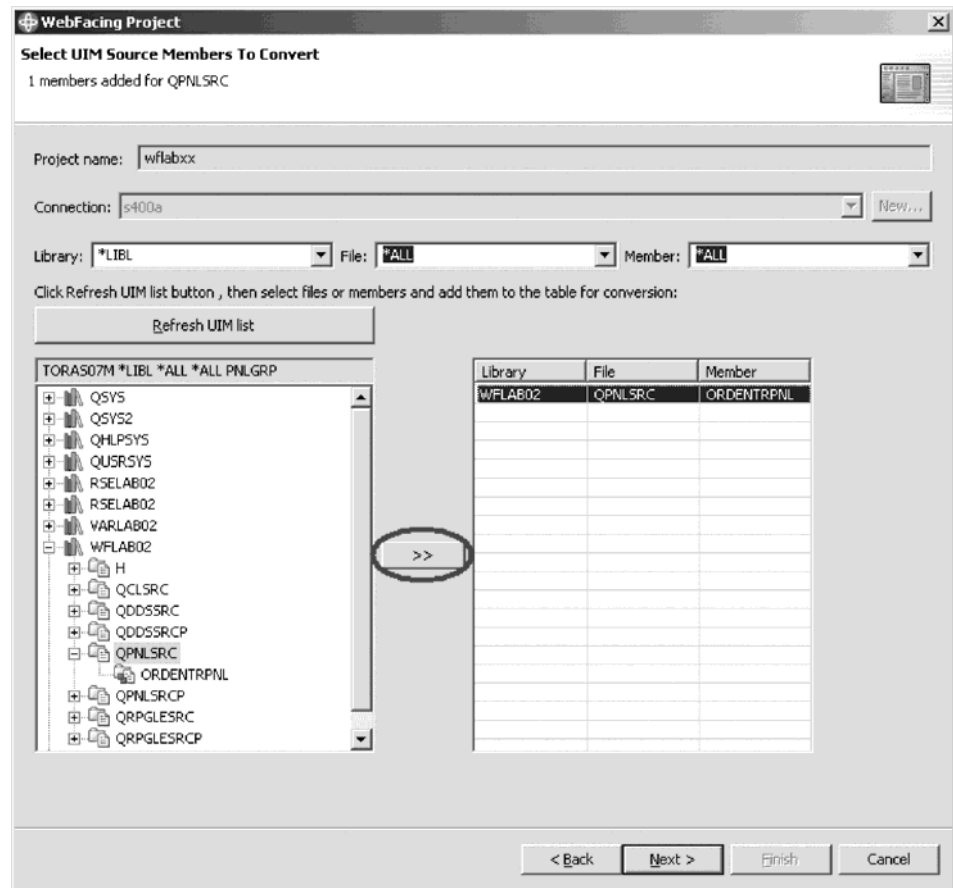
1. Select the WFLABXX library from the list.

- Click the plus sign (+) beside the WFLABXX library to expand it:



- Select the QDDSSRC source file from the expanded list.
- Expand QDDSSRC and select all members from the list.
- Click **>>** push button in the middle of the page to copy the selected members over to the list of members to be converted at the right.
Tip: To move all members in a source file you can select the source file icon itself and click the **>>** push button. This will add all members in a source file to the list of members to be converted.
- Click **Next** to proceed to the next page of the wizard.
The WebFacing Tool now knows which DDS members to convert for this project. The conversion hasn't been done but the information is stored for future use.

The Select UIM Source Members to Convert page opens:



Now you have to identify the panel group source containing the help information for the Order Entry application.

7. Click **Refresh UIM list** push button.
8. Expand library WFLABXX.
9. Select the QPNLSRC source file from the expanded list of library WFLABXX.
10. Click **>>** push button in the middle of the page to copy all members over to the list of members to be converted at the right.
There is actually only one panel group member ORDENTRPNL in this source file.
11. Click **Next** to proceed to the next page of the wizard.
The Specify CL Commands page opens.

Specifying the CL command to launch the application

You will now provide the information that will allow the WebFacing wizard to create the initial index.html page to start the Order Entry application. Do you remember what you typed on the command line to start the Order Entry application in the 5250 emulation session during the first exercise in module one? In case you forgot; it was: CALL ORDENTR

Why should you remember? The WebFacing run time needs to know the invocation command for your application in order to send this invocation command to the iSeries server to start your application from the browser. The page in the WebFacing project wizard will allow you to specify the necessary

information CL command and Sign on information:

WebFacing Project

Specify CL Commands

Enter the CL commands that are used in your application, the command labels you want to use, and the signon preference for the generated hypertext links.

Project name: wflabxx

WebFacing generates hypertext links that you can use to launch your application from the web. In order to do this, it needs to know the text that will be shown for each link and the CL command that each link will invoke. On this page you can define multiple links, in case several CL commands are used to launch your application.

If your program requires parameters, you can enter them as variables in the CL command. For example: to invoke program MYPGM with a part number parameter, you would enter CALL MYPGM PARM(&part) as the CL command. The variable "&part" will be replaced when you click on the invocation link. For details, refer to the generated index.html file. The invocation name is used to uniquely identify each hyperlink in the index.html file.

CL command: CALL ORDENTR

Command label: Order Entry Application

Invocation name: INV1

Prompt for signon

Sign on with specified values

User ID: WDSCLAB02

Password: ***** Confirm password: *****

Add

Modify

CL Command	Command Label	Invocation name	User ID
CALL ORDENTR	Order Entry Applica...	INV1	WDSCLAB02

Delete

Move Up

Move Down

< Back Next > Finish Cancel

To specify the CL commands:

1. In the **CL command** field, type CALL ORDENTR
2. In the **Command Label** field, type Order Entry Application.

Note: If you don't type anything into the **Command Label** field, the command label input will be copied into this field.

3. Leave the default value INV1 in the **Invocation name** field.
4. Click the **Sign-on with specified values** radio button.

This will automatically apply the user ID and password you used when you connected to your iSeries server in the previous dialog for selecting source members for invocation of this application. You will use this setup here for testing purposes to make it easier for you to start the Order Entry application without specifying the authentication information. Don't worry about security in your production environment, this can be easily changed later and you will see how to do this later in this tutorial.

5. Click **Add** on the right side of the page.

Note: Make sure the text and command you typed into the fields are actually shown in the CL Command table at the bottom of the page.

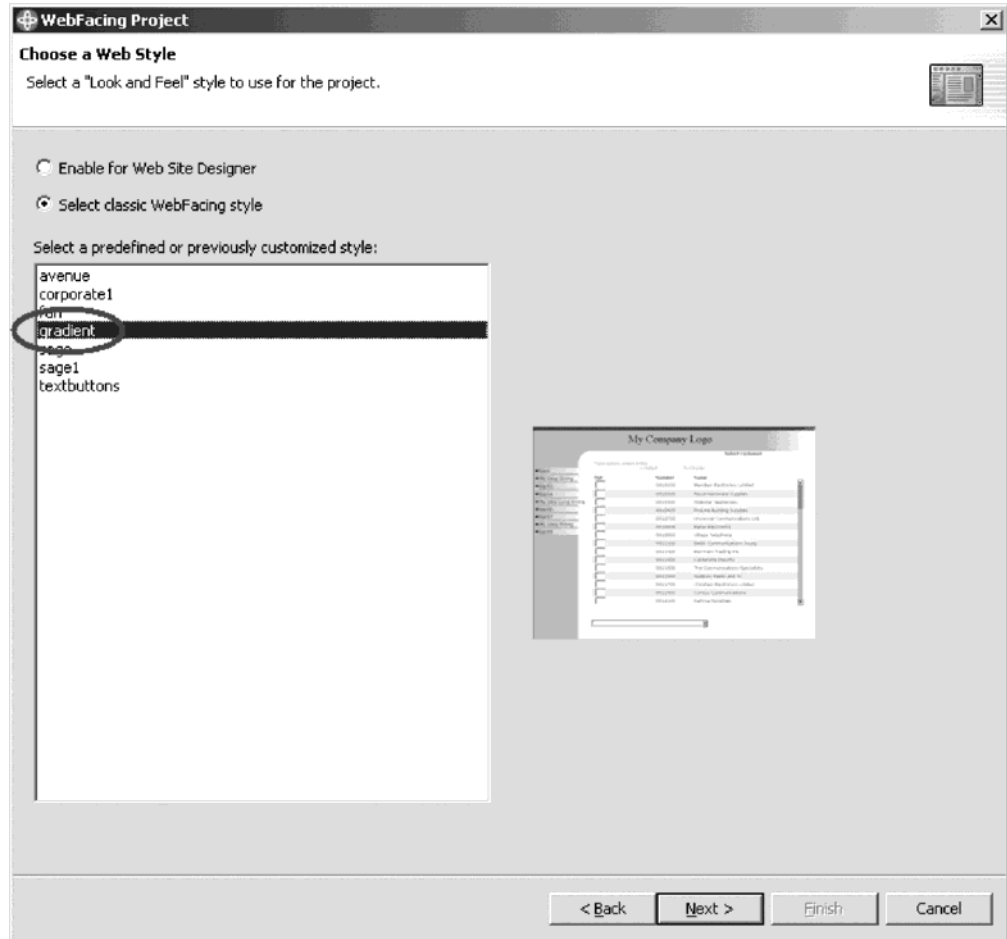
6. Click **Next** at the bottom of the wizard page.

The Choose a Web Style page opens.

Selecting a Web style

Next you select a Web style for your converted screens.

To select a Web style:



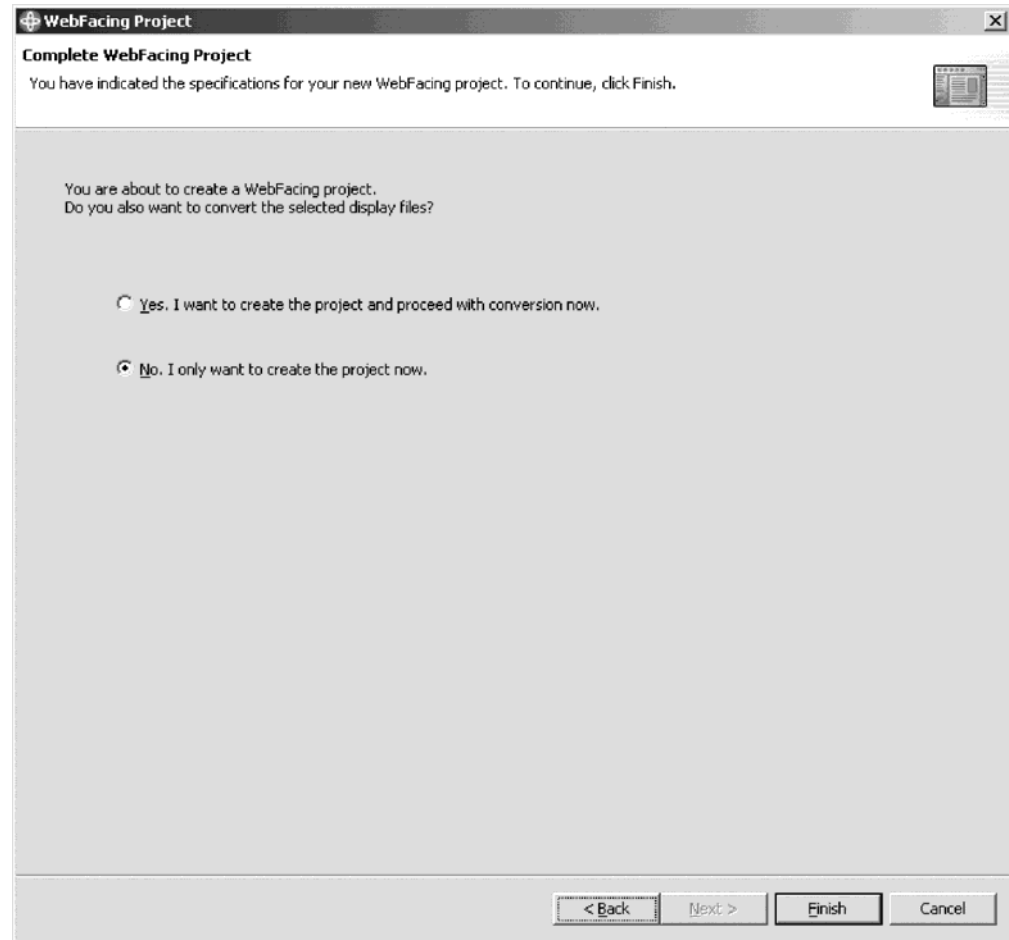
1. Select the **gradient style** from the list of available styles.
2. Click **Next**.

The Completing WebFacing Project page opens.

Completing the WebFacing project information

On this page you have choice of creating the project and converting the source in one step or only creating the WebFacing project.

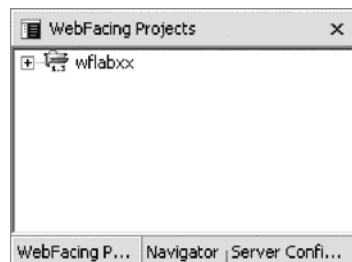
You will just create the WebFacing project. You don't need to convert the source now. Conversion is part of the next module.



To complete the WebFacing project information:

1. Select the **No. I only want to create the project now** radio button.
2. Click **Finish**.

The WebFacing project is created. The workbench opens in the WebFacing perspective with your new WebFacing project in the WebFacing Projects view:



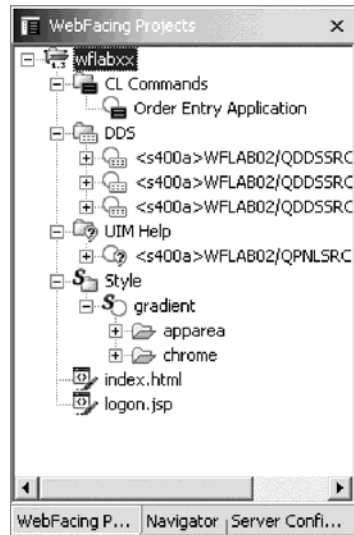
Notice that the WebFacing project icon indicates which J2EE level will be used for the project.

If you expand the **wflabxx** project you'll notice several files and folders have been added to this WebFacing project:

- The information for display file source members to be converted
- The information for panel group source members to be converted

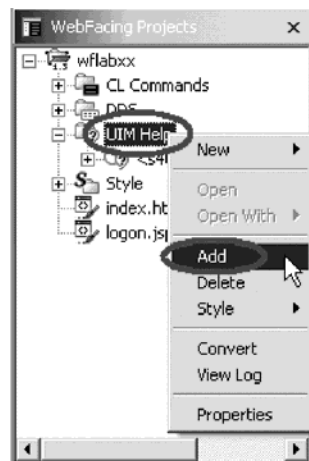
- The CL Command that will be used to start the Order Entry application
- The style to be used for the converted screens.

View of the new WebFacing project:



When you expand the folders and files under your WebFacing project you can see the information that is captured for this project.

3. Click each folder or file. Click the plus + sign beside each file or folder.
Tip: If you later need to add source members to the WebFacing project, right-click the DDS or UIM help icon and click **Add** on the pop-up menu. This will launch the WebFacing wizard and display the correct dialog.



Recap

Congratulations! You have completed this module. You should now understand how to:

- Start Development Studio Client.
- Launch the WebFacing project wizard.
- Complete the pages of this wizard in order to create a new WebFacing project called wflabxx.
- Add to this WebFacing project the following information:
 - Which DDS display file source members to use for the WebFacing conversion

- Which UIM panel group source members to convert
- The CL command which will be used to create the initial index.html page to start the Order Entry application
- The Web style to be used for the resulting Web pages
- Inspect the WebFacing project, to verify that all information entered in the WebFacing project wizard has been captured.

You have created a WebFacing project in Development Studio Client, in this project you specified which display file source and panel group source to convert and which iSeries server these source members are located on. The WebFacing tool will use this information during the conversion process. You have to specify in this exercise whether you want to convert all source members belonging to this project or selected ones only. A word regarding security, in case you are wondering, why you don't have to logon to the iSeries server during conversion. Your user ID and password have been stored during the WebFacing project setup and will be re-used here.

You are ready convert and run your application. Continue to the next module.

Chapter 3. Converting selected source members

In this module, you will learn how the WebFacing conversion creates the JSP files for the browser User Interface description, XML files for record format layouts, and several other files needed for the Web application. You will learn how to select the convert option, start the conversion and work with the conversion logs to check the results of the WebFacing conversion.

In the previous exercise you specified the complete information the WebFacing Tool needs to successfully convert your application; now you'll do the conversion itself. On the WebFacing Project icon you will select the convert option, to start the conversion, and you'll work with the conversion logs to check the results of the WebFacing conversion.

In order to convert selected source members, there are several steps you will need to learn about and follow:

- Selecting certain source members for conversion using the WebFacing Tool
- Starting the conversion process using the WebFacing Tool
- Analyzing the conversion logs.

In order to accomplish these learning objects, there are several steps that are involved, including:

- Selecting the project and source members
- Starting the WebFacing conversion
- Analyzing the conversion logs

The exercises within each module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

This module will take approximately 5 minutes to complete.

Selecting the project and source members

You will use Development Studio Client to do the WebFacing conversion, if it is not up and running already, start it now. If it is still up and running on your workstation you are ready to go ahead.

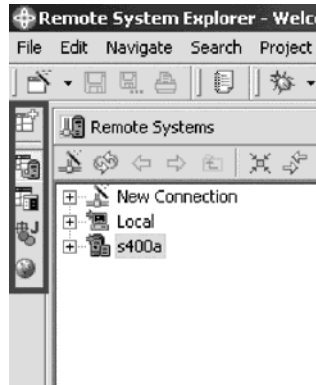
If the WebFacing perspective with your project is not visible, you need to open the WebFacing perspective.





To open the WebFacing perspective:

1. Check the side bar of the workbench for the WebFacing perspective icon and if you find it, click on the icon to switch to the WebFacing perspective that is already open but not active at the moment.


Tip: Avoid having too many instances of the same perspective open. It will improve performance of the workbench if you restrict yourself to one instance of a specific perspective being open. We have seen situations with 50 perspectives being open at the same time; this has caused severe performance impacts, so be careful.

Here you see the icons on the sidebar of the workbench. The Remote System Explorer perspective is active. The workbench window title bar shows this. Four perspectives are open in the workbench:



-  The WebFacing perspective
-  The Remote System Explorer perspective
-  The Java perspective
-  The Web perspective

2. To switch to the WebFacing perspective. Select its icon  from the sidebar.

Tip: The icon  on top of the sidebar allows you to open a new perspective. Next you start the conversion in the WebFacing perspective.

To start the conversion:

1. Select the WebFacing project you have been working on in the previous module, wflabxx.
2. Expand this project by clicking the plus sign (+) beside its icon in the WebFacing Projects view if its not already expanded.



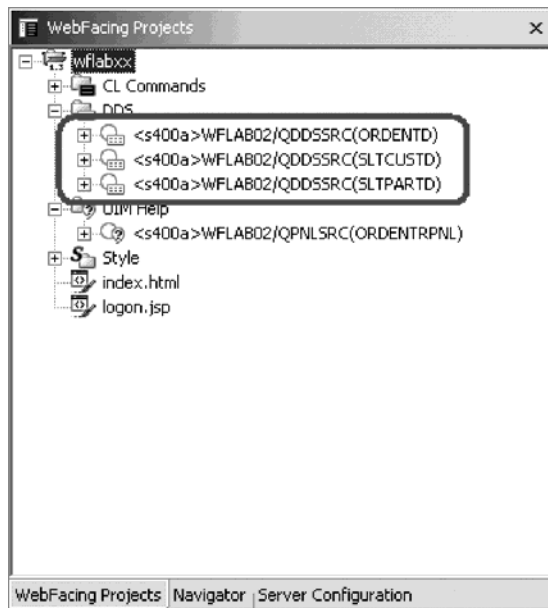
You should see a DDS folder in the expanded view.

If you don't see a DDS folder, you might be in the Navigator view and not in the WebFacing Projects view.

3. Check that the view title bar is not WebFacing projects.
4. Locate the **WebFacing Projects** tab at the bottom of the list view, and click it.



Now the WebFacing Projects view should be active and you should be able to find the DDS folder.

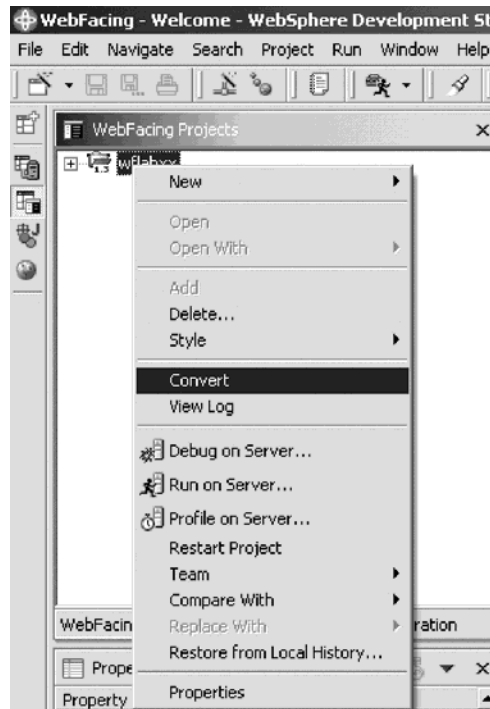


5. Expand the DDS folder, so that you can see all three of the members that you selected in previous module.
Next you convert these members.

Starting the WebFacing conversion

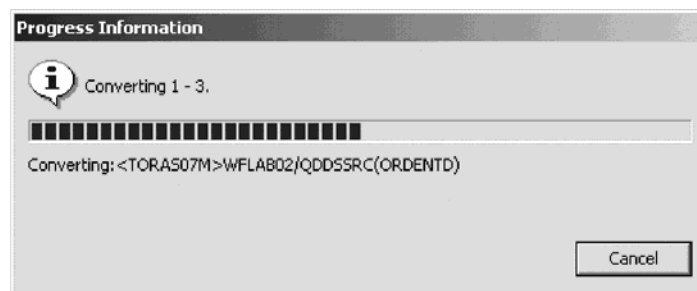
From here you can select individual members to convert or a collection of members. When you later in this tutorial change only one source member you will select a single member to be converted. Since you want to convert all members in the project, you can actually work with the WebFacing project icon to convert DDS and Panel group members.

1. Right-click wflabxx WebFacing project.



2. Click **Convert** on the pop-up menu.

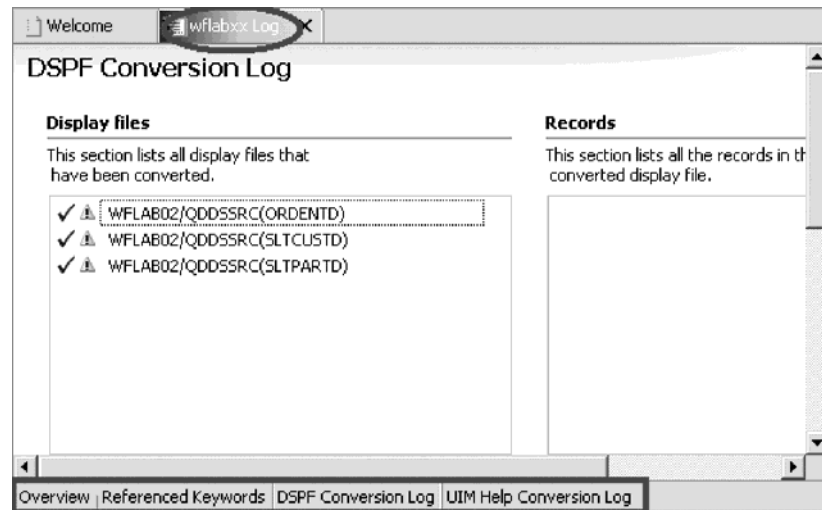
The conversion process starts. You will see a progress dialog, indicating what members are being converted:



Wait until the progress dialog disappears, indicating the WebFacing conversion has finished.

Analyzing the conversion logs

Notice the conversion log in the right pane of the workbench:



To check the conversion log:

1. Click the **Overview** tab.
2. Click the **Reference Keywords** tab.
3. Click the **DSPF Conversion Log** tab.
4. Click the **UIM Help Conversion Log** tab.

As you click each tab you will see more details about each log.

You have now converted the DDS display file and panel group source.

The DDS source and panel group source is now available in a form a browser understands. The first important step to move your application to the Web is done. Notice, the conversion itself was pretty easy, because you already did the hard part when you created the WebFacing project. Now that the project exists the WebFacing tool has all the information readily available and even having to re-convert later because of changes in the original source is not a big problem.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Select the WebFacing project to convert
- Select all DDS source members and all panel group source members that are part of the WebFacing project
- Start the WebFacing conversion process
- Analyze the conversion logs to ensure no errors have occurred during conversion

You have used the WebFacing tool to convert the user interface of the Order Entry application and you now want to see the conversion results. The WebFacing tool created a complete Web application that can be run in an Application Server. The WebSphere Application Server test environment and the Web project in the

workbench are completely integrated and without publishing (copying) any of the files in the Web project they are known to the WebSphere Application Server test environment.

The index.html file that has been created by the WebFacing conversion routine is part of this Web project. It will be used as the default page for this Web application. When the application is up and running you will go through the same scenarios as in chapter one when you went through the green screen panels of the Order Entry application but now you are using the new WebFaced user interface.

Next you will run your application with its new user interface. Continue to the next module.

Chapter 4. Running the Web-enabled application

In this module, you will learn how to test the WebFaced application. You normally would now have to copy all the files of your Web project to a WebSphere Application Server and then run your application there. However, there is a WebSphere Application Server included with WebSphere Development Studio Client and it is called the WebSphere Test Environment (WTE). Using WTE makes the process of locally testing your WebFaced application easier than testing on a remote WebSphere Application Server.

Later on for your production environment you would copy all files needed to your production application server and you will learn in Module 11 how to go through this process for the various versions of WebSphere Application Server. In your real application development environment, you would test thoroughly in the test environment; then export the WebFacing project files to a remote WebSphere Application Server for final testing, before moving the Web-enabled application to your production WebSphere Application Server environment. Module 11 shows you the steps required to deploy to a remote WebSphere Application Server environment. Until you are sure your WebFaced application is ready for public use, you can use the test environment on your workstation, which simplifies the testing of Web applications.

You will learn how to test your Web-enabled application in the WebSphere Test Environment environment. You will learn how to specify in the WebFacing perspective that you want to run your project in the Development Studio Client test environment. From the initial Web page, you will learn how to select the link created by the WebFacing Tool to invoke the WebFaced Order Entry application.

In order to run the Web-enabled application, there are several steps you will need to learn about and follow:

- Setting up the WebSphere Application Server test environment
- Running the Web application in the WebSphere Application Server test environment
- Selecting the link on the invocation Web page to invoke the RPG application
- Stepping through the Web-enabled application using the HTML-based user interface

In order to accomplish these learning objects, there are several steps that are involved, including:

- Showing the index.html page
- Running the Web application
- Testing the help support

The exercises within each module must be completed in order. Start with the first exercise when you are ready to begin.

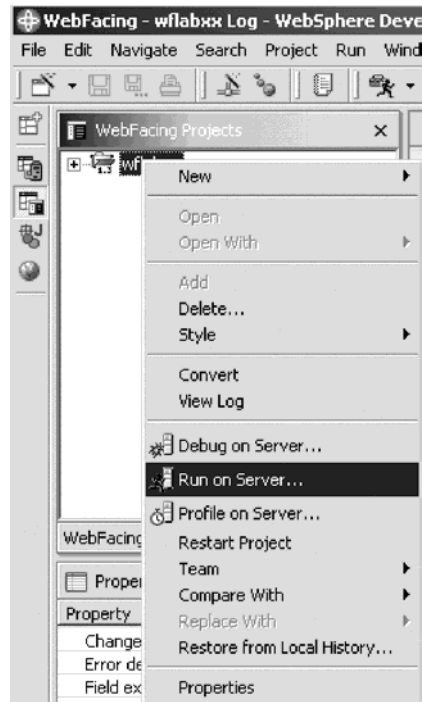
Length of time:

This module will take approximately 15 minutes to complete.

Showing the index.html page

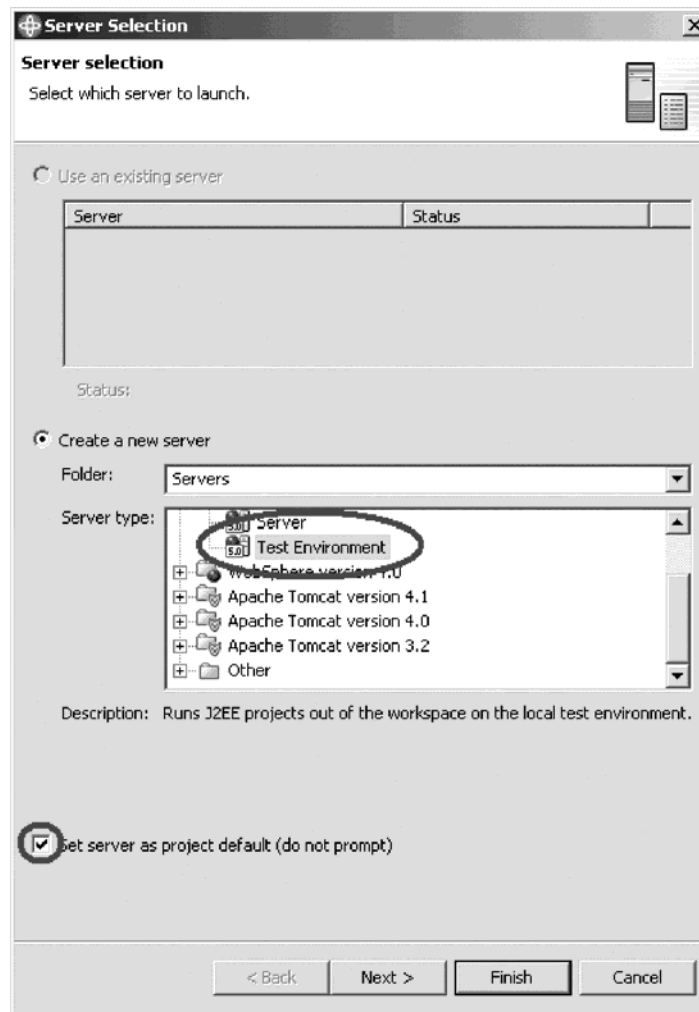
To show the index.html page:

1. Right-click the **wflabxx** WebFacing Projects folder.



2. Click **Run on server** on the pop-up menu.

A Server Selection dialog opens:



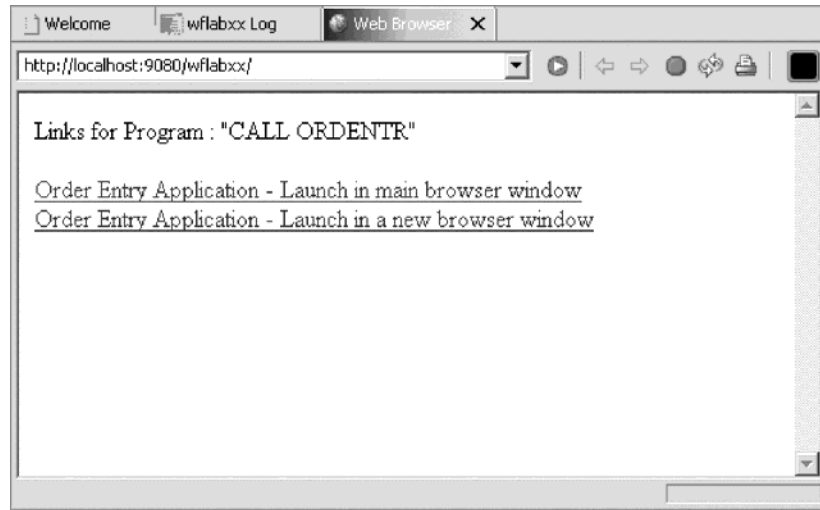
You can avoid having this dialog open every time you select run on server.

3. Leave the **Test Environment** selected.
4. Select the **Set server as project default (do not prompt)** check box.
5. Click **Finish**.

The WebSphere Application Server test environment starts. After a few moments the browser opens in the upper right view area of the workbench. Be patient; it takes time for the application server to start on your workstation.

The minimum memory requirement for running the WebSphere Application Server test environment is 768 MB according to the IBM announcement letter for Development Studio Client Version 5. You can run this WebFacing project successfully on systems with 256 MB. It will take more time for the application server to start if you are working on a workstation that has less than the required memory. The system speed will also have an impact on the application server start up time. Eventually you will see the index.html page that has been generated by the IBM WebFacing Tool opening in the workbench's built-in browser.

Here you see the browser inside the workbench with the index.html page displayed:



Tip: To enlarge the browser window to the size of the workbench window, double click on the browser title bar. To get it back to its original size in the upper right hand workbench view area, double click on the enlarged browser window title bar.

You have a choice of running WebSphere Application Server Version 4 or Version 5 in the workbench test environment. In this tutorial you will be using WebSphere Application Server Version 5 in the Test Environment and J2EE level 1.3 .

Note: Be aware if you use WebSphere Application Server Version 4 which only supports J2EE level 1.2, you need to setup your application server environment to enable UTF-8 support. This setup has to be performed for every application server that runs a WebFaced application. Instructions how to setup the WebSphere Application Server environment for UTF-8 is contained in the WebFacing help. In this Lab you don't have to worry about this step because you are using J2EE 1.3 which allows to send this information dynamically to the application server.

Running the Web application

In the browser window as shown you will see two links for the Order Entry application because the IBM WebFacing Tool creates two links automatically.

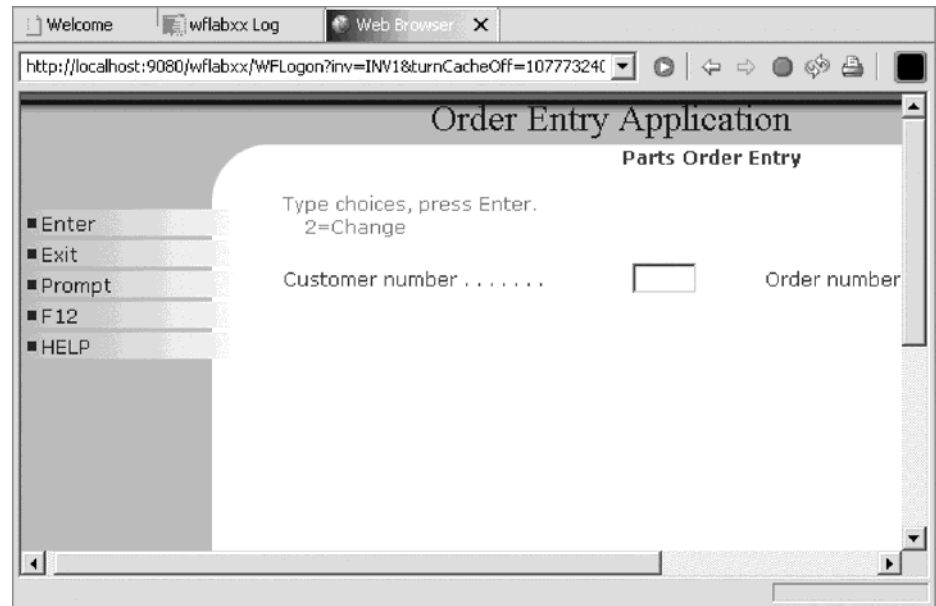
- The top link will invoke a complete browser window with all the toolbars and buttons available.
- The second link starts a new browser session for the application. This new browser session displays just the window frame, but none of the browser menus or toolbars are visible. This second link was added because many WebFacing users felt the normal browser window could overwhelm some end users and offer too many capabilities like the Back button on the toolbar.

To run the Web application:

1. In your browser pane, click the top **Order Entry Application** link.

Note: For Development Studio Client Version 4 users, you have to click twice on the link. The first click will give the browser focus; the second click will actually send the click event.

After a few moments the first application page opens in the browser:

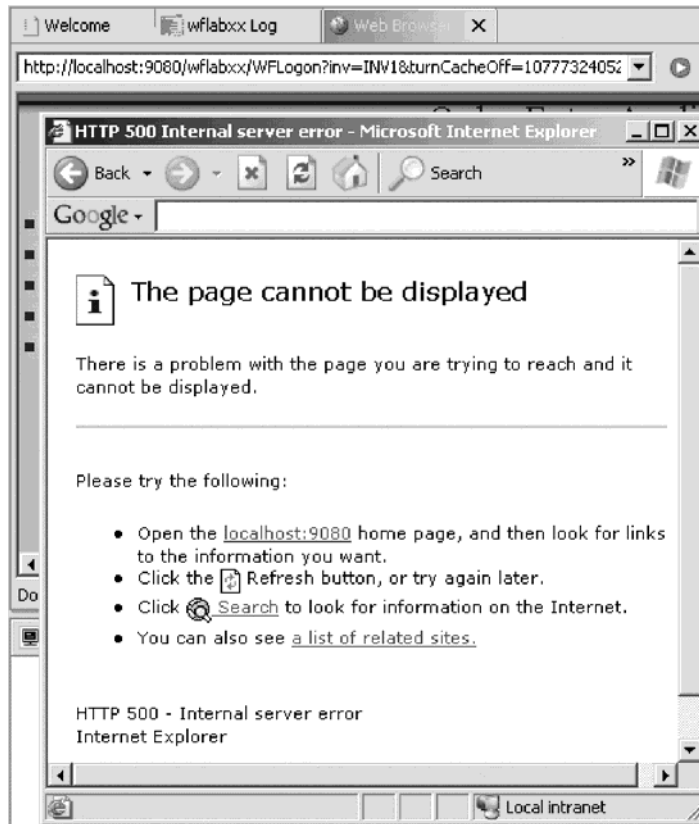


If you find the response time slow, keep in mind that the first time the JSP file is requested, it has to be compiled into a servlet the first time. If you run the application a second time, you will see improved performance since the servlet already exists. This is normal application server behavior.

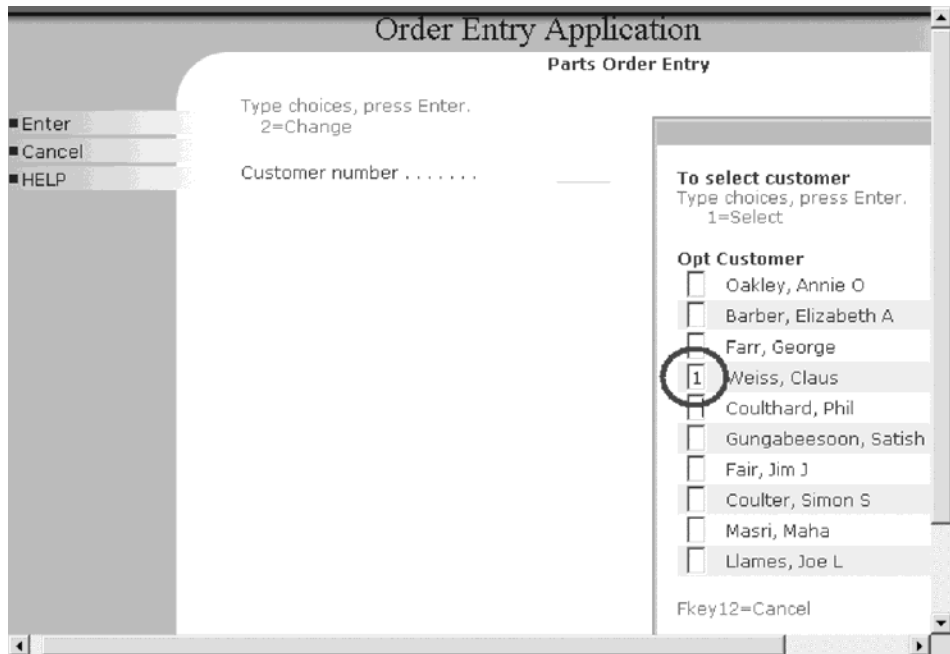
Now you want you to go through the same steps as in Module 1: Reviewing your 5250 application, to review the results of the WebFacing conversion. This will give you a sense of how the default conversion will change your original application. You will then have a chance to improve the conversion results.

The one area that you can't test in the built-in browser, is the Help support. You will have to start the application from an external browser. You will see how to do this at the end of this module. If you press the F1 key in the

internal browser you will see an error message as shown:



2. Click the **Prompt** button, or press command key **F4** to open the selection list window.



3. Select a customer from the list (this is your converted subfile).

Order Entry Application
Parts Order Entry

Type choices, press Enter.
2=Change

Customer number 0004 Order number 4011
Customer name : Weiss, Claus
Address : 8200 Warden Ave
City : Markham On L6G 1C7

Opt Part	Description	Qty
<input type="text"/>		<input type="text"/>

4. Press the **Enter** key.
5. Click the **Prompt** button, or press command key **F4** to display the parts selection list.

Order Entry Application
Parts Order Entry

Type choices, press Enter.
2=Change

Customer number
Customer name :
Address :
City :

Opt Part	Description	Qty
<input type="checkbox"/>	000001 WEBSPHERE REDBOOK	
<input type="checkbox"/>	000002 Radio_Controlled_Plane	
<input type="checkbox"/>	000003 Change_Machine	
<input type="checkbox"/>	000004 Baseball_Tickets	
<input checked="" type="checkbox"/>	000005 Twelve_Num_Two_Pencils	1
<input type="checkbox"/>	000006 Over_Under_Shotgun	
<input type="checkbox"/>	000007 Feel_Good_Vitamins	
<input type="checkbox"/>	000008 Cross_Country_Ski_Set	

6. Select a part.
 7. Press the **Enter** key.
- The Parts Order Entry window opens:

Order Entry Application
Parts Order Entry

Type choices, press Enter.
2=Change

Customer number 0004 Order number :
Customer name : Weiss, Claus
Address : 8200 Warden Ave
City : Markham On L6G 1C7

Opt Part	Description	Qty
000005	Twelve_Num_Two_Pencils	2

8. Enter a quantity.
9. Press the **Enter** key.
10. Continue ordering one or two more parts.
11. Press command key **F6** to accept the order.
The application works the same way as before in a 5250 environment it just got a browser user interface.
12. Press command key **F3** to exit the application.

Testing the help support

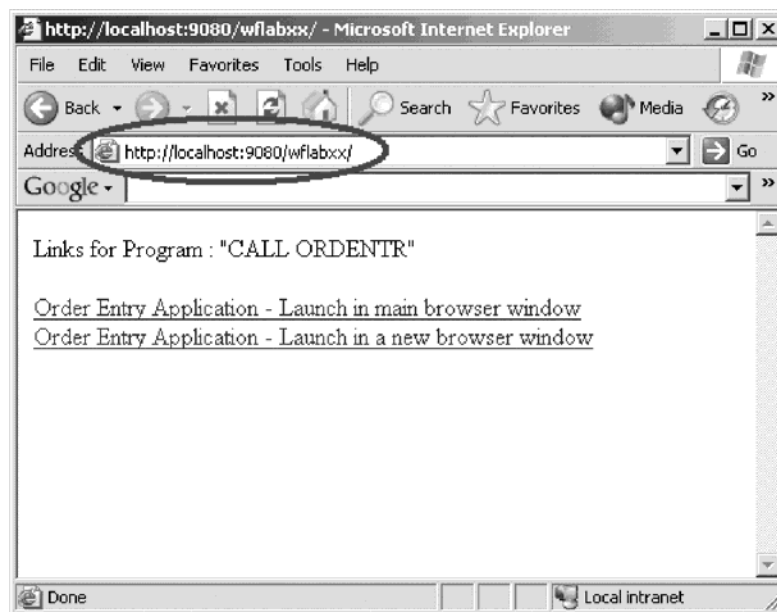
The help support will only work when you run the application in an outside browser.

To test the help:

1. Start Internet Explorer on your desktop and key in the following in the **Address** field, <http://localhost:9080/wflabxx/>.

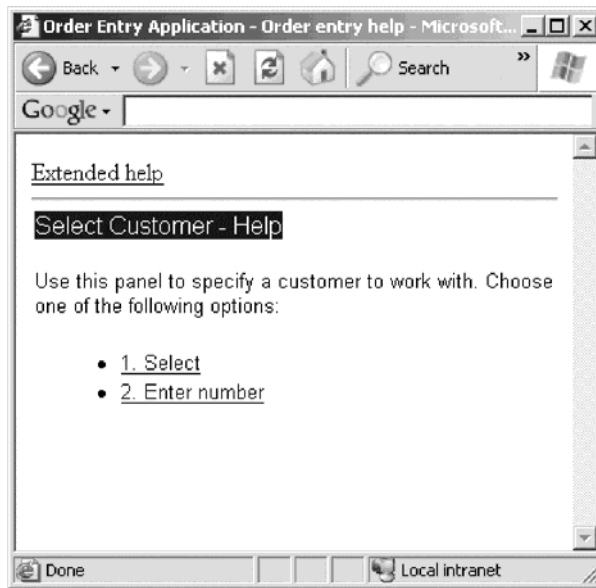
You could also copy it from the internal browser URL field and paste it in here.

Internet Explorer will show the index.html page:



2. Click the first link on this page.
The application will open in the browser.
Next you request help for the application.
3. Press the **F1** key.

Another browser window opens with the help information:



4. Now try the links:

- 1. Select
- 2. Enter number
- Extended help

Your UIM based help panels are all available in the WebFacing application.

5. Close the help browser window and press **F3** to end the application.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Setup the WTE
- Start the application in the WTE
- Select a link on the index.html page to star the Web-enabled application
- Test the Web-enabled application as you did in Module 1: Reviewing the 5250 application.
- Start the WebFacing conversion process.
- Analyze the conversion logs to ensure no errors have occurred during conversion.

Next you want to improve the user interface generated by the WebFacing tool. In particular, you want to improve the customer selection subfile. At the moment the Web user interface for selecting a record from this subfile does not have the Web behavior you would like it to have. It requires to key in a 1 into the options column to select a record, this mimics exactly how the green screen has worked in the past. You would like it to behave more like a Web user interface where you select by clicking on a link.

You will be guided through the Web Setting capabilities in CODE Designer to make the necessary modifications. You will change the second column in the customer selection subfile, which contains the customer name, from a simple text output field to a link. When the end user clicks on this new customer name link,

magic will happen and the correct information your program expects is sent. You might ask what is the correct information? What is your program expecting? It is expecting a 1 in the subfile options field for the selected customer record. It will exactly get the same information after you changed the user interface.

The WebFacing conversion will add logic to the user interface, so that the options field gets filled with a 1 and the Enter key event is invoked when the link is pressed. You enhance the user interface and don't have to change the application, this sounds pretty impressive doesn't it. Continue to the next module.

Chapter 5. Changing the user interface

In this module, you will learn how to enhance the results of the WebFacing Tool using the feature Web Settings in the CODE Designer tool. CODE Designer is the GUI-based screen design tool for 5250 panels. It allows you to change certain aspects of the user interface related to the WebFacing conversion process. CODE Designer stores the Web Setting information as comment lines in the DDS source. When you convert the application using the IBM WebFacing Tool, these DDS source comment lines are picked up and applied to the new user interface.

Note: You cannot use Screen Design Aid SDA on DDS source members that have Web Settings applied. This restriction had to be imposed because SDA will change the location of comment lines or delete comment lines, which would invalidate the WebFacing Web Settings

You will learn how to change the user interface of your Web-enabled application with CODE Designer. In the WebFacing perspective you will learn how to select a DDS source member to work with; start CODE Designer to open this DDS member; work with Web settings in CODE Designer to change the Web look, and then reconvert the DDS member.

In order to run the change the user interface, there are several steps that you will need to learn about and follow:

- Accessing DDS source from within the WebFacing perspective using CODE Design
- Changing the Web user interface with Web settings
- Reconverting the changed DDS display file source member

In order to accomplish these learning objects, there are several steps that are involved, including:

- Accessing DDS display file source
- Applying Web settings
- Testing the changed application

The exercises within each module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

This module will take approximately 15 minutes to complete.

Accessing DDS display file source

Since you will use the WebFacing perspective to invoke CODE designer you start this exercise using Development Studio Client in the WebFacing perspective.

To access DDS display file source:

1. Start WebSphere Development Studio Client and open the WebFacing perspective, if it is not up and running already.
2. In the WebFacing perspective, make sure that you are in the WebFacing Projects view and not the Navigator view.

- Expand your project in the WebFacing Projects view by clicking on the plus sign (+) beside the WebFacing project icon.

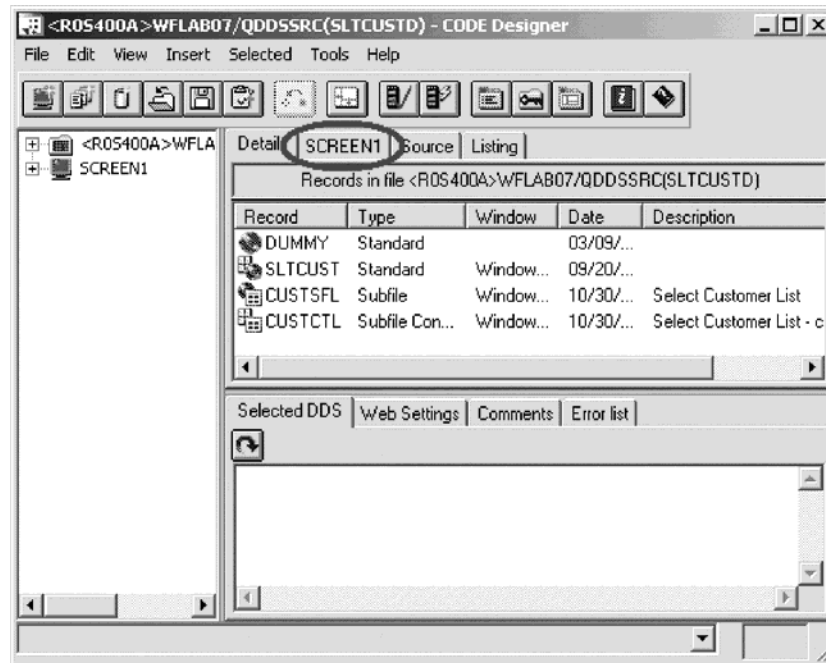
To start CODE Designer:

- Expand the DDS folder.
- Right-click SLTCUSTD source member inside the DDS folder.
- Click **Open With > CODE Designer** on the pop-up menu:



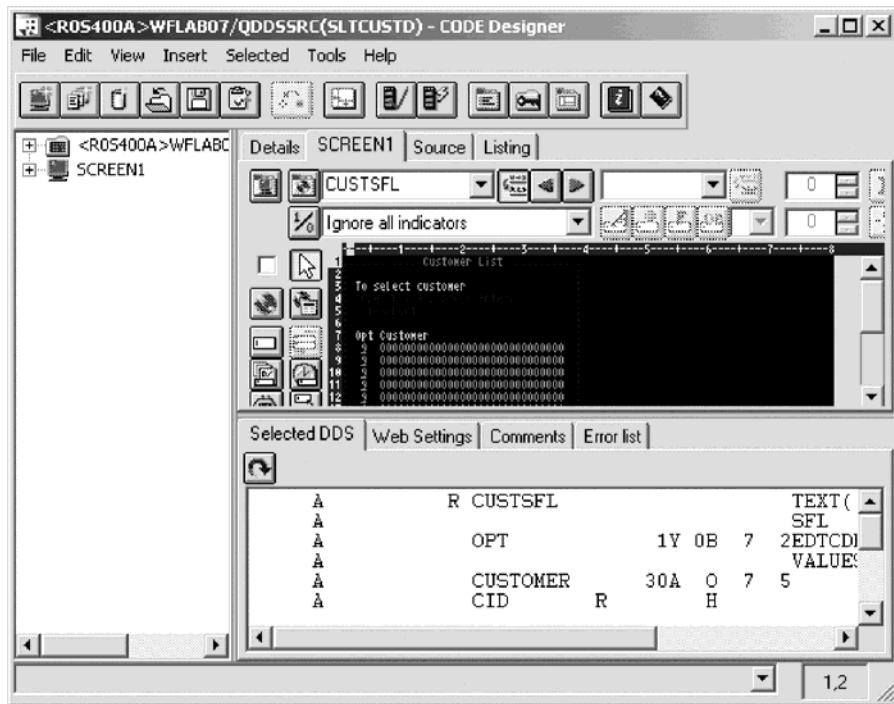
CODE Designer loads the DDS member. This takes a moment.

The DDS member loaded in CODE Designer opens:



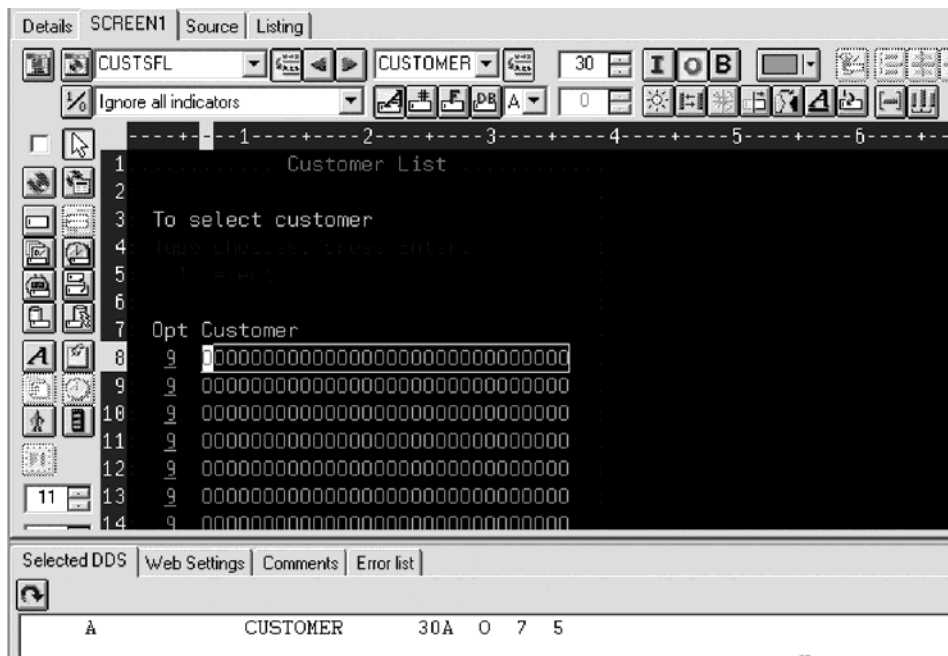
- Select the **SCREEN1** tab on the notebook.

You should now see a dialog similar to:



As you see, you are working with the green screen image in CODE Designer. Do you recognize the screen? It is the customer selection list. This is the screen you will change, so it will appear more Web-like to the end user after WebFacing Tool has been run.

- Click the second column of the first row in the subfile (the Customer field):

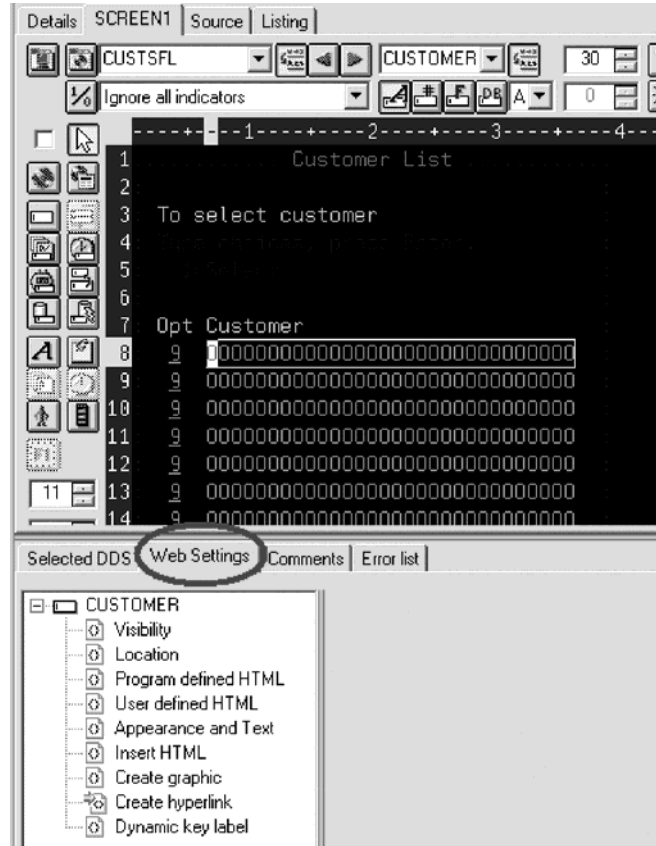


Applying Web settings

Now work with the Notebook underneath the Design page.

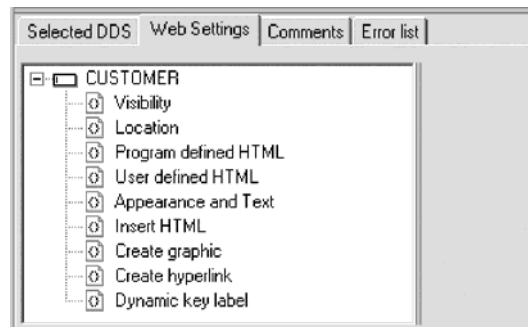
To apply Web settings:

1. Locate the **Web Settings** tab.



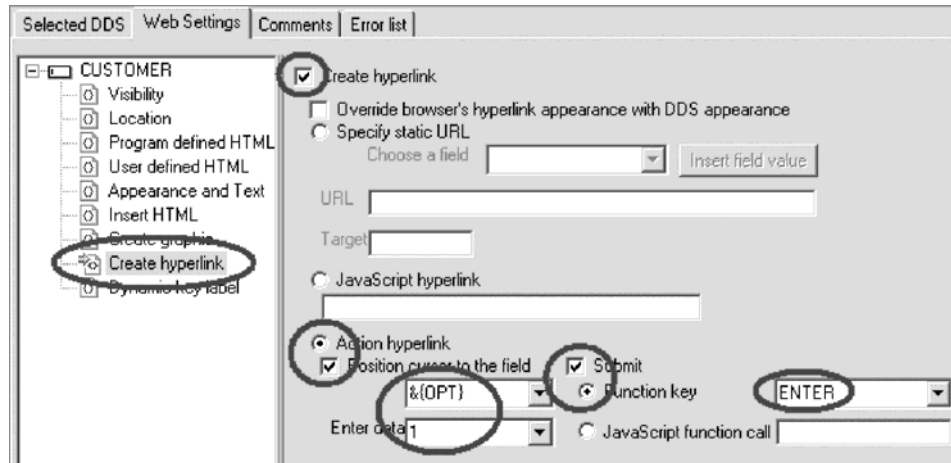
2. Click the **Web Settings** tab.

The Web Settings page in the CODE Designer window opens:



3. On the Web Settings page, locate the list that shows the different Web settings available for the **Customer** field.

- If not all Web Settings show, scroll down to the bottom of the list, and click **Create hyperlink** in the **Web Settings** list:



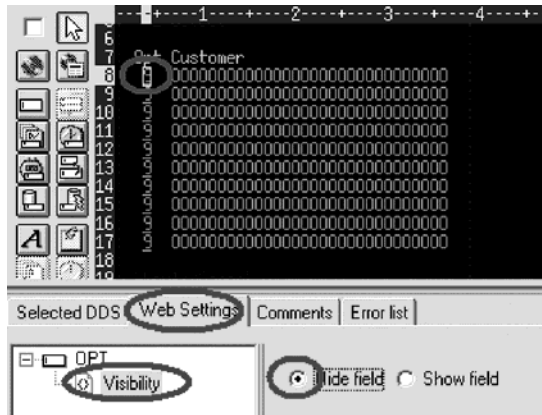
- Select the **Create hyperlink** check box to the right of the list.
 - Click the **Action hyperlink** radio button.
 - Leave the **Position cursor to field** check box selected
 - From the list under the **Position cursor to field** select the **&{OPT}** value.
 - In the **Enter data** list type 1.
- This indicates that you want a 1 to be entered in the **Options** field when the hyperlink is clicked.
- Select the **Submit** check box.
 - Leave the **Function key** radio button selected.
 - Select **Enter** from the **Function key** list.

Just to recap, you specified the following, when the application gets converted with the WebFacing Tool. The customer name cells in the subfile will be generated so they appear as links in the browser window. At run time, when the link is clicked, a 1 will be placed in the Option field. Also, a submit request will be initiated to generate the equivalent of pressing the Enter key.

You have accomplished the basic task, but the user interface now has an Option column that doesn't belong there since it is useless with the new link. Also the instructions on the page on how to select a customer are wrong. You want you to fix this with Web Settings as well before you test this new feature,

Hiding the option heading

On the Design page, you now need to select the option field to indicate that you want to work with it:



To hide the option heading:

1. Click the **Opt** column on the first record in the subfile to select it.
2. On the Web Settings page select **Visibility** from the list.
3. Select the **Hide field** radio button.

Now this column in the subfile will be hidden.

Hiding the option heading for the option field

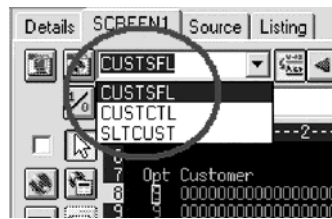
You need to hide the heading for the option field as well. The heading is not in the subfile record it is located in the subfile control record. Therefore you need to give focus to a different record format in the design screen. What does this mean? It looks like one record format but there are two record formats in this view.

Lets look at some of the CODE Designer features. Normally in the iSeries green screen world, your screens are made up out of multiple record formats that at runtime get assembled by the RPG or COBOL program to present the real screen your end user sees.

To make it easier for you at design time to get a feel how the record formats you create would look like at runtime, CODE designer has added the notion of a group. You can assemble several record formats in a group this feature gives you the capability of mimicking what happens at runtime with your record formats. So a group resembles the runtime grouping of record formats for you at development time. In the sample you are working with, there are already assembled three record formats in group SCREEN1. The record formats:

- CUSTSFL
- CUSTCTL
- SLTCUST

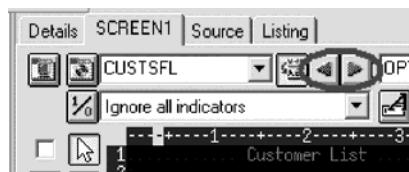
To get a list of record formats belonging to a group you can expand the list of record formats:



Only one record format in a group is active at a time. The record format name is listed in the top field of the combo box. Also in the design window all parts in the active record format are shown in regular density but the inactive record format content is dimmed. You see this effect very clearly above. Until now you have been working with the subfile record format CUSTSFL only, but now you need to clean up the subfile control record format CUSTCTL, so you need to make it the active record format or another way to describe this, give it focus.

To shift focus to another record format:

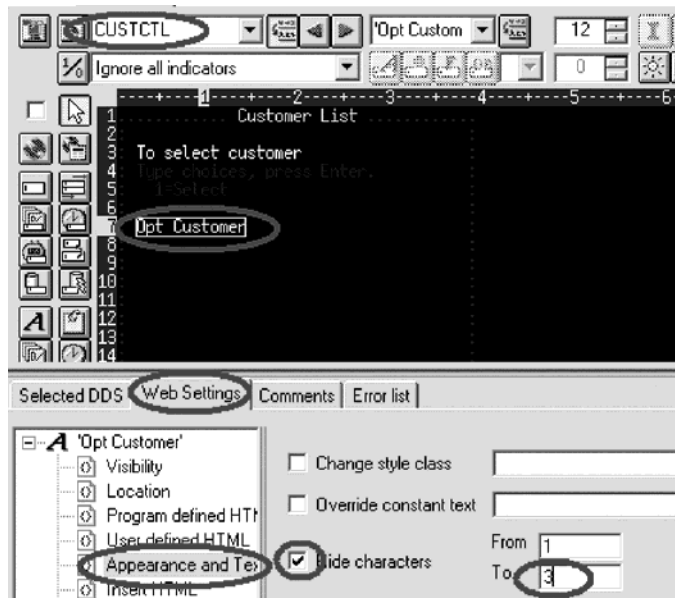
1. At the top of the Design page, click the arrow:



You will notice that the top area of the Design page is now highlighted, and the bottom one has only half intensity. As mentioned before the highlighted area is the one you can work with.

Next you clean up the subfile control record format.

To clean up the subfile control record format:



2. On the Design page, select the **OPT Customer** constant.
3. On the Web Settings page, select **Appearance and Text** from the list.

4. Select the **Hide characters** check box.
5. Leave 1 in the **From** field.
6. Type 3 in the **To** field.

This hides the heading Opt. Now you need to get rid of the instructions on the panel that guide the user to put a 1 into the **Option** field to select a specific customer.

Hiding the select instruction

You don't have to give focus to a different record format since this constant is also located on the ORDCTL record format.

To hide the select instruction:

1. Select the constant **1=Select** in the Design page:



2. On the Web Settings page select **Visibility** from the list.
3. Click the **Hide field** radio button.

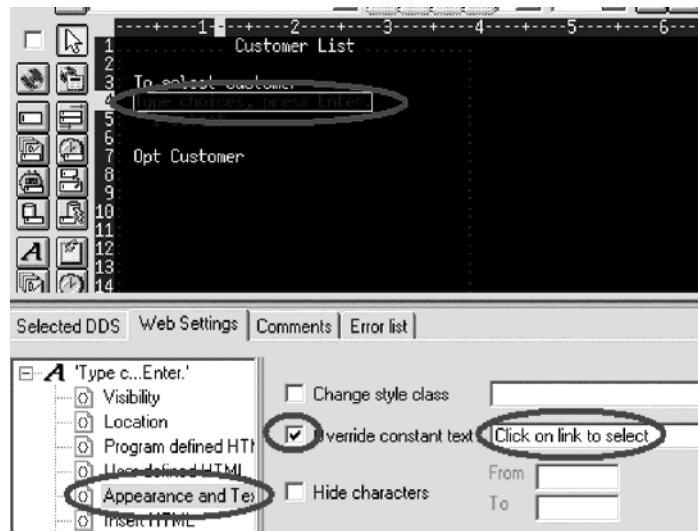
Changing the instruction (Type choice press Enter)

Now you need to add new instructions for the WebFaced page, so the end user knows to click the link to select a customer.

Note: Note you can't just change the 5250 constant because you might still use this screen in a 5250 environment, you have to use Web Settings to apply this change to the Web user interface only.

To change the instruction text:

1. Select the instruction constant (**Type choices press Enter**) on the Design page:



2. On the Web Settings page, select **Appearance and Text** from the list.
3. Select the **Override constant text** check box, and type the new text **Click on link to select** in the field to the right of the check box.
4. Now all Web Settings are in place and you can go ahead and save the DDS source and reconvert this DDS member.

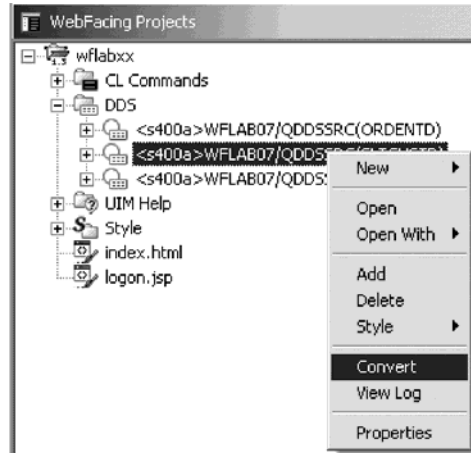
To close CODE Designer and re-convert the DDS member:

1. Click the **X** button at the top right corner of the CODE Designer dialog.



2. Click **Yes** to save, when asked to do so.
You return to WebFacing perspective in the Development Studio Client workbench.
3. Select your project **wflabxx** in the WebFacing Projects view.
4. Expand the project by clicking on the plus sign (+) in front of its icon, if you can't see the DDS folder as part of the project.

- Expand the DDS folder, if it is not expanded already, to show all members in this folder.



- Select the member SLTCUSTD that you just changed.
 - Right-click SLTCUSTD member icon.
 - Click **Convert** on the pop-up menu.
- Only this member will be converted. A conversion report opens after the conversion is finished. Now you test the new user interface.

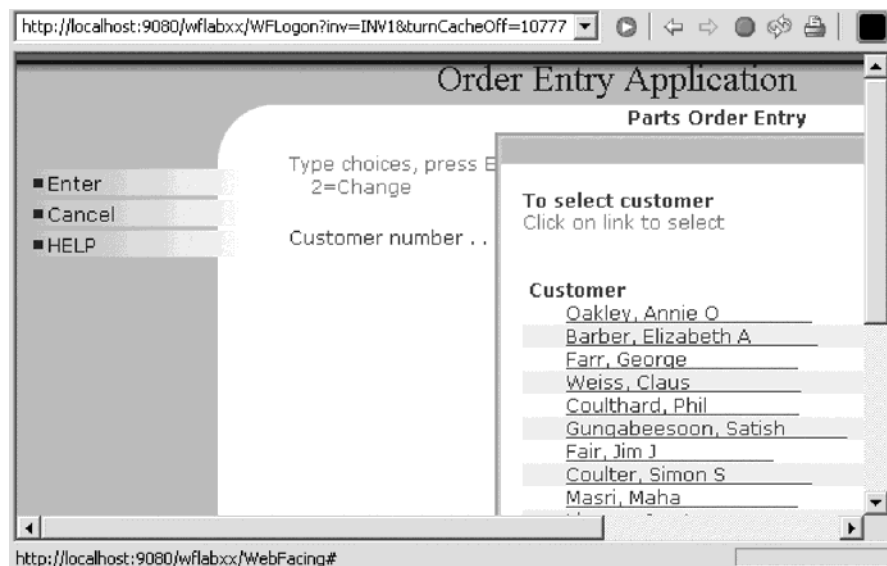
You return to WebFacing perspective in the Development Studio Client workbench.

Testing the changed application

Let's see the new user interface in your application.

To test the changed application:

- Right-click the wflabxx project icon in the WebFacing Projects view.
 - Click **Run on Server** on the pop-up menu.
 - Go to the browser pane and click the **Order Entry Application** link.
- You will see the first screen of your application. Nothing has changed there.
- Click the **Prompt** push button, or press command key F4.



The customer selection window appears and the customer fields are shown as links. Also notice the changed text and the non-visible option column.

5. Select a customer from the list by clicking on the link.
6. Go through the same steps as in Module 1: Reviewing our 5250 application, and try it out.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Access a DDS source member using CODE Design.
- Change the Web user interface using Web Settings in CODE Designer
- Convert the changed DDS.

Note: There green screen user interface has not changed if the application is invoked as a green screen application. It will look like the original user interface. The Web Settings apply only to the WebFaced user interface.

You didn't like the way the WebFacing tool mapped some of the display attributes to colors and text styles available in the browser. You wanted to change the default WebFacing style rules that govern how certain 5250 parts are displayed in a browser to give the Web user interface a better look. You learned how to change the style rules for highlighted fields. However, there are more customization steps to further enhance the pages of your Web application. Continue to the next module.

Chapter 6. Changing the style of the Web user interface

In this module, you will learn how to change the user Interface of your Web-enabled application by using the WebFacing style properties dialog. The style changes are applied on a project level; so all pages in a project will be displayed with these changes applied. In this exercise we want you to change the text color and font for all highlighted fields. Also you will learn how to locate the .css file where these changes have been stored.

You will learn how to change a style to tailor the Web interface to your needs. You will start the Style Properties dialog, create a new style, change style settings, specify the new style to be used for this project, and refresh the project with the new style.

In order to change the style of the Web user interface, there are several steps you will need to learn about and follow:

- Creating a new style using the WebFacing Style Properties dialog
- Using the field-level properties pages to change the look of your Web pages
- Changing the project to use a different style

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Changing the rules for highlighted fields
- Changing styles directly
- Testing the changed application

The exercises within each module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

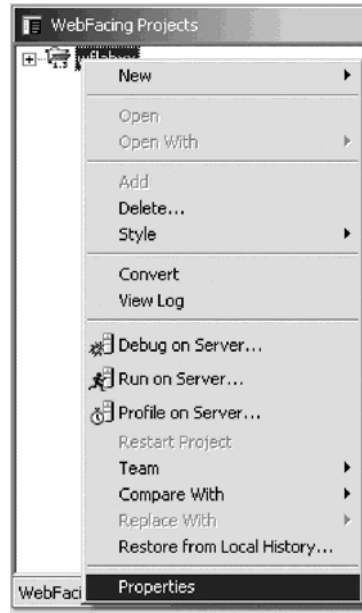
This module will take approximately 20 minutes to complete.

Changing the rules for highlighted fields

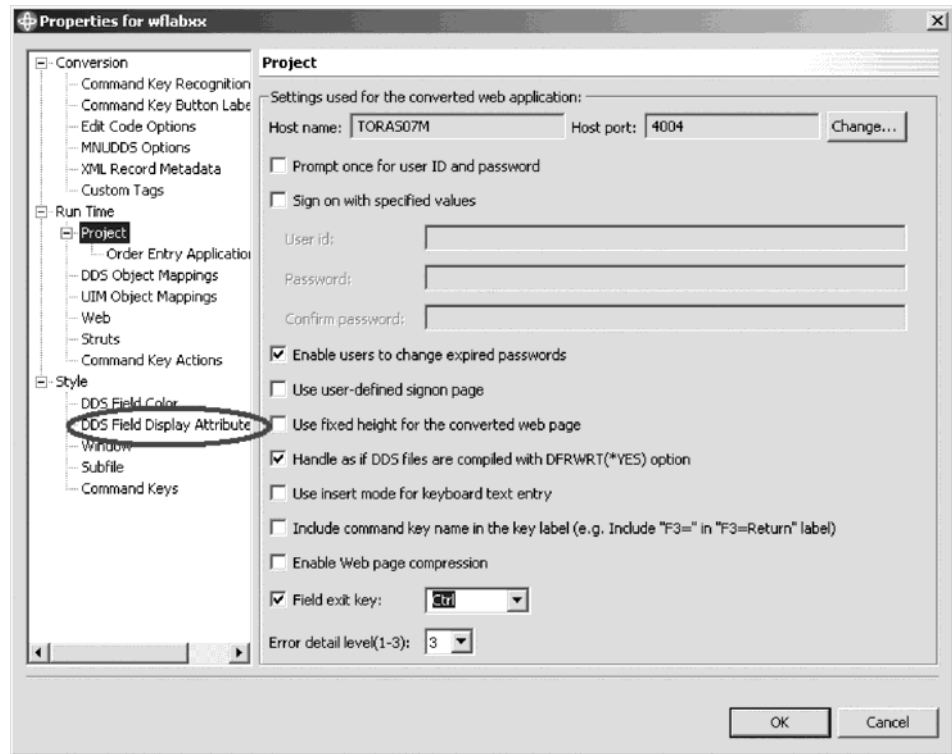
During this exercise you will use the Style Properties dialog in the IBM WebFacing Tool to tailor your Web user interface. You will change the rules for highlighted fields in the 5250 panels so they appear more visible in the Web user interface. The style for highlighted fields will be altered so at runtime the text font will be different and a larger font size will be applied.

To change the rules for highlighted fields:

1. Start the workbench of WebSphere Development Studio Client and open the WebFacing perspective, if it is not up and running already.

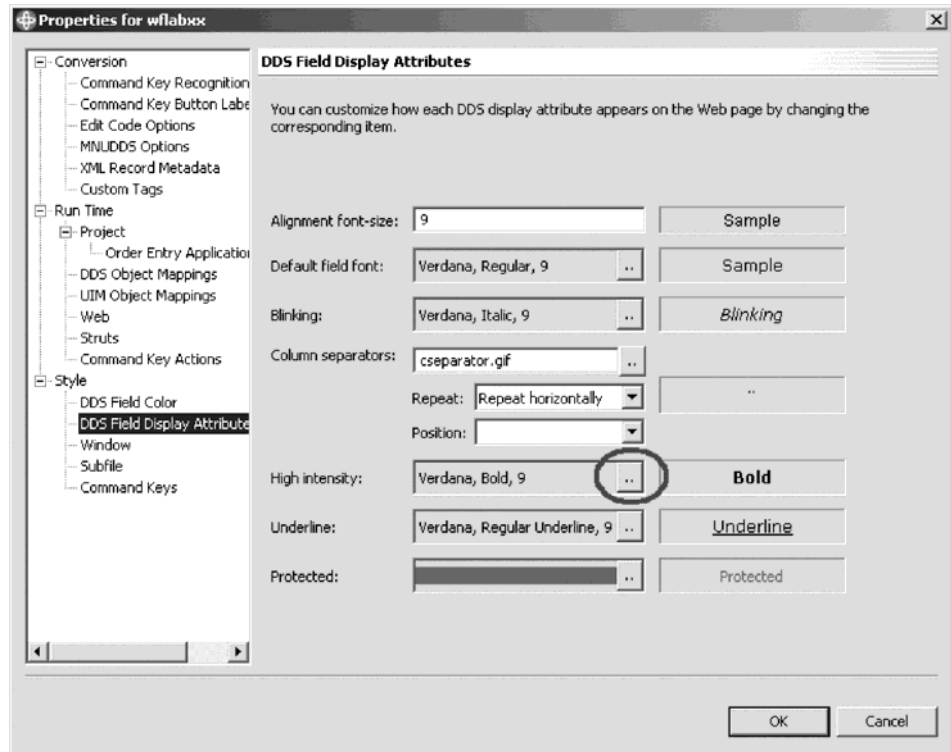


2. Right-click the wflabxx project.
 3. Click **Properties** on the pop-up menu.
- The WebFacing project properties dialog opens:

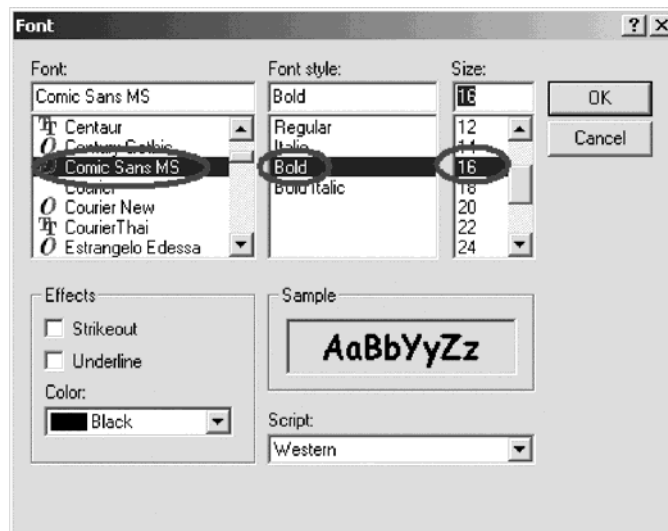


4. Under **Style** in the left pane of the Properties for wflabxx, click **DDS Field Display Attributes**.

In the right pane of the Properties for wflabxx, the DDS Field Display Attributes pane opens:



5. Click the .. push button to the right of the **High intensity** list. The Font dialog opens:



6. Under the **Font** list, select **Comic sans MS**.
7. Under the **Font style** list, select **Bold**.
8. Under **Size**, select **16**.

Note: Don't try to change the color in this dialog, the color setting doesn't work, later in this module you will see how to change the color.

This changes the font size and appearance for parts that have the high intensity attribute active.

9. Click **OK** on the Font dialog.
10. On the Properties page, click **OK**.

Testing the Web application

Let's check the new style in your application.

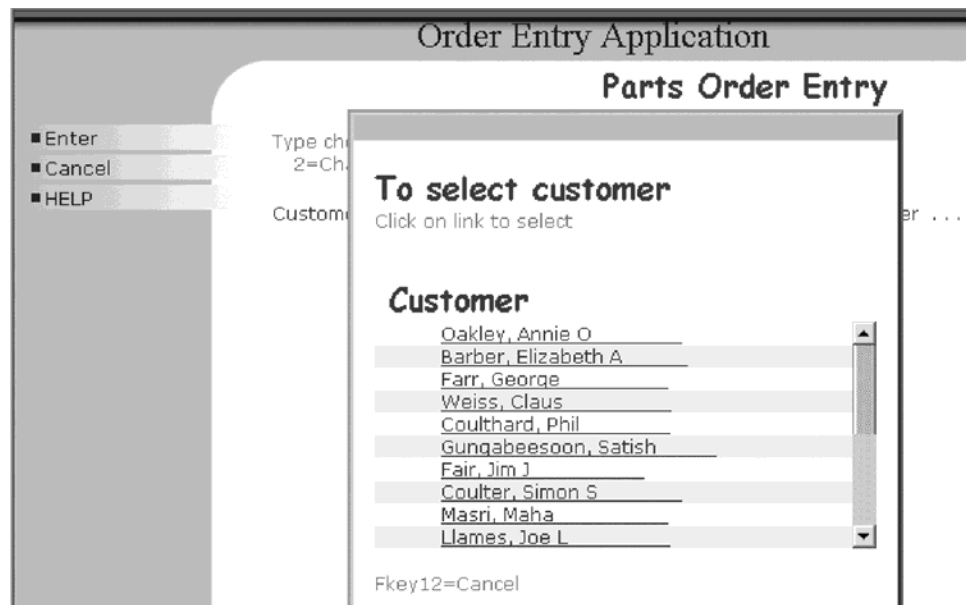
To test the application:

1. Right-click the project icon in the WebFacing Projects list.
2. Click **Run on Server** on the pop-up menu.
3. Go to the browser pane and click on the Order Entry link.
You will see the first screen of your application.

Note: See the different font and font size of some of the text; these are the highlighted areas of your 5250 screen.

4. Prompt for the customer.

The customer selection screen has highlighted text and this text should show in font Comic sans serif and size 16:



Note: If the text is still showing the old fonts, most likely the browser has cached the page and you need to close the browser window, and restart the application, that will bring up a new instance of the browser without cached content.

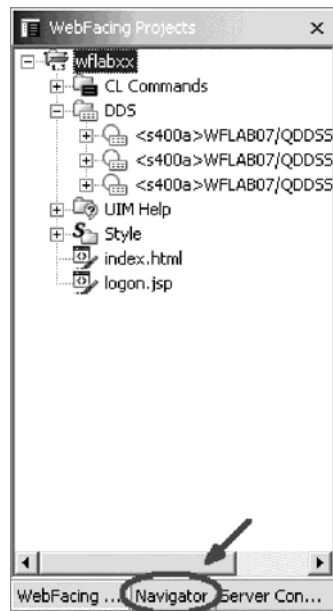
5. The Font dialog has a bug that makes it impossible to change the style directly. Next you see how to directly change WebFacing style classes.

Changing styles directly

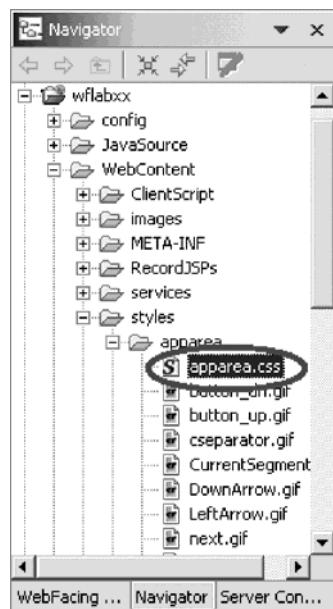
Instead of working with properties in the WebFacing project you can also change the styles being applied direct in the Cascading Style Sheet (.css) file that WebFacing uses. In this exercise you see where this file is located at in the WebFacing Project structure and how to find your way around in this file.

To locate the Cascading Style Sheet file:

1. Click the **Navigator** tab to switch to the Navigator view:



2. Locate the `apparea.css` file in the WebFacing project:



It is located in the following directory hierarchy: `wflabxx\WebContent\styles\apparea\`

Note: For Version 4 users: The directory structure is slightly different:
`wflabxx\webApplication\styles\apparea\`

3. Double-click the `apparea.css` file icon in the Navigator view, to open an editor for this file.

Next you change the WebFacing highlighted style class.

The editor dialog will come up and show the style source.

4. Scroll down the source file until you reach the `.wf-hi` class:

```
background-color:#cccccc;
}
.wf_bl {
font-style : italic;
}
.wf_cs {
background-image : url(cseparator.gif);
background-repeat : repeat-x;
background-position : 0% 120%;
}
.wf_hi
{
font-style:normal;
border-left-color:black;
font-family:Comic Sans MS;
border-top-color:black;
font-weight:bold;
font-size:16pt;
}
SPAN.wf_ul {
text-decoration : underline;
}
.wf_pr {
border-width: 0 0 2 0;
color: #666666;
}
.wf_nd_pr{
visibility: hidden
}
```

You'll notice your changes from the previous exercise being applied here. The WebFacing tool has created style sheet classes for the different 5250 parts and attribute combinations and stored them here. Each of the lines starting with a dot is containing a style class name. The statements inside the curly brackets after the style class name describe the attributes of the class itself.

For this WebFacing .css file, the name of the classes are self describing, for example `.wf_hi` defines how a part that has the highlighted attribute active gets displayed in the browser, `wf_cs` describes the column separator, etc. You can go in and change the display characteristics for any of the 5250 attributes.

Next you change the color attribute of the highlighted class.

5. Position the cursor at the end of the last line of the `wf_hi` class, before the ending curly (`}`) bracket:
6. Press the **Enter** key to insert a line.

7. Insert the color attribute you want to use, for example: `color: red;`

```
background-repeat : repeat-x;
background-position : 0% 120%;
}
.wf_hi
{
font-style:normal;
border-left-color:black;
font-family:Comic Sans MS;
border-top-color:black;
font-weight:bold;
font-size:16pt;
color: red;
}
SPAN.wf_ul {
text-decoration : underline;
}
.wf_pr {
border-width: 0 0 2 0;
color: #666666;
}
.wf_nd_pr{
visibility: hidden
```

Note: Don't forget the semicolon to delimit the line.

8. Save the change by clicking the save icon in the workbench.



For version 5 users, there is a nice feature available in the Style sheet editor that allows you to look at the changes you have made to a class directly in the editor without actually invoking the page and showing in a browser.

9. Look at the left beside the ccs editor:

Selected Style

Style of .wf_hi

Standard HTML Elements

Text in Body Text in Body
Text in Body Text in Body

Heading 1 Heading 1

Heading 2 Heading 2

Heading 3 Heading 3

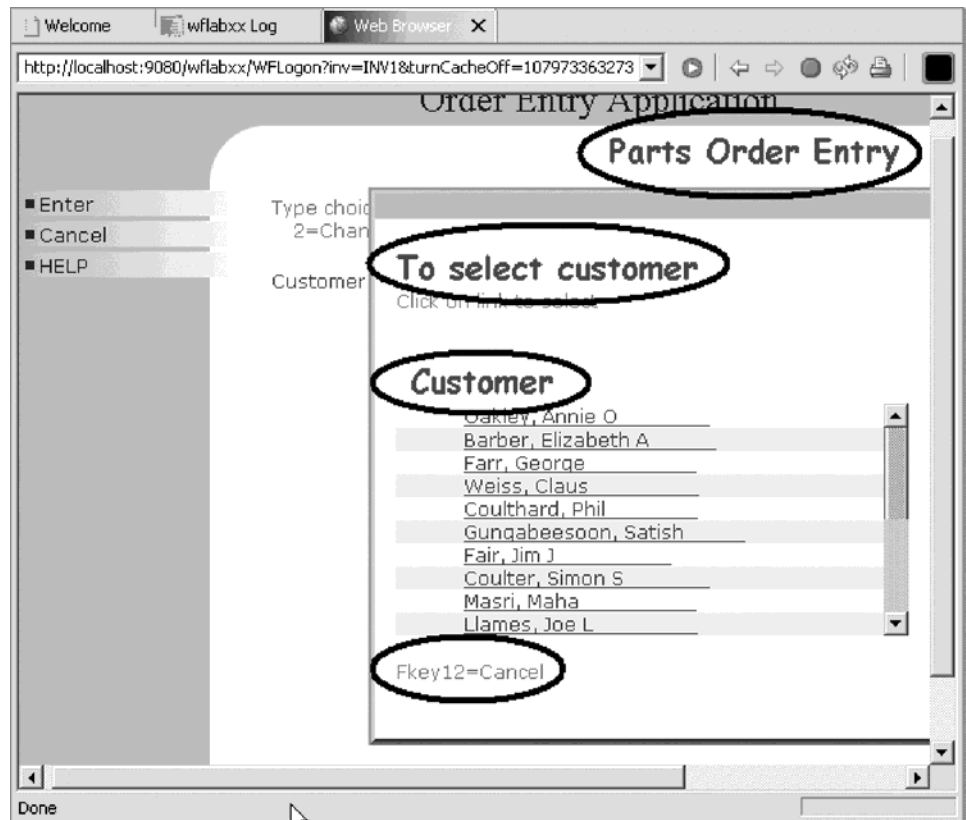
To see the changed user interface, run the application again.

Testing the changed application

To test the changed application:

1. Click on the X in the Window bar of any editors or views still open at the right upper hand side of the workbench to close them all.
Now let's check the new style attribute in your application.
2. Right-click the project icon in the WebFacing Projects view or Navigator in the WebFacing perspective.
3. Select **Run on Server** on the pop-up menu.
4. Go to the browser pane and click on the Order Entry link.

You will see the first screen of your application. Notice the different color of the text in the highlighted areas of your Web page. Prompt for the customer. The customer selection screen will show the same changed attributes, remember style changes are getting applied to all pages as shown.



Note: If the text is still showing the old colors, most likely the browser has cached the page and you need to close the browser window, and restart the application, that will bring up a new instance of the browser without cached content.

You might not have noticed it before, but there is still a command key description at the bottom of the customer selection window.

You might have guessed it; you will fix this in the next module.

Recap

Congratulations! You have completed this module. You should now understand how to :

- Change the style for WebFaced highlighted fields using the WebFacing properties dialog
- Apply a new font style and a bigger font size

- Test these changes and made sure they are applied to all screens. You found that the changes were applied without a re-conversion of the DDS source. Style changes were directly applied at runtime and didn't require re-conversion
- Edit the Cascading Style Sheet file directly with the style sheet editor, to change the color attribute of the WebFacing highlighted style class
- Saved your changes and test the application to make sure these changes would appear on the application screens

In the sample Order Entry application, the Customer Selection list window doesn't follow the CUA[®] rules for command keys descriptions. The WebFacing tool will by default not recognize these command key descriptions and will not delete them. The Order Entry main screen has a command key enabled that has no description associated with it. The WebFacing tool by default can't handle this situation and puts a default string in the push button label representing this command key. Next you learn how to enable the WebFacing tool to deal with these common green screen environments. Continue to the next module.

Chapter 7. Adding command key rules and labels

Most of command key descriptions placed at the bottom of the original panels in the sample Order Entry Application have been removed from the WebFaced user interface. The removal happens automatically if the command key descriptions follow the Common User interface Access (CUA) rules (for example, F3=Exit). If they don't follow these rules you can supply the WebFacing Tool with the command key description rules you use in your user interface, and the WebFacing Tool will apply these rules to recognize your specific command key descriptions. One of the record formats in the sample application contains a command key description that doesn't follow the CUA rules.

In this module, you will use the WebFacing conversion properties dialogs to add your own command key description rule. Also in your user interface you might have enabled command keys without describing them in the user interface because they are only used for specific functions and your end user knows how they work. For example command key three for ending an application or command key 12 for canceling a task are well known to be enabled for these tasks. So your user interface might not list them explicit at the bottom of the panel. The problem with this kind of user interface design, the WebFacing tool doesn't have a string it can put in the label of the push buttons on the Web page. It will just put for example CA12 for an active command key 12 in the push button label. However there is a way out, the WebFacing tool allows you to specify labels for these common command keys so it can label the command key push buttons correctly. You just have to tell the WebFacing tool in its conversion properties what the label is.

In order to add command key rules and labels, there are several steps you will need to learn about and follow:

- Adding your own command key recognition rules to the WebFacing conversion properties
- Adding command key labels, for command keys that have missing labels in the DDS source
- Working with command key recognition patterns
- Working with command key labels to fix the deficiencies in the WebFaced user interface
- Reconverting the user interface with the new WebFacing conversion properties being applied

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Working with command key description patterns
- Adding command key button labels
- Running the Web application

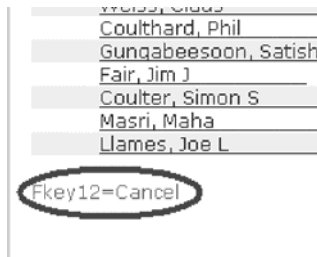
The exercises in this module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

This module will take approximately 15 minutes to complete.

Working with command key description patterns

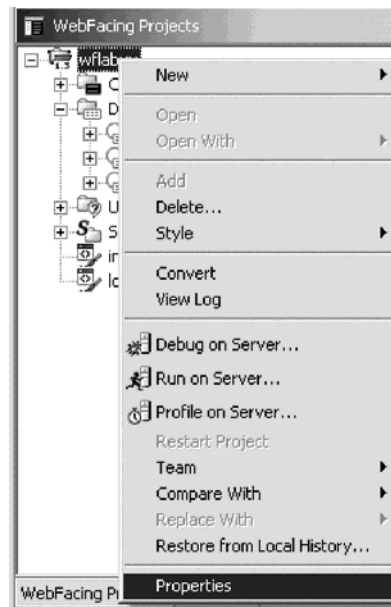
The prefix for the command key description in the SLTCUST record format is Fkey=.



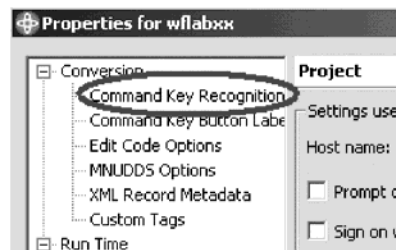
This doesn't follow the CUA rules normally used in iSeries user interfaces, so the WebFacing conversion does not recognize this pattern and does not hide it. You have to add this prefix pattern to the WebFacing Tool conversion rules in the WebFacing Properties dialog.

To work with command key description patterns:

1. Right-click your WebFacing project wflabxx.
2. Click **Properties** on the pop-up menu:

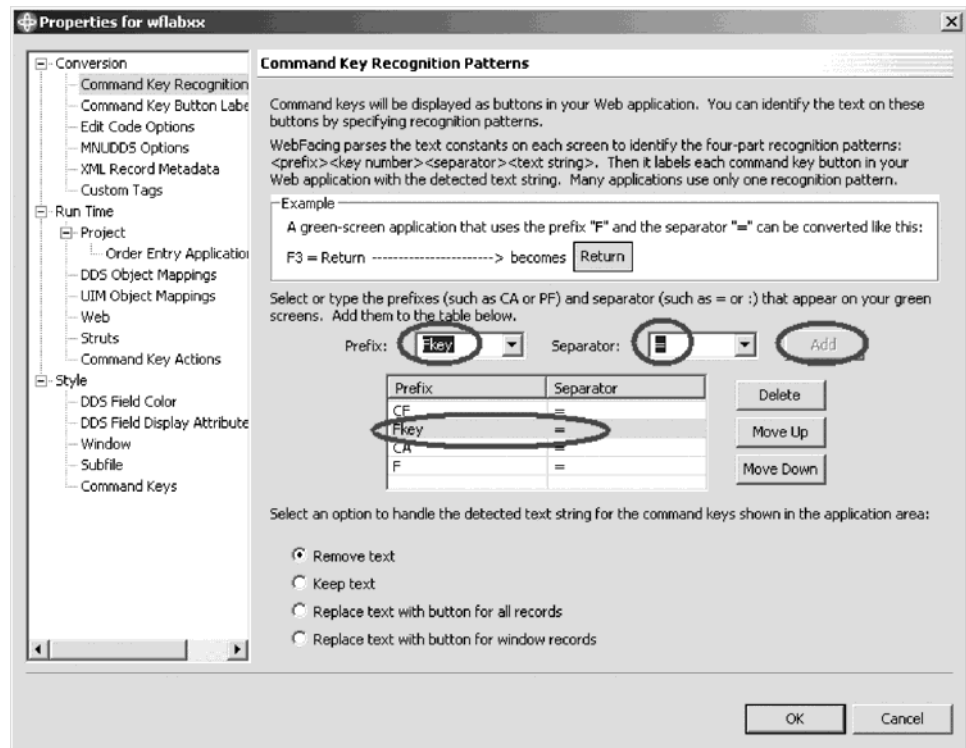


The Properties for wflabxx dialog opens:



3. In the left pane of the Properties for wflabxx, select **Command Key Recognition Patterns**.

The right hand pane will switch to Command Key Recognition Patterns.



4. In the **Prefix** list, type Fkey.
5. In the **Separator** list, leave = .
6. Click **Add** to the right of these two lists.
The additional rule is now part of this style.
7. Click **OK**.
8. Next, you will test this feature by converting the DDS member and running the application.

Reconverting DDS members

Since these are conversion properties you are changing and not style properties as in the previous module, you will need to reconvert all members that contain command key descriptions with this pattern. In the sample Order Entry application this is only member SLTCUSTD.

To reconvert DDS members:

1. In the workbench in the WebFacing Project view, expand the wflabxx project, if not already expanded.
2. Expand the DDS folder, if not already expanded.
3. Right-click the SLTCUSTD member icon.
4. Click **Convert** on the pop-up menu.

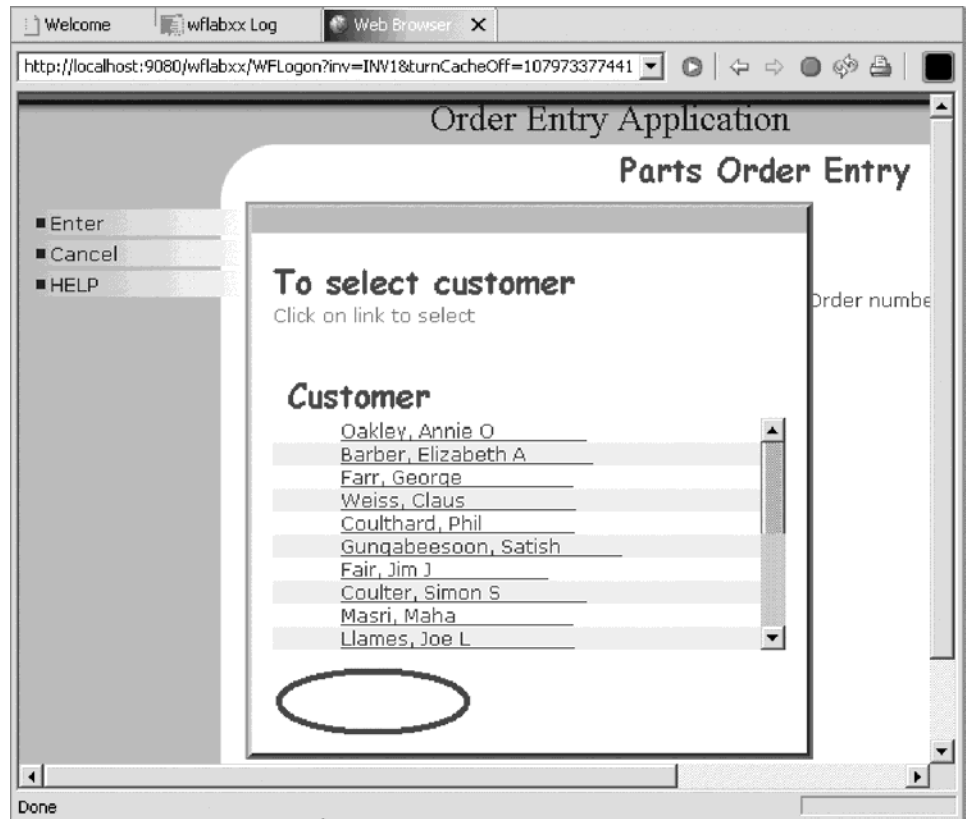
After the conversion, take a look at the change.

Testing the applied new rule

Let's see how the new rule is applied to your Web-enabled application.

To test the applied new rule:

1. Right-click the project wflabxx in the WebFacing Projects view.
2. Click **Run on Server** on the pop-up menu.
If you see a message that you have exited the browser session, click OK.
3. Go to the browser pane and click the Order Entry link.
You will see the first screen of the sample application.
4. Click **Prompt** or press **F4**.
The customer selection list window opens:

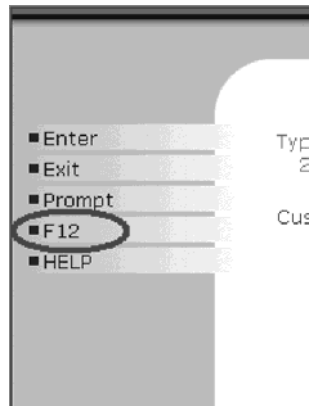


Note: Notice that the command key text Fkey12=Cancel is gone from the bottom of the window.

5. Select a customer or cancel by pressing **F12** to return to the Order Entry Application window.

Now that you know how to change the command key recognition patterns in WebFacing Tool, you can add text to frequently used command keys that don't

have a text description in the DDS source.



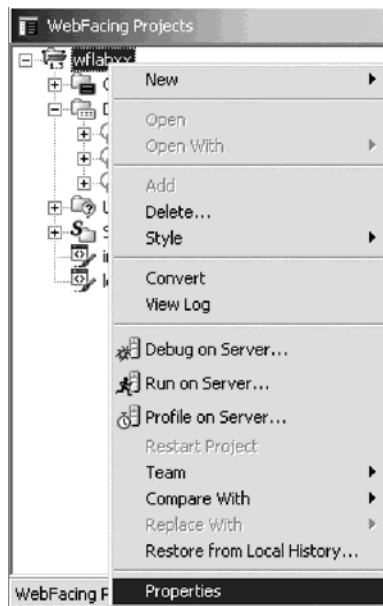
Back on the Order Entry panel, you can see that the push button for F12 does not have a description. Its label shows F12. You will learn how to fix the label in the next exercise.

Adding command key button labels

The WebFacing tool allows you to specify command key descriptions for command keys that are commonly used in your application but not described in your DDS source and on your screens. This way the push button labels on the Web pages can automatically be changed during conversion to the correct text. You will add the description Cancel to the WebFacing conversion properties so the push button will get created to show a Cancel label instead of CA12.

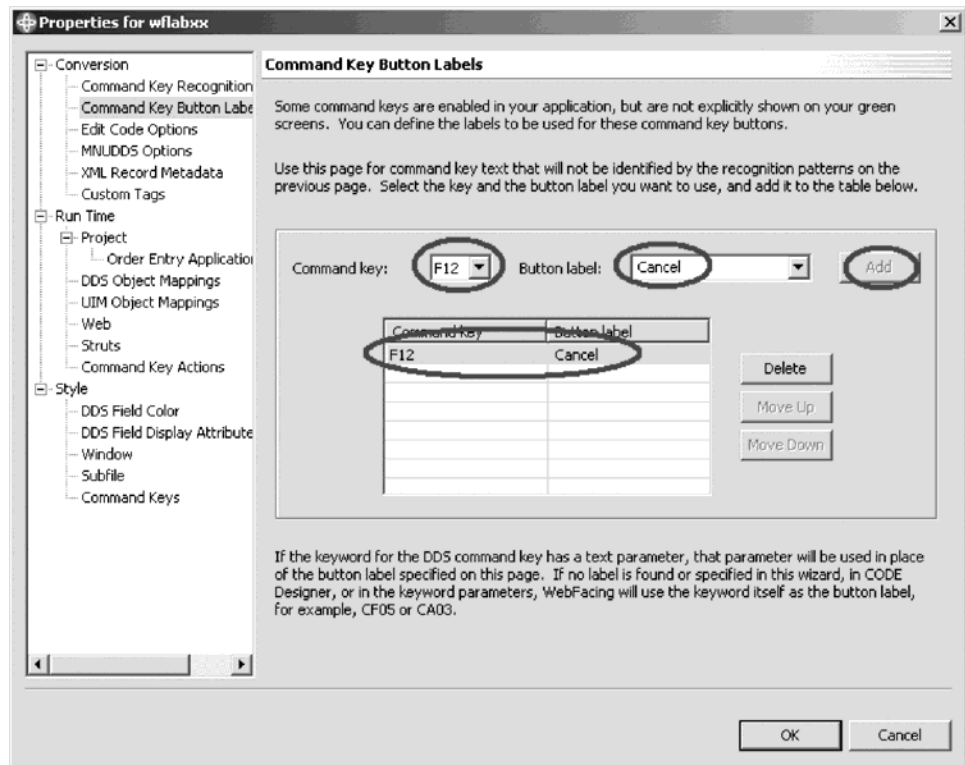
To add command key button labels:

1. Right-click your WebFacing project wflabxx.



2. Click **Properties** on the pop-up menu.
The Properties for wflabxx dialog opens.
3. In the left pane of this dialog, select **Conversion > Command Key Button Labels**.

In the right pane of this dialog, the Command Key Button labels opens.



4. Under the **Command key** list, select **F12**.
5. Under the **Button label** list, select **Cancel**.
6. Click **Add** to the right of these two lists.

The additional label is now part of the WebFacing conversion properties for this WebFacing project.

7. Click **OK** at the bottom of the properties dialog.

Next, back in the Development Studio Client workbench, test this feature.

Reconverting DDS members

To convert the application in the workbench:

1. Expand the wflabxx project if not already.
2. Expand the DDS folder if not already.
3. Right-click the ORDENTD member icon.
4. Click **Convert** on the pop-up menu.

After the conversion, take a look at the change.

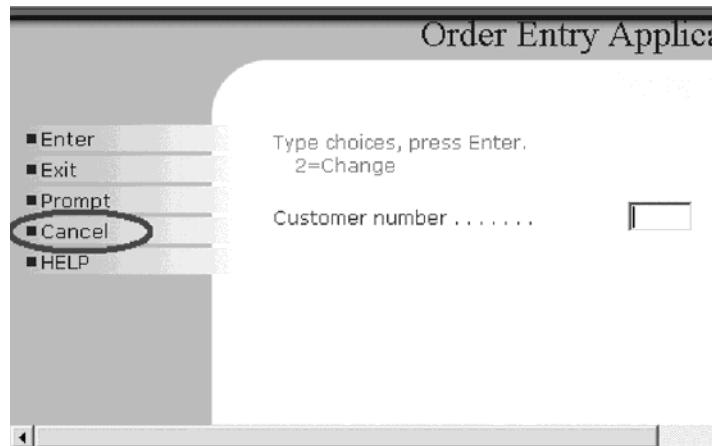
Testing the new label

Let's see the new label for the F12 push button in your Web-enabled application.

To test the new label:

1. Right-click wflabxx project in the WebFacing Projects view.

2. Click **Run on Server** on the pop-up menu.



If you see a message that you have exited the browser session, click OK.

3. Go to the browser pane and click the Order Entry link.
4. Check that the **Cancel** push button on the first page now shows the correct label as shown.
5. If the push button still has the old text, restart the Application server.
6. Click on the **Servers** tab at the bottom view in the workbench.
7. Right-click the server icon.
8. Select the **Restart** option.
9. Run the application again.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Start the WebFacing Project Properties dialog
- Use the command key recognition properties page to change the Fkey12 command key recognition pattern for the command key label on the customer selection window
- Use the command key button labels properties page to change the undefined F12 command key label
- Reconvert the application and then run the application and check the changes

Now that you have a Web user interface so the green screen look doesn't show through as much as after the straight WebFacing conversion, you want to add some more refinements to the appearance of your Web pages. Continue to the next module.

Chapter 8. Working with more style properties

In this module, you will learn how to change the user interface further, using style properties. You will learn to work with WebFacing Tool style properties and check the changes by refreshing the style and running the application.

Since a style is used on a project level, all Web pages in your project will contain the changes you apply to a particular style.

In order to change the user interface further, there are several steps you will need to learn about and follow:

- Working with the additional pages of the Style Properties dialog
- Working with the window properties page
- Working with the scrollbar/subfile properties page
- Working with the command key look properties page.

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Starting the WebFacing properties style dialog
- Changing the appearance of the subfile
- Customizing the appearance of command keys
- Checking the new style

The exercises in this module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

This module will take approximately 20 minutes to complete.

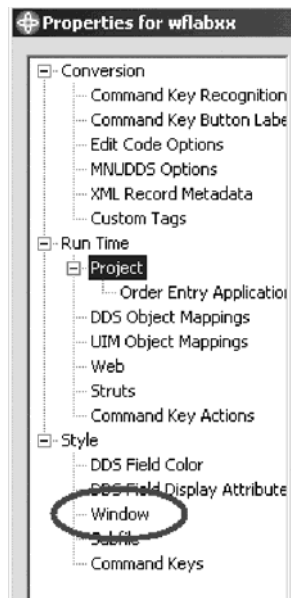
Starting the WebFacing properties style dialog

First, you will use the WebFacing Style properties dialog to tailor your Web user interface. You will apply changes to the window layout of your screens, the subfile appearance will be changed, and you will enhance the command key pushbutton looks.

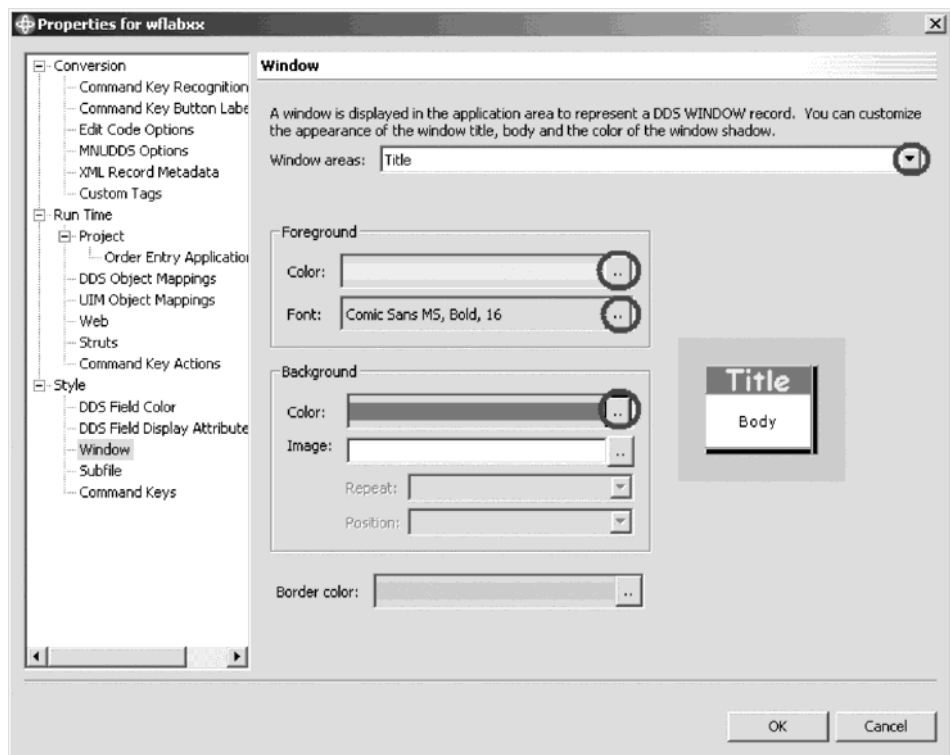
To start the WebFacing properties dialog:

1. Start the WebSphere Studio workbench and open the WebFacing perspective, if it is not up and running already.
2. In the WebFacing project view, select the **wflabxx** project.
3. Right-click the **wflabxx** project, and select **Properties** on the pop-up menu.


The Properties dialog opens.

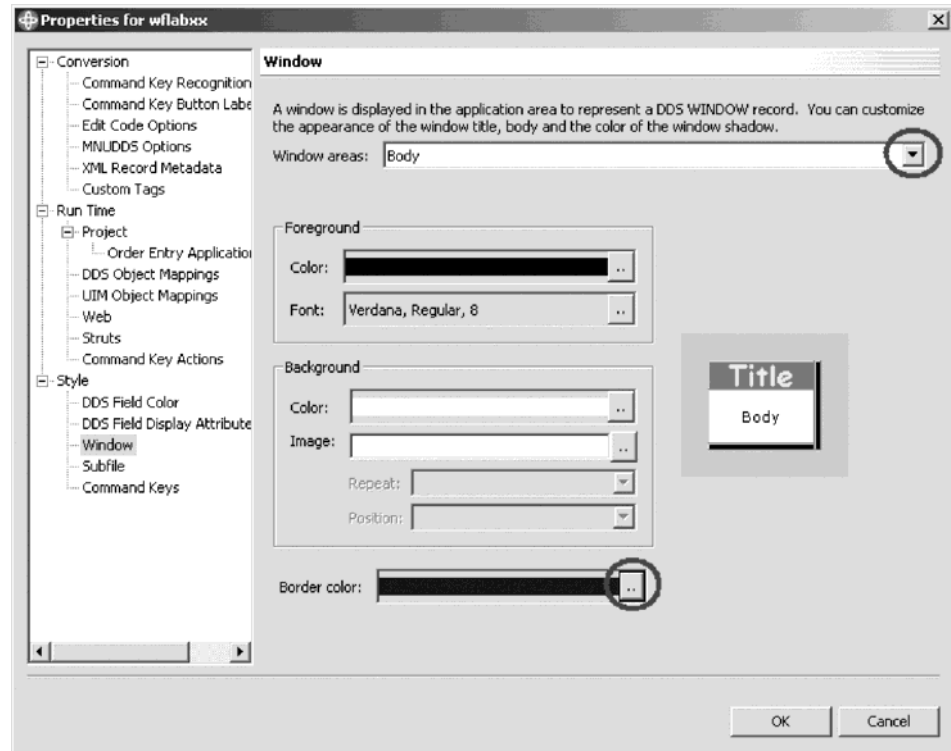



4. Under **Style** in the left pane of the Properties dialog, select **Window**.
The right pane of the Properties dialog shows the Window properties:



5. Select **Title** from the **Windows areas** list.
6. Under **Foreground** click the **..** push button to the right of the **Color** list.
7. On the Color Chooser dialog, click **Red**.
8. Then click **OK** in the Color Chooser dialog.
The Window Properties page reappears.
9. Click the **..** push button to the right of the **Font** list.

10. Select Font **Comic sans MS**, size **16**.
 11. Click **OK** on the Font dialog.
 12. Under **Background**, click the  push button to the right of the **Color** list.
 13. On the Color Chooser dialog, click **Green**.
 14. Click **OK** on the Color Chooser dialog.
- The Windows properties dialog reappears:
15. Select **Body** in the **Windows areas** list at the top of the page:



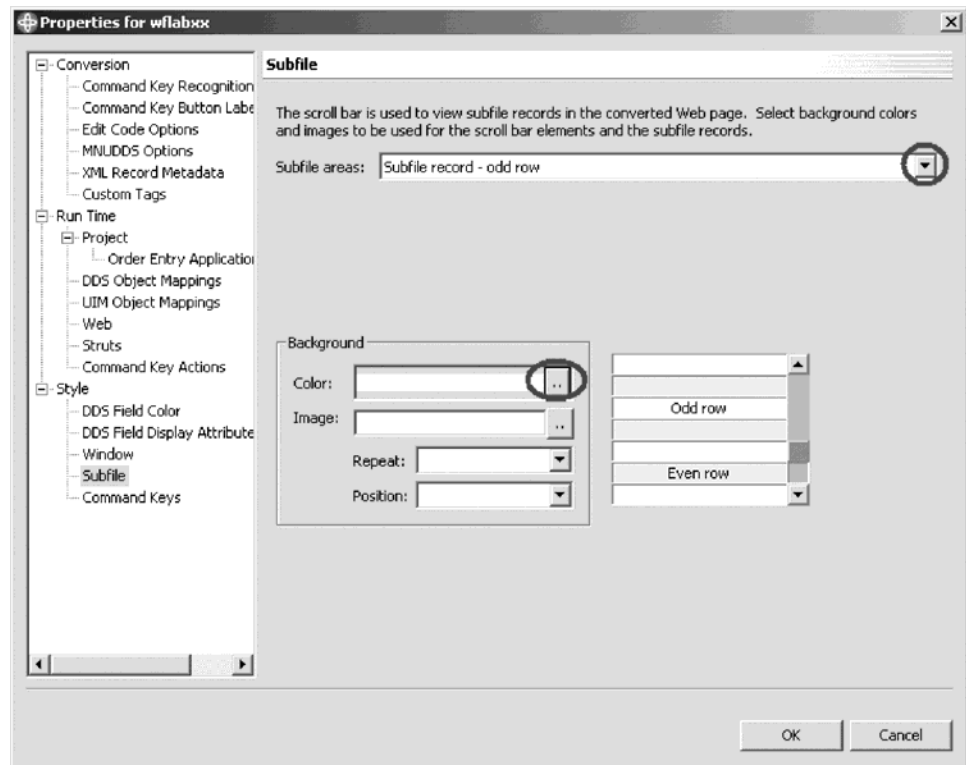
16. In the **Border color** list at the bottom of the page click the  push button to the right of the **Border color** list.
The Color Chooser dialog opens.
17. Select **Blue**.
18. Click **OK** in the Color Chooser dialog.


Changing the appearance of the subfile

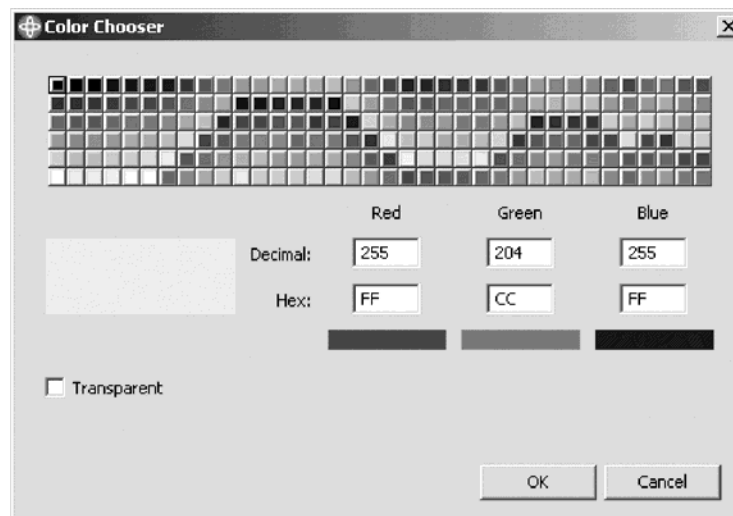
To change the appearance of the subfile:

1. Back in the Properties dialog, under **Style**, select **Subfile**.

The Subfile properties page opens on the right pane of the dialog:



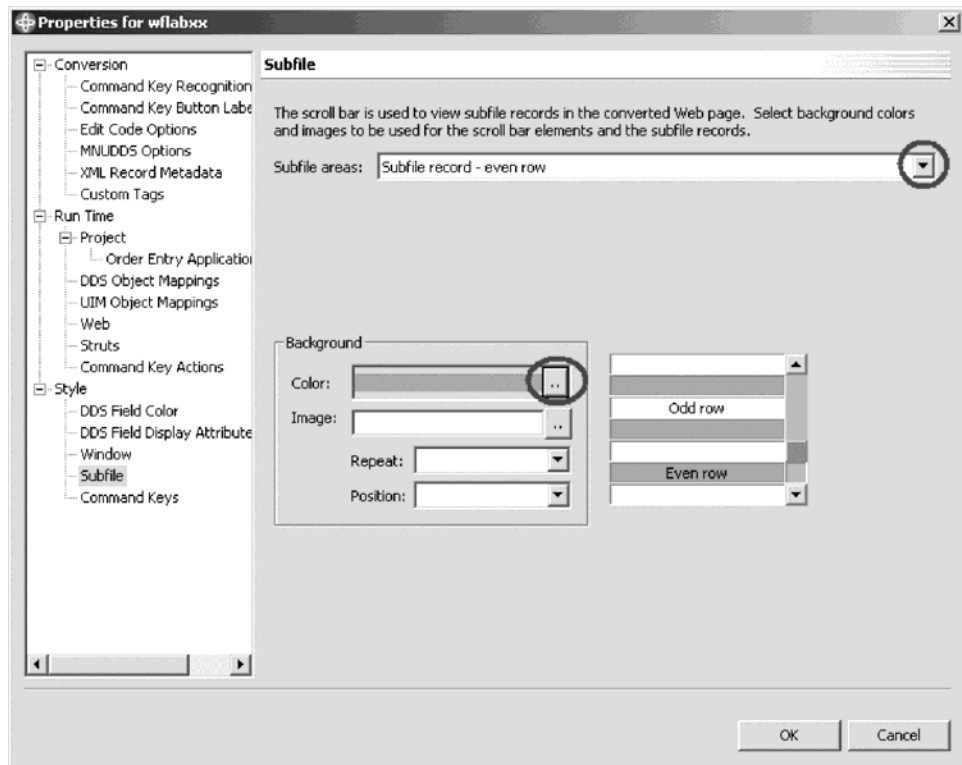
2. Select **Subfile record - odd row** in the **Subfile areas** list.
3. Under **Background**, click the  push button to the right of the **Color** list. The **Color Chooser** dialog opens.
4. Select **purple**.



Tip: If you are interested in the hex value of certain colors as they are used in the style classes, the color chooser displays the hex values; see the value: "993399".

5. Click **OK** in the **Color Chooser** dialog. You return to the **Properties** dialog.

6. Select **Subfile record - even row** in the **Subfile areas** list at the top of the page.



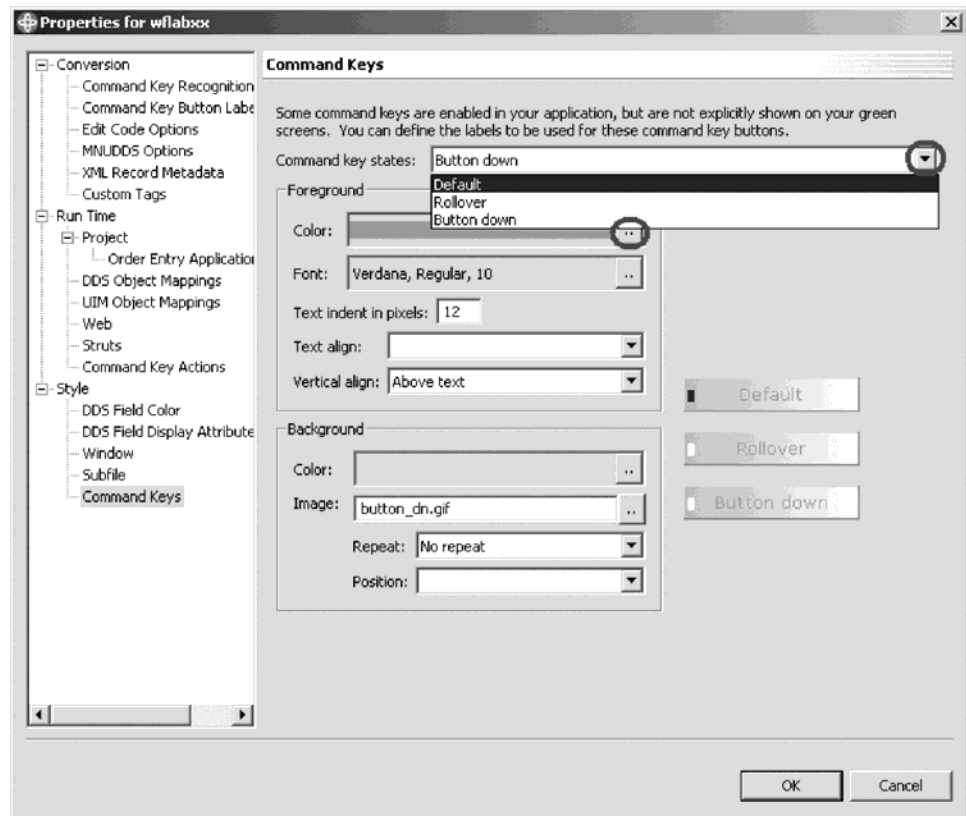
7. Under **Background**, click the **..** push button to the right of the **Color** list. The **Color Chooser** dialog opens.
8. Select a light green.
9. Click **OK** on the **Color Chooser** dialog.
Now at run time the odd and even records will be displayed with different background colors. Next you will customize the appearance of the command key push buttons.

Customizing appearance of command keys

To customize appearance of command keys:

1. In the left pane of the **Properties** dialog under **Style**, select **Command keys**.

The Command Keys properties opens on the right pane of the dialog:



2. Change the Foreground color for all three states of the buttons:
 - Default
 - Rollover
 - Button down

Now you have finished customization.

3. Click **OK** on the Properties dialog.

Checking the new style

Let's see the new look of your application.

To check the new style:

1. Right-click wflabxx project.
2. Click **Run on Server** on the pop-up menu.

If you see a message that you have exited the browser session, click OK.
3. Run the application.
4. Click **Prompt**.

The application window shows different colors, and the subfile records are colored. The command key push buttons change color, depending on their state.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Started the Style Properties dialog
- Worked with three different style properties
- Check the changes by running the application

You have tested your WebFaced application and for convenience have used your user ID and password as the default to avoid having to sign on every time you started the application. Now you need to move the application into production and you need the WebFaced application to prompt the users for sign on information when it gets started. Continue to the next module.

Chapter 9. Adding authentication

In this module, you will learn how to secure your application by forcing authentication before the application is invoked. You will learn how to change the run-time behavior of your application. Instead of using the default user ID and password, the one you used when you selected the members to convert your DDS source, you will now force the user to provide their own signon information. You will learn how to remove the user ID and password from the CL command properties.

In order to add authentication, there are several steps you will need to learn about and follow:

- Securing your application by forcing authentication before the application gets invoked
- Explaining the authentication support in the IBM WebFacing Tool
- Removing the default user ID and password

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Removing the default user ID and password
- Testing the authentication dialog

The exercises in this module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

This module will take approximately 15 minutes to complete.

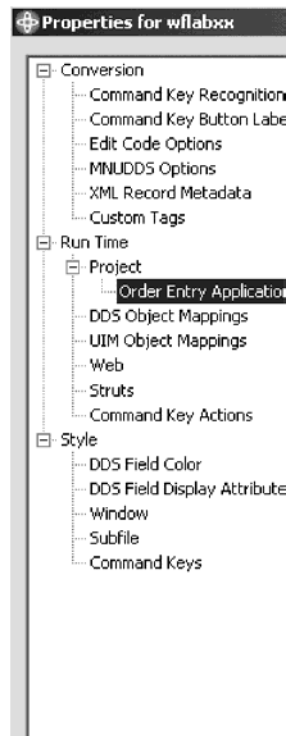
Removing the default user ID and password

You will use the CL command properties page of the run time to remove the default user ID and password information.

To remove the default user ID and password:

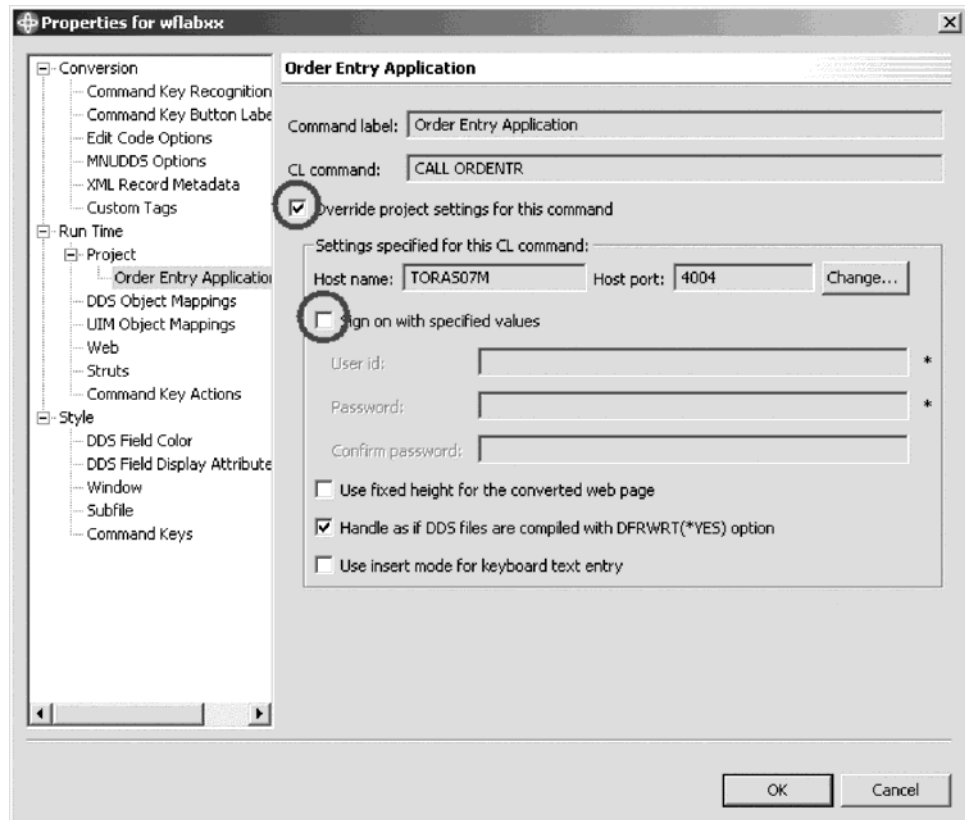
1. In the WebFacing perspective in the WebFacing project view, right-click wflabxx project.
2. Click **Properties** on the pop-up menu.
The Properties for wflabxx dialog opens.

- Under Runtime in the left pane of the Properties dialog:



- Select **Order Entry Application**.

The Order Entry application properties pane opens:



5. Make sure the **Override project settings for this command** check box is selected.
6. Clear the **Sign on with specified values** check box.
7. Click **OK** at the bottom of the Properties dialog.

You are back in the WebFacing project view. You have changed the authentication behavior for this link (application). In this WebFacing project we only have one link, but imagine that you have multiple entry points into your application like a menu. You could specify a different authentication behavior for each of these links. On the other hand, if you have multiple links in a WebFacing project and the authentication should be the same for each different link, then you can specify an authentication rule on the project level. To do this, just go to the project properties page instead of the CL command properties page and specify the desired authentication behavior there.

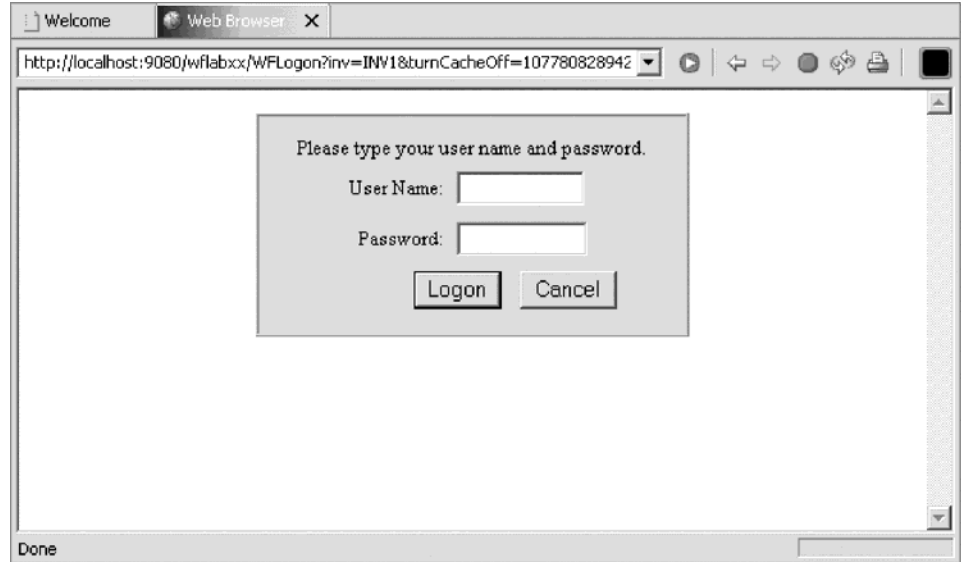
Testing the authentication dialog

As before, you run your application in the WebSphere Application Server test environment.

To test the authentication dialog:

1. Right-click wflabxx project.
2. Click **Run on Server** on the pop-up menu.
If you see a message that you have exited the browser session, click OK.
3. Click the **Order Entry** link.

You will see the authentication dialog.



4. Specify your **User Name** and **Password**.
5. Click the **Logon** push button on the Authentication dialog.
The application will run like before, if the job environment for the user ID you specified is setup correct for this application.
If the LOGON dialog doesn't appear, restart the Application Server.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Use the project properties dialog for the Order Entry application to remove the default user ID and password information.
- Run the application and where forced to provide authentication before the WebFacing runtime would start the WebFaced application.

You have created a WebFaced application and now want to enhance the look of the index.html page to give the start page of this application a professional appearance. The Development Studio client workbench contains several tools to design and enhance Web pages. Also with the workbench you have access to sample pictures, icons, animations, and more. You will use some of these tools and samples and enhance the page so it becomes more attractive. Continue to the next module.

Chapter 10. Enhancing index.html page

In this module, you will learn how to use the Web tools in the Development Studio Client workbench to update the index.html file. The index.html is the file created by the IBM WebFacing Tool that allows you to start your WebFaced application. You will use Page Designer and some related tools in the workbench to enhance the index.html page. The index.html page, the WebFacing tool creates, is very plain. In this exercise you will add some color to it, as well as some pictures to make it a more interesting Web page. This will give you a chance use some of the other tools in Development Studio Client. The Goal of the exercise The goal of this exercise is to practice using some of the Web tools in Development Studio Client to enhance the index.html Web page. You will use Designer and some related tools and use them to enhance the index.html Web page, and then test the changed page.

In order to enhance the index.html page, there are several steps you will need to learn about and follow:

- Using Page Designer components to create a more attractive browser interface
- Adding a style sheet to the page
- Adding a heading that moves
- Adding a graphic from the sample gallery
- Creating a Logo with a Web design tool
- Testing this new index.html page

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Opening Page Designer
- Working with page properties
- Linking a cascading style sheet to a Web page
- Designing and adding a logo
- Adding a heading1 tag to the page
- Adding a picture to the page
- Adding moving text to the page
- Changing the text color
- Deleting default text from the page

The exercises in this module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

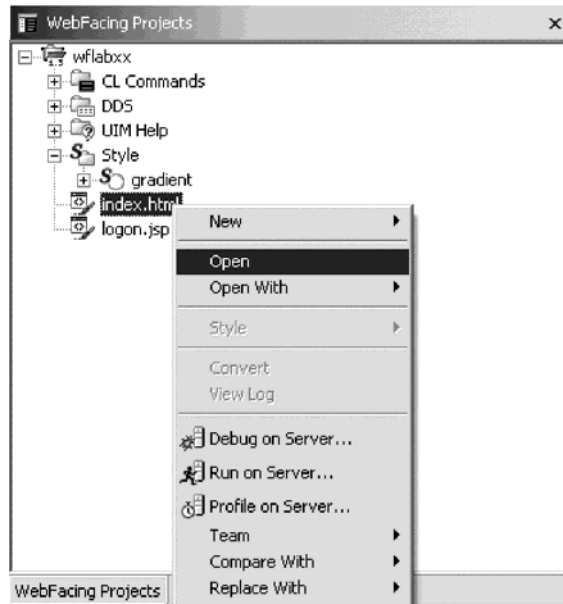
This module will take approximately 30 minutes to complete.

Opening Page Designer

To open Page Designer:

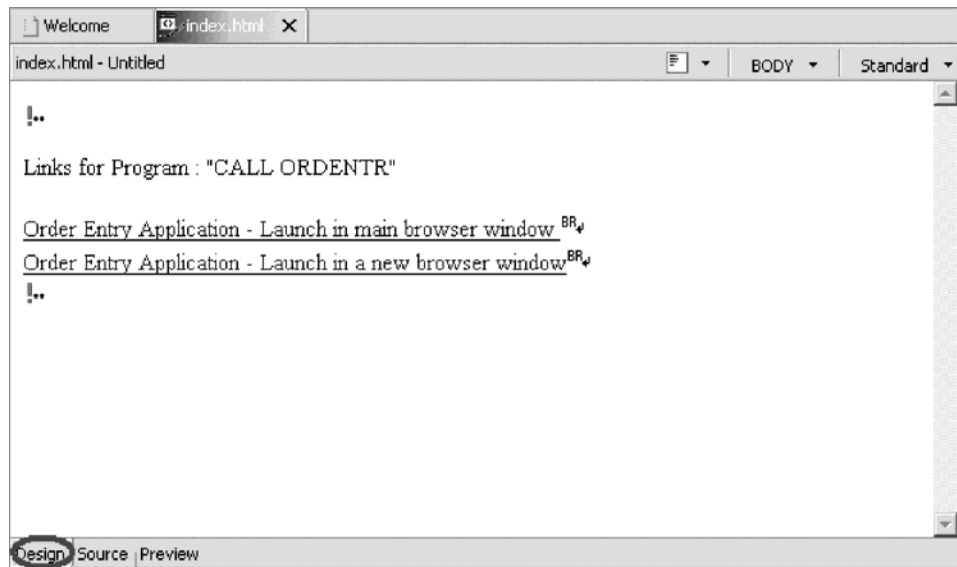
1. Open the WebFacing perspective, if not already open.

You should now have the WebFacing Projects view in your workbench environment:



2. Expand the wflabxx WebFacing project.
3. Right-click the index.html icon.
4. Click **Open** on the pop-up menu.

The Page Designer opens in the upper right pane of the workbench and shows the index.html page as the WebFacing Tool created it.



Make sure that you are on the Design page in Page designer.

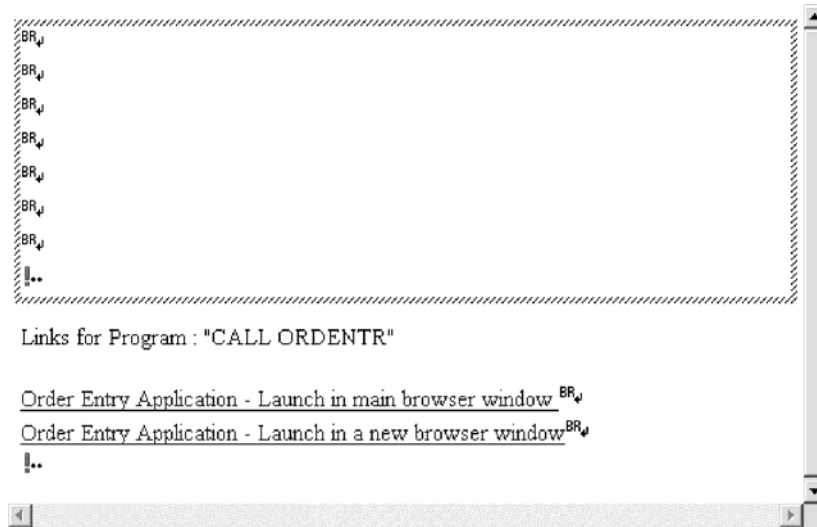
5. Click the **Design** tab.

Working with page properties

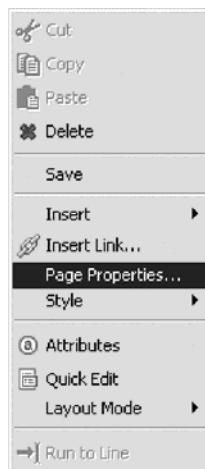
Next you move the links down.

To work with page properties:

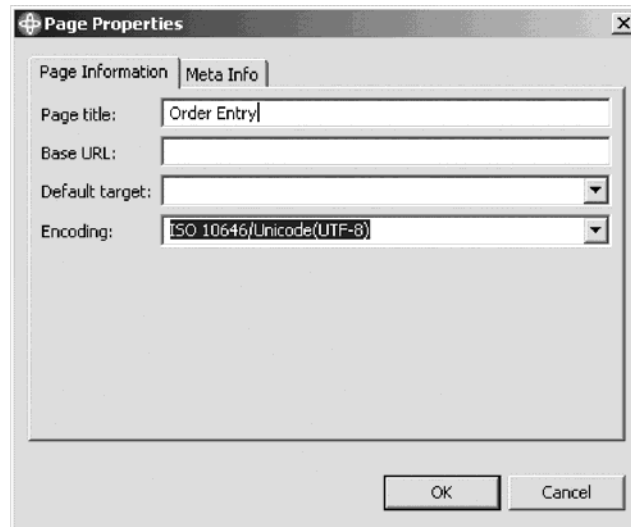
1. Click before the first TAG, which shows as an exclamation mark.
2. Press the **Enter** key a number of times:



3. Right-click the background of the index.html page in Page Designer.
4. Click **Page Properties** on the pop-up menu.



The Page Properties dialog opens:



5. In the **Page title** field, type Order Entry.
6. Click **OK** on the Page Properties dialog.

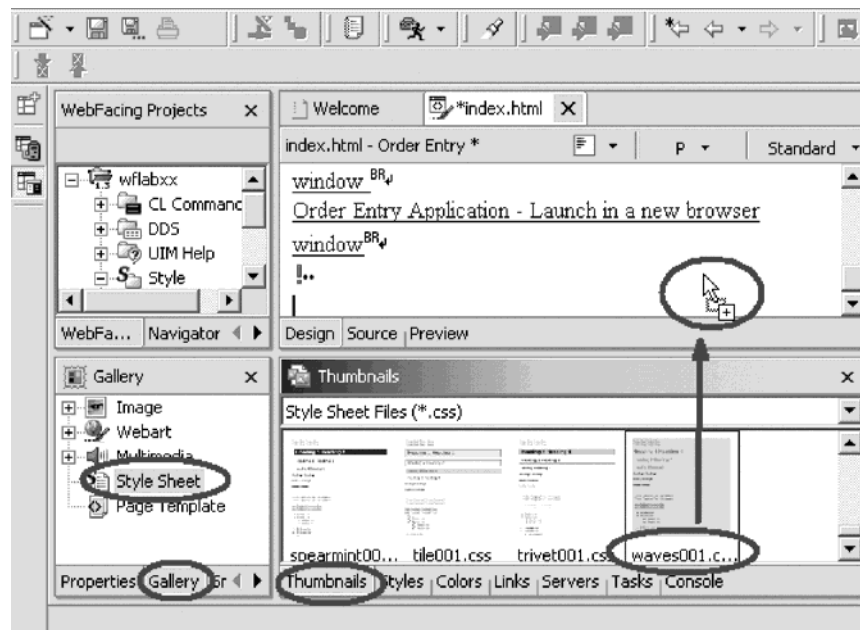
When this page is shown in a browser, the Window title bar of the browser will now display Order Entry.

Linking a cascading style sheet to a Web page



Now you will add a style to the Web page, you can use a style that is used in your company or you can use one of the sample style sheets that are provided in Development Studio Client.

Next you open the Gallery view in the workbench.

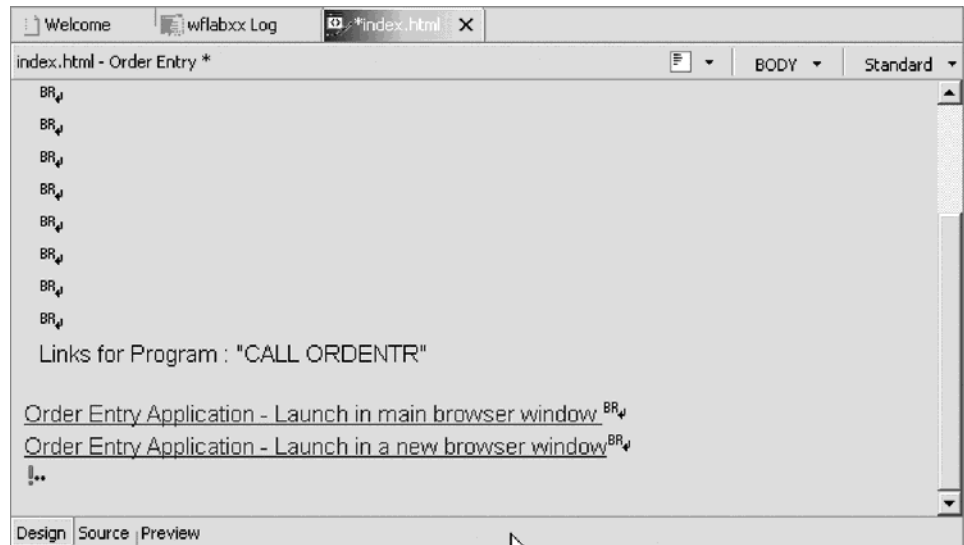
To link a style sheet:



1. Click the **Gallery** tab, if the Gallery view isn't already displayed.

2. Scroll to the bottom of the Gallery view, until can see the **Style Sheet** icon.
3. Click the **Style Sheet** icon, to select it.
4. Click the **Thumbnails** tab on the right bottom pane in the workbench.
You should see thumbnail icons of all the styles available.
5. In the thumbnail view, scroll down to the bottom, until you see style sheet waves001.css in the list, or select a style sheet that you like best.
6. Click the thumbnail picture of waves001.css with the left mouse button.
7. Hold the left mouse button down and drag the cursor to the Page Designer window.
8. The cursor will change from this shape  , to this shape  . When the latter cursor shape appears in the Page Designer window, release the left mouse button.

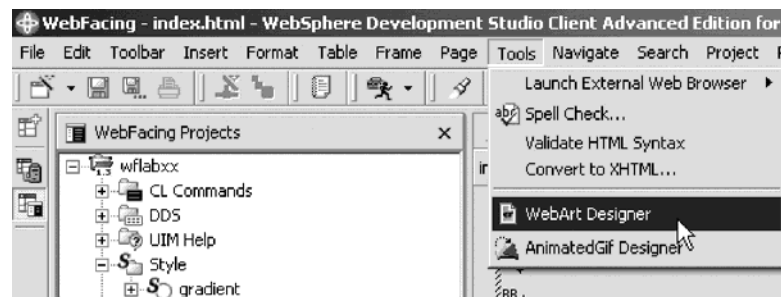
After a short while the Style sheet properties will be applied and the colors in the page will change to the style sheet definitions.



Designing and adding a logo

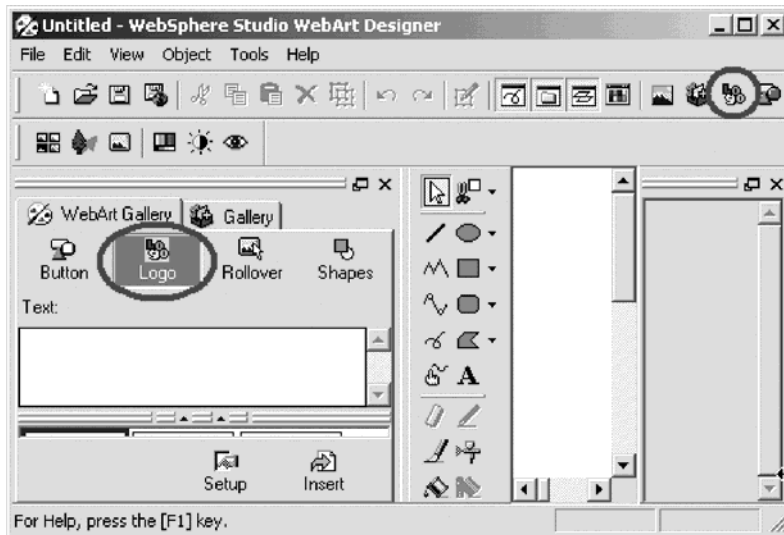
Now that you have the overall Web page look specified, you will use the WebArt Designer to create a Logo that you then will add to this page.

To start the WebArt Designer:



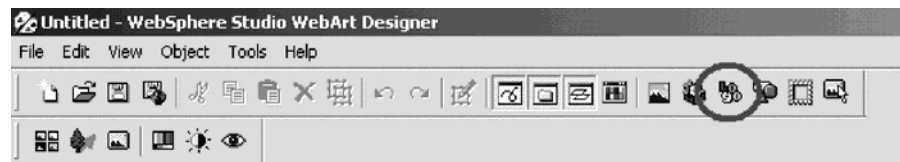
1. Click **Tools** in the workbench menu.
2. Click **WebArt Designer** on the pop-up menu.

The WebArt designer opens:

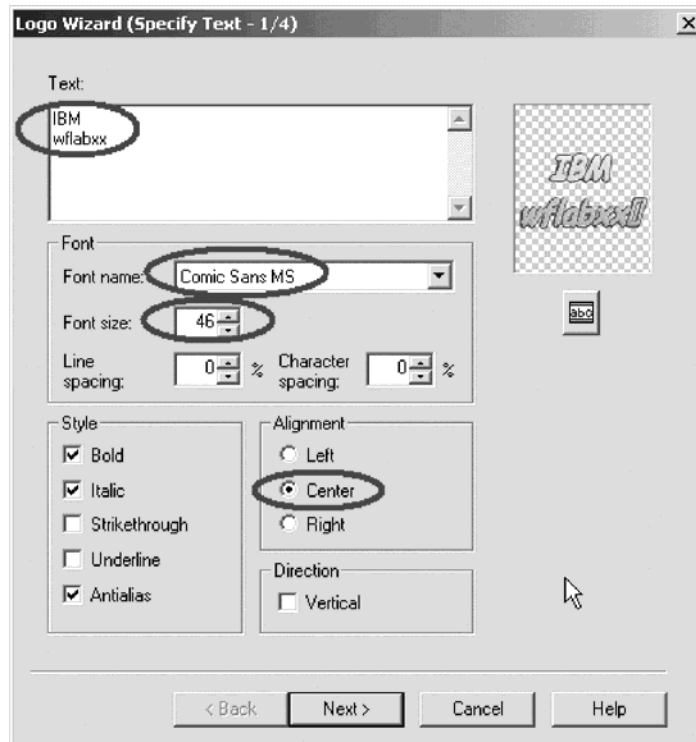


The WebArt designer shows the Template Gallery on the left, where you find sample of logos, buttons, rollovers, images and more. The big white area in middle of the dialog is the canvas that is used to work with objects that you want to create or change. Although you could select a logo from the template gallery as the base for your own logo, you will instead create you own.

3. Click the **Create Logo** button above the canvas or use the **Object > Create Logo** menu options.

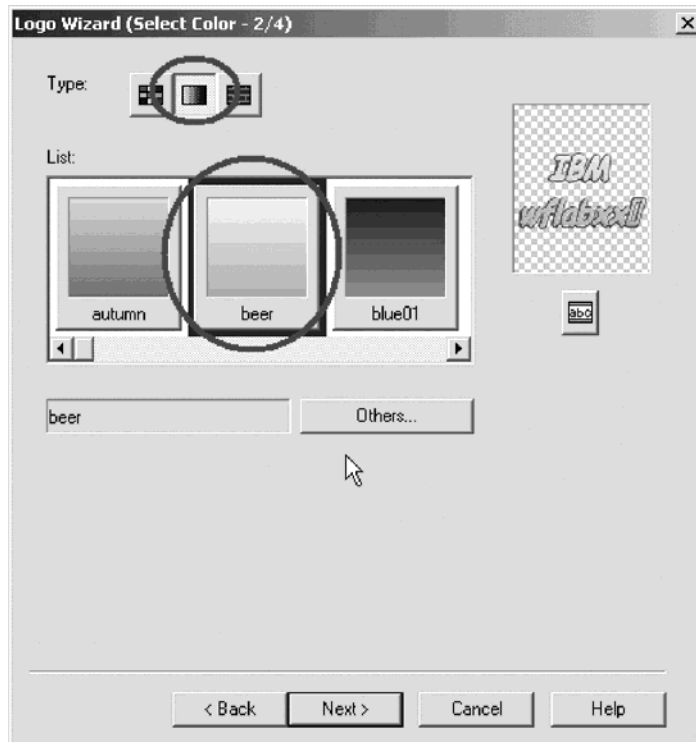


The Logo wizard opens:



4. Enter your company name in the **Text** field and in the next line of the **Text** field enter the project name.
5. Select **Comic Sans MS** in the **Font name** list.
6. Select **46** in the **Font size** list.
7. Under **Style**, select **Bold** and **Italic** check boxes.
8. Leave the **Antialias** check box selected.
9. Click the **Center** radio button under **Alignment**.
Notice in the upper right corner of the dialog, a sample of the logo as specified at the moment is being displayed.
10. Click **Next** to go to the next page of the wizard.

The Select Color page of the wizard opens:



11. Click the gradation **Type** push button, the middle one of the three type push buttons.

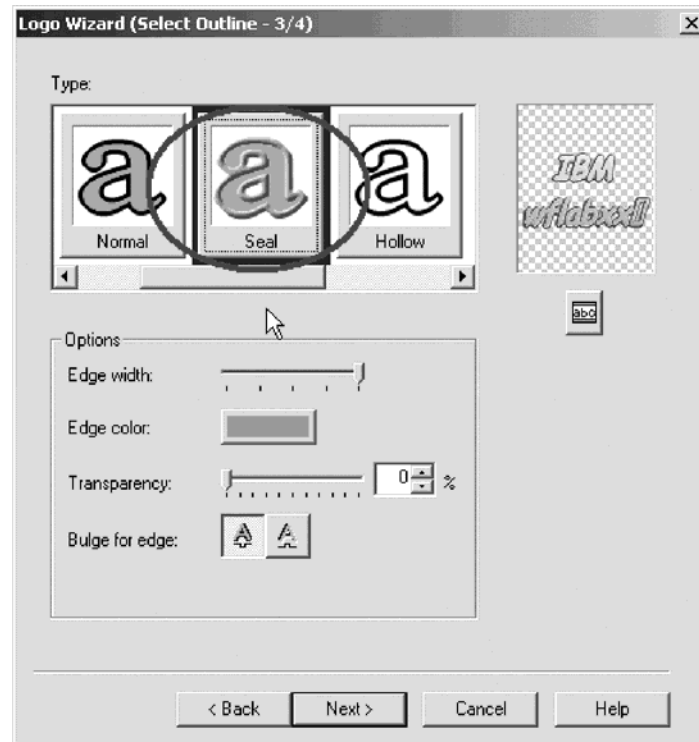
Note: The other push buttons select color types: solid and textured.

12. Select **beer** from the colors available, or any other color you like best, just scroll through the list to find a gradation you like.

Tip: You can change the colors by pressing the **Others** push button on this dialog and create you own gradation.

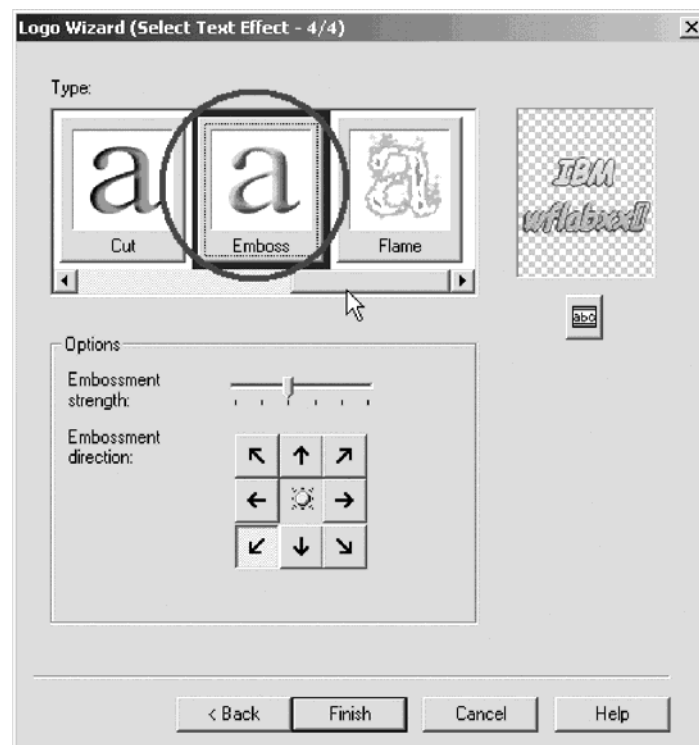
13. Click **Next** to move forward to the next page.

The Select Outline page opens:



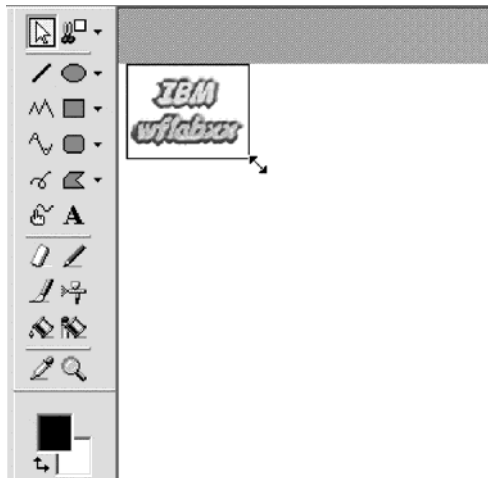
14. Select the **Seal** outline from the list, or any outline you like best.
15. Click **Next**.

The Select Text Effect page opens:



16. Select the **Emboss** text effect or one that you like best.
17. Click **Finish**.

You return to the WebArt Designer window with the new logo object.



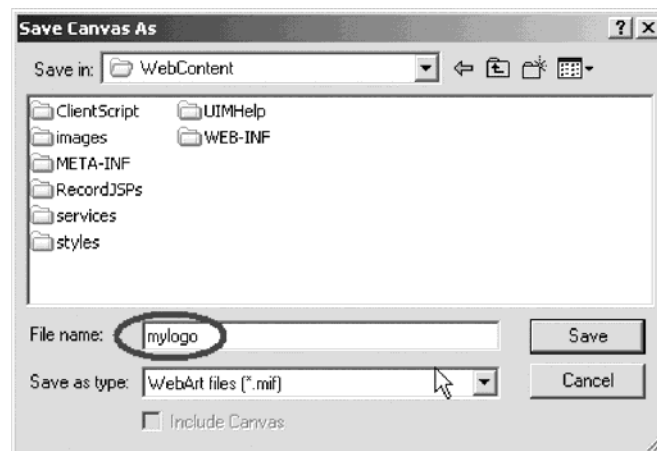
To resize the logo object on the canvas:

1. Click the logo object to select it.
2. Move the cursor to the rectangle at the right bottom corners of the object, watch the cursor changing shape.
3. Drag the rectangle up and to the left so the object becomes smaller.

Now you need to save this object. First you want save it as a WebArt object, that allows you later on to work with object again in WebArt designer. However you can't use that format for your Web page, so you will save it in another format.

4. Click **File** on the WebArt Designer menu.
5. Click **Save Canvas As** on the pop-up menu.

The Save Canvas As dialog opens:

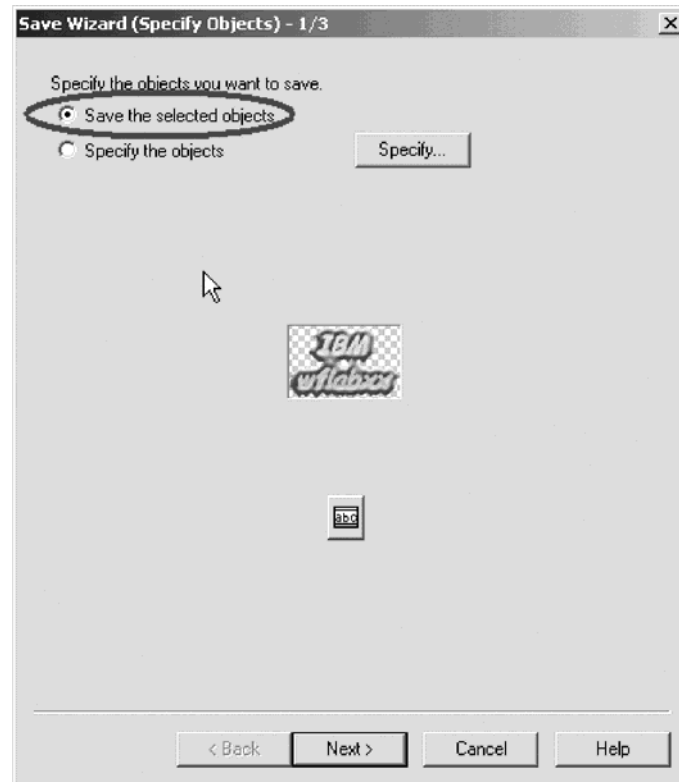


6. Type mylogo in the **File name** field.
7. Click **Save**.

Now we need to save the object in a form that can be displayed on a Web page.

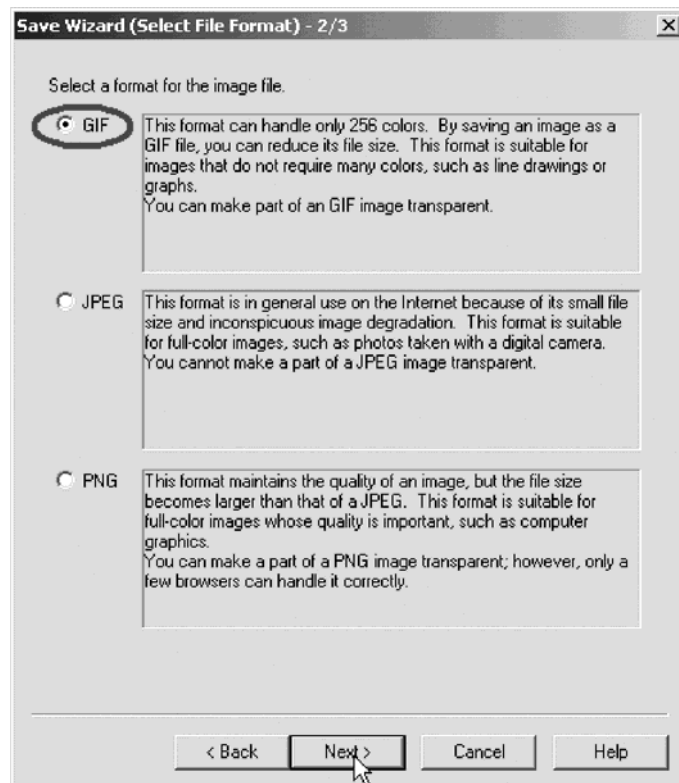
8. Click **File** from the WebArt Designer menu again.
9. Click **Save wizard for Web** on the pop-up menu.

The Save Wizard dialog opens:



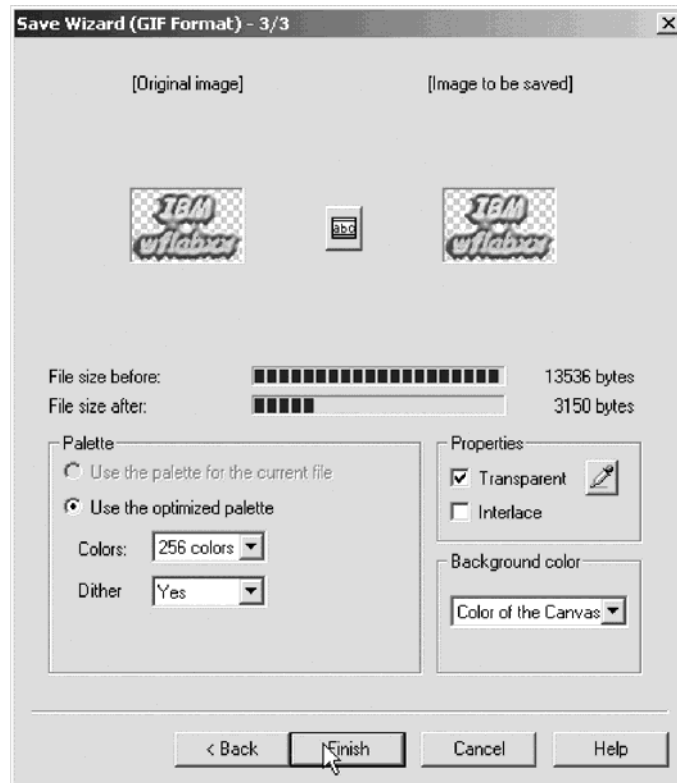
10. Leave the **Save the selected object** radio button selected.
11. Click **Next**.

Now the Select File format page opens:



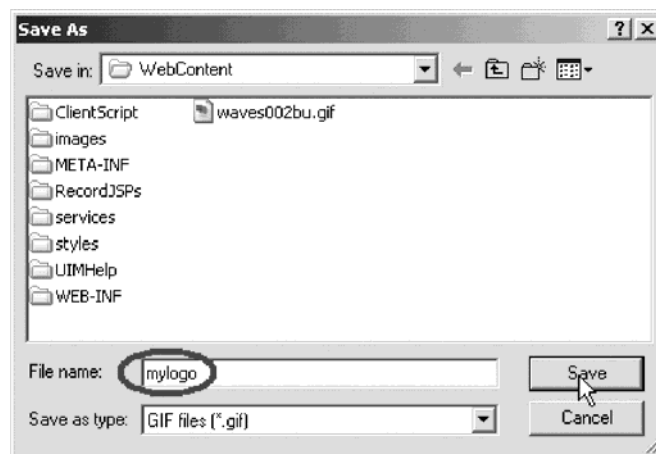
12. Leave the **GIF** radio button selected.
13. Click **Next**.

The GIF Format page opens:



14. Click **Finish**.

The Save As dialog opens:



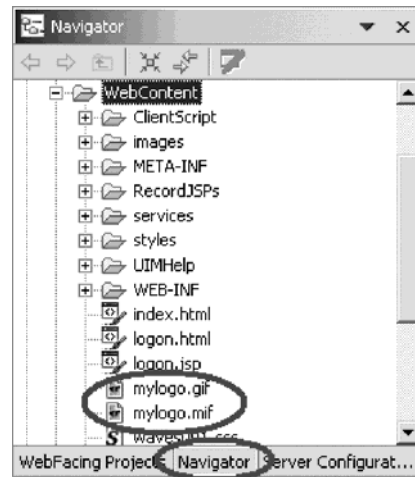
15. Type **mylogo** in the **File name** field.
 16. Click **Save**.
- Next you close the WebArt Designer.
17. Click **File** from the menu.
 18. Click **Exit** on the pop-up menu.

You are back in the workbench in the WebFacing perspective showing the WebFacing Projects view.

Next you switch to the Navigator view.

You may have to click **Window > Show view > Navigator** from the workbench menu.

19. Click the **Navigator** tab.
20. Expand the wflabxx Web project if not already expanded.
21. Expand the WebContent folder if not already expanded.



The mylogo.gif file should appear in the list.

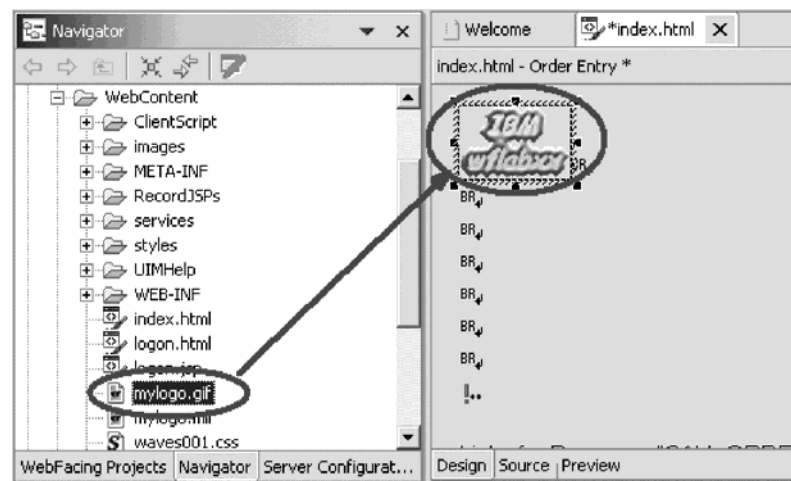
If it doesn't appear, the list might need to be refreshed.

22. Right-click the WebContent folder icon.
23. Click **Refresh** on the pop-up menu.

Now you should see the file in the Web Content folder, if not, go to Windows explorer and search for the mylogo.gif on your hard drive, then move it to the Web Content folder in the Development Studio Client workspace.

24. If you didn't use the default workspace location, do a search for the workspace and the wflabxx directory in it.
25. Move the mylogo.gif into the WebContent directory under the wflabxx directory. Refresh the Navigator view again.

Now you can take the logo and put it on your Web page that is still open in Page Designer, if Page Designer has been closed just open the index.html file.



26. In the Navigator view, select the mylogo.gif file.

27. Hold the left mouse down.
28. Drag the file to the upper left corner in the Page Designer window.
29. Release the mouse button.

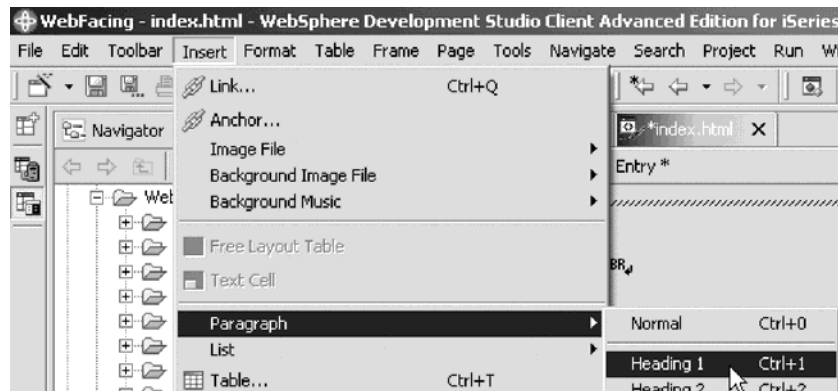
The logo is placed on the Design page.

Adding a heading 1 tag to the page

Now you want to insert a nice heading below the logo.

To add a heading 1 tag:

1. Position the cursor just below the Logo at the first BR tag.



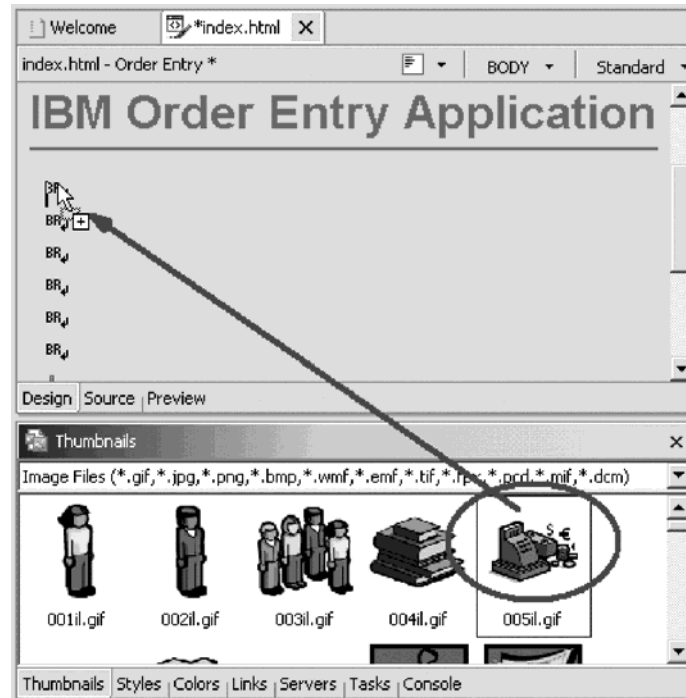
2. Click **Insert** from the workbench menu.
3. Click **Paragraph > Heading 1** on the pop-up menu.
A frame appears that allows you to enter text.
4. Enter your company name Order Entry Application:



Now you want to use one of the sample pictures that come with Development Studio Client and place this picture on the page.

Adding a picture to the page

To add a picture to the page:



1. In the workbench in the Navigator view, select the **Gallery** tab.
2. Expand the **Image** folder.
3. Select the **Illustration** folder.
4. On the dialog pane beside the Gallery view, select one of the sample illustrations, for example, use file 005il.gif.

Note: The sample illustrations change from release to release so 005il.gif might not be available in your environment.

5. Drag a picture onto the Design window below the heading.
The Design window now contains a picture:



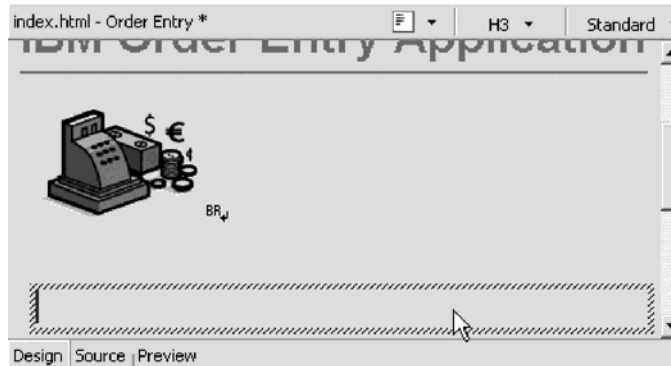
You are almost done. Next you add moving text to the page.

Adding moving text to the page

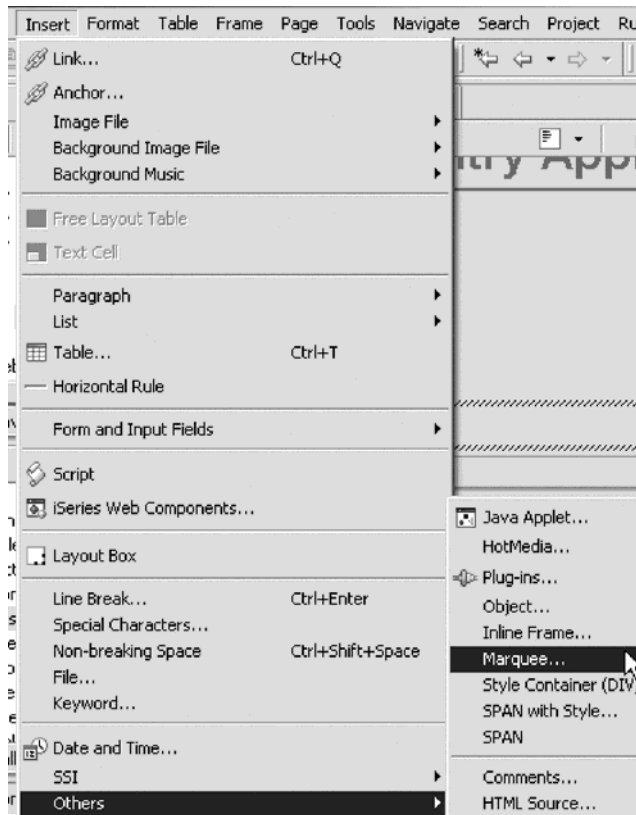
Now you add moving text to the page.

To add moving text:

1. Position the cursor in the Design page underneath the picture.
2. Click **Insert** from the workbench menu.
3. Click **Paragraph > Heading 3** on the pop-up menu.

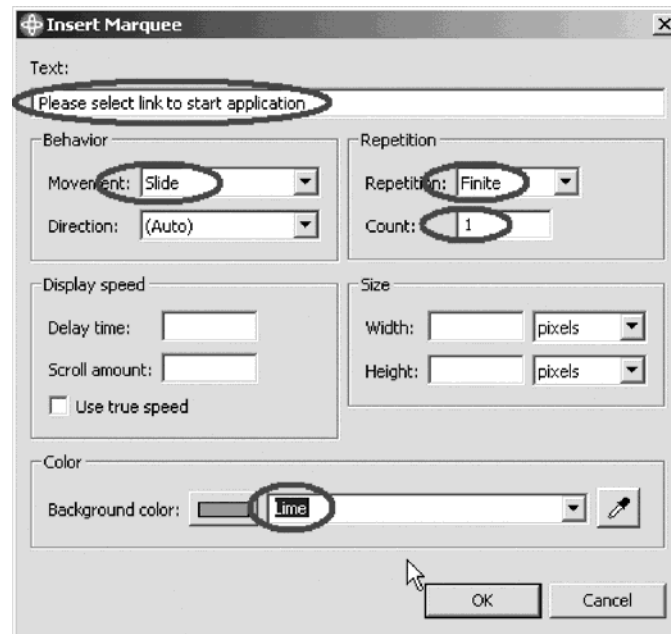


4. Leave the cursor positioned inside the heading 3 frame.



5. Click **Insert** from the workbench menu.
6. Click **Others > Marquee** on the pop-up menu.

The Insert Marquee dialog opens:



7. Enter into the **Text** field: Please select link to start application.
8. Under **Behavior**, select **Slide** in the **Movement** list.
9. Under **Repetition**, select **Finite** in the **Repetition** list.
10. Under **Repetition**, type 1 in the **Count** field.

The two last selections just avoid the text sliding in forever and not standing still, if you think your user can stand some more movement on the page feel free to change these settings.

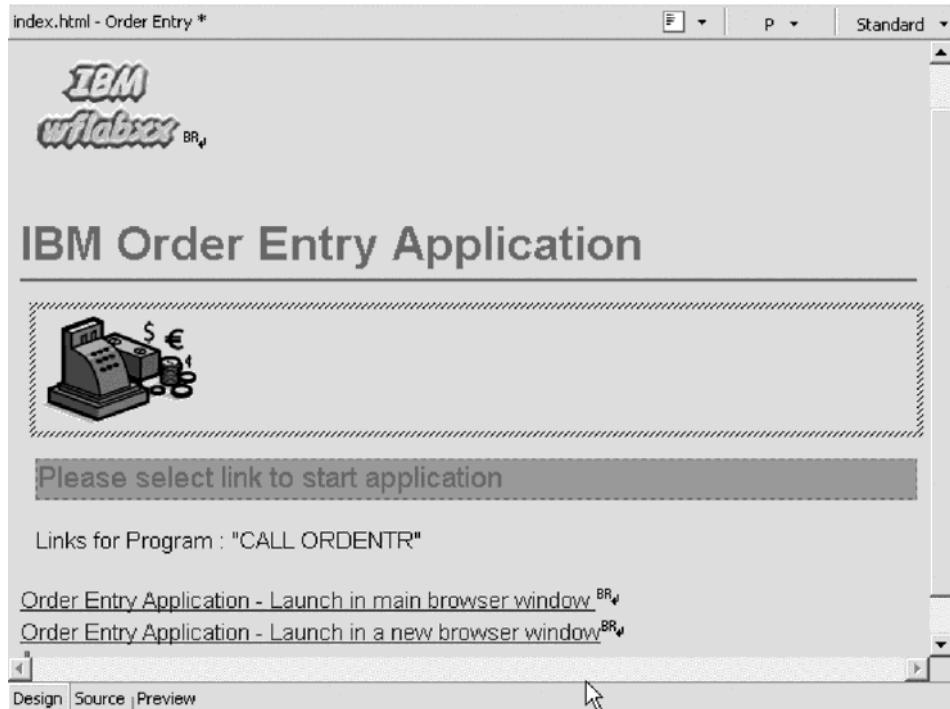
11. Select **Lime** in the **Background color** list. Click **OK** on the Color palette.
12. Click **OK** on the Insert Marquee dialog.

The Design page should look like:



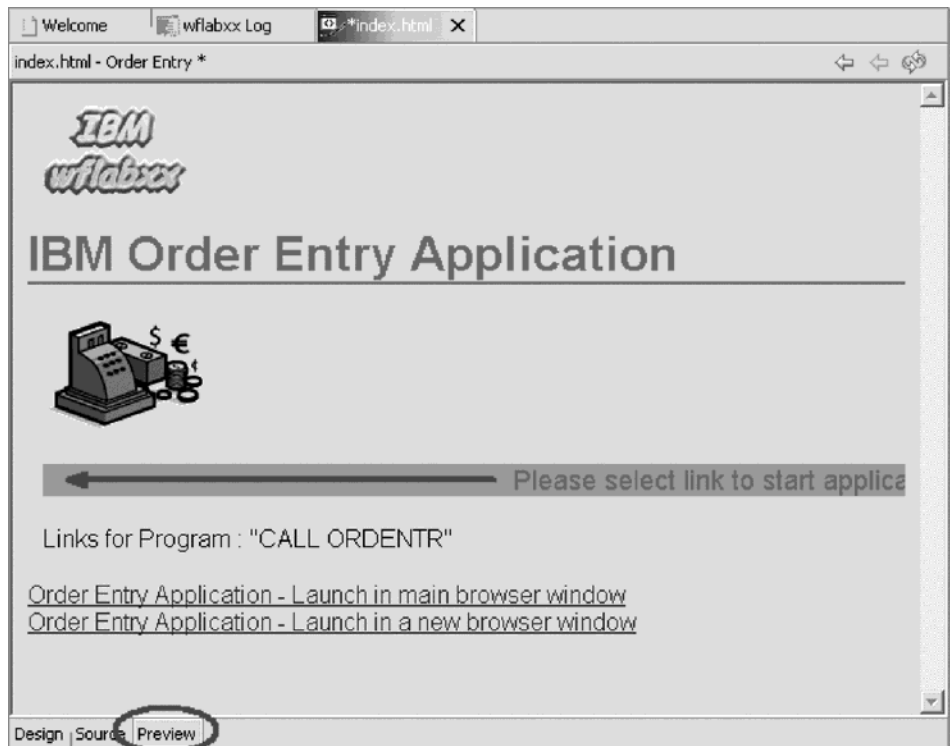
13. Position the cursor on the **BR** tag.

14. Press the **Delete** key until the links appear on your page:



Next you look at the page, as it would appear in a browser.

15. Click on the **Preview** tab at the bottom of the Design page.
You will notice that your heading 3 text is sliding in:



Changing the text color

You notice that the Text color and the background interfere a little bit one easy way of changing this, is to apply another color to certain areas of the text. To do that you return to the Design page.

To change the text color:

1. Click the **Design** tab.



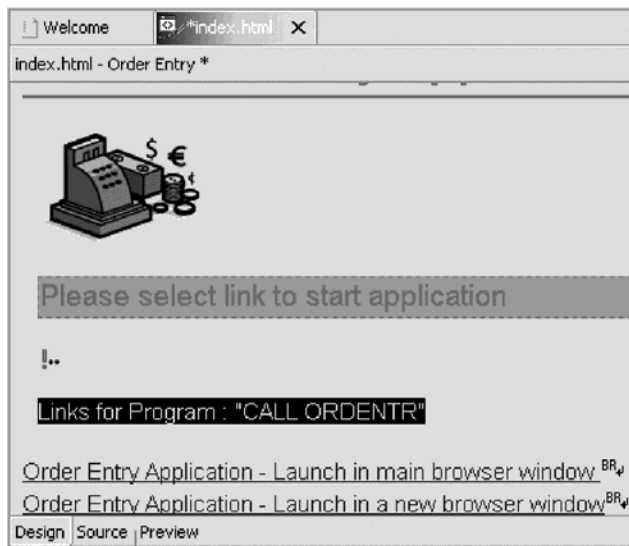
2. Select the company text (IBM) you want to change color on, by swiping the text area with the mouse cursor.
3. Under the Page Designer window, select the **Colors** tab.
4. Select a color with your mouse cursor.
5. Select the **Text Color** from the Colors dialog.
6. Click **Set as Text Color** on the pop-up menu.

You are done; now the selected text will be displayed with the color you selected for it.

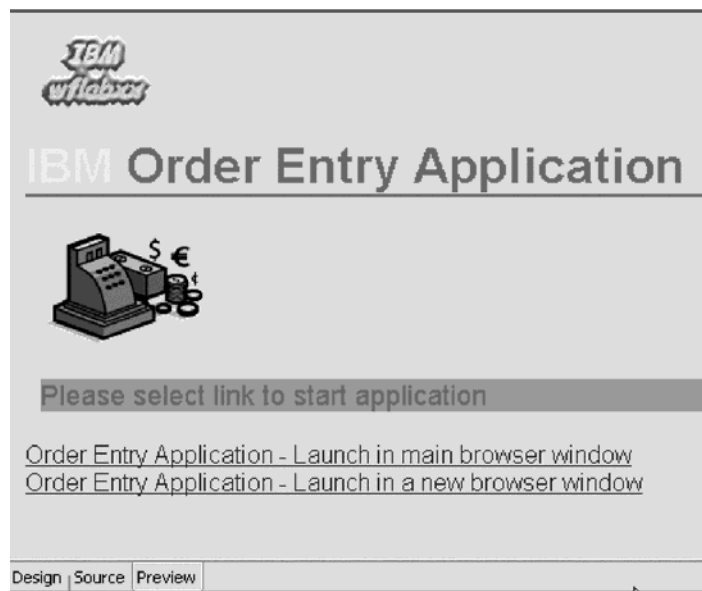
Deleting default text from the page

One more thing to do, you want to remove the default text that was added by the WebFacing tool.

To delete default text from the page:



1. Select the text.
2. Press the **Delete** key.
3. Select the **Preview** tab to view your completed page.
4. Close the file index.html.
5. Click **Yes** to save the changes.
Page Designer is closed.
6. In the Navigator view or WebFacing Projects view, right-click wflabxx.
7. Click **Run on Server** on the pop-up menu.
If you see a message that you have exited the browser session, click OK.
Your new designed index.html page opens and you can run your application.



Recap

Congratulations! You have completed this module. You should now understand how to:

- Opening page designer
- Working with page properties
- Linking to a cascading style sheet
- Create a heading
- Add an image
- Create a LOGO and add it
- Add Marquee
- Change the color of text
- Deleting default text

After creating and testing your completed WebFacing application, you can deploy the WebFacing application, if you have WebSphere Application Server Express installed on your iSeries server . If you want to deploy your WebFacing application, continue to the next module.

Chapter 11. Exporting to iSeries WebSphere Application Server Express 5.0

You have tested the WebFaced application in the WebSphere Application Server test environment and you are ready to move it to your iSeries WebSphere Application Server production environment. You are running WebSphere Application Server Express Version 5.0 on your iSeries server. In this module, you will learn how to copy your WebFacing project files to the iSeries file system. You will then learn how to install the application in the application server.

You learn how to publish your WebFacing files to a remote WebSphere Application Server Express 5.0 environment on an iSeries host. You will start the Export tool in Development Studio Client, specify files to export, install and start the Web application in the WebSphere Application Server Administrative console.

In order to export to WebSphere Application Server, there are several steps you will need to learn about and follow:

- Using the WebSphere Development Client wizards to specify the files to deploy to the application server
- Exporting the selected EAR files to the server file system
- Installing the WebFaced application on the remote application server through the WebSphere Application Server Administrative console
- Using a browser to invoke the WebFaced application on the remote Application Server.
- Learning how to copy selected file from a WebFacing project in the workbench to the application server, to apply small changes without having to copy the complete EAR file

In order to accomplish these learning objectives, there are several steps that are involved, including:

- Exporting the files to the Web server
- Exporting your EAR file
- Installing the application
- Testing the Web application

The exercises in this module must be completed in order. Start with the first exercise when you are ready to begin.

Length of time:

This module will take approximately 30 minutes to complete.

Exporting the files to the Web server

First you copy the WebFacing project files to a WebSphere Application Server, Version 5.0. These first steps are the same for WebSphere Application Server for iSeries, Version 5.0 and the WebSphere Application Server for iSeries Express, Version 5.0.

Before you export any files, you must map a network drive to the Root file system on the iSeries where WebSphere Application Server is installed.

To map a network drive:

1. Right-click the **Network Neighborhood** or (**My Network Places**) icon on the desktop.
2. Select **Map Network drive** from the pop-up menu.

The Map Network Drive dialog opens:



3. In the **Folder** field, enter two backslashes `\\` and the Netserver name of your Web server, and then `\root`, for example: `\\S400A\root`.
4. Click **Finish**.

You now have an additional drive available on your workstation and are ready to export your WebFacing project files.

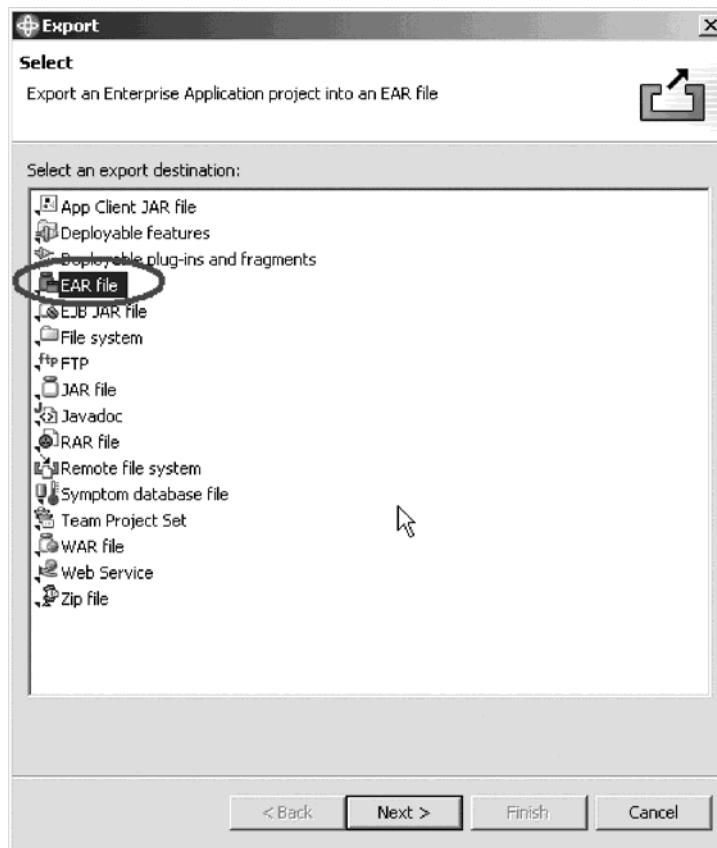
Exporting your EAR file

The J2EE standard has the concept of an Enterprise Archive File (EAR). This file is a zip file that contains all information about your Web application. In the workbench, this file is built automatically for Web projects. Since your WebFacing project is a Web project, the `wflabbxxEAR` file exists already. You only have to move it to the application server, point to it, and then install the application. There is no need to worry about the structure of the application. Everything is taken care of in the workbench. Return to the Development Studio Client workbench.

To export your EAR file:

1. In the WebFacing perspective, click **File** from the workbench menu.
2. Click **Export** on the pop-up menu.

The Select page of the Export wizard opens:

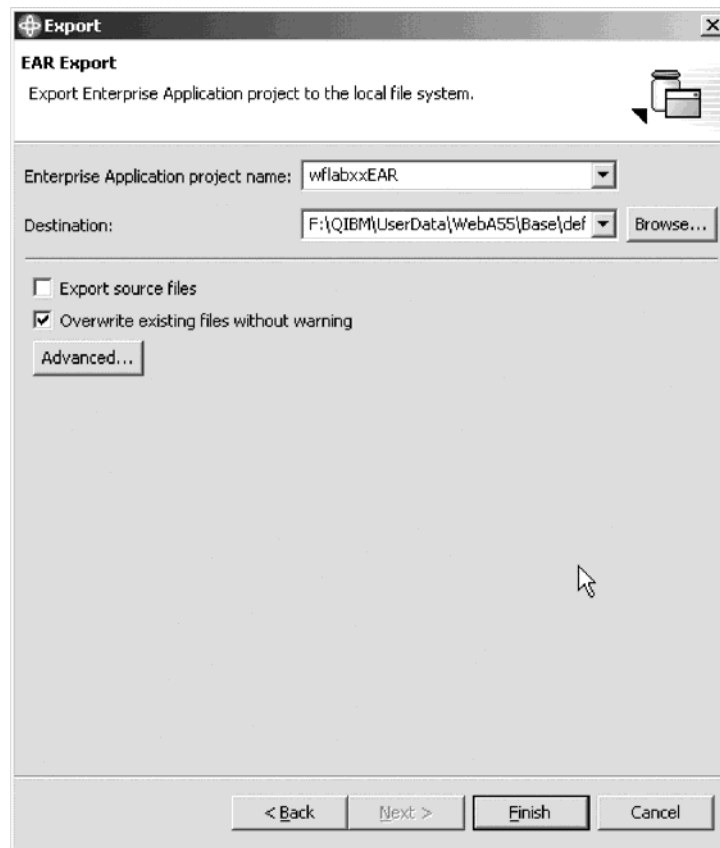


3. Select the **EAR file** icon.

An EAR file is a compressed Enterprise Application Archive, and it contains all the files needed for the Web application.

4. Click **Next**.

The EAR Export page opens.



5. Select the name of the resources you used when creating your WebFacing project. This should be wflabxxEAR.

In the Where do you want to export the resources to field:

6. In the Destination field, where you want to put the EAR file by entering the drive and directory structure of the IFS drive you mapped in the steps before. For example, use the default directory structure for installable applications: `x:\QIBM\UserData\WebAS5\Base\default\installableApps\wflabxx.ear` where `x:` is the drive letter mapped from your iSeries host in the previous steps.

Note: For WebSphere Application Server Express, the default installation directory would be:

`x:\QIBM\UserData\WebASE\ASE5\server_name\installableApps\wflabxx.ear`

7. Select the **Overwrite existing files without warning** check box.
8. Click **Finish**.

If you see a message asking you to create a directory or delete an existing file: Click **OK** or **Yes** and continue. Now you can install the application in WebSphere Application Server.

Installing the application

At this point, you already need to have set up and started the WebSphere Application Server and an associated HTTP server on your iSeries server. You also need to find the port number of the HTTP servers Administrative Console (referred as port#a) and the port number to run your application (referred to as port#b) The second one is the port number of your HTTP server that is set up to work with your application server.

To install the application:

1. Open any Web browser and type: `http://servername:port#a/` in the **Address** field.

Note: The default administrative port number for the HTTP server is 2001.
The Login dialog appears.

2. Type your **iSeries user ID**.
3. Type your **iSeries password**.
4. Click **OK**.

In the browser:



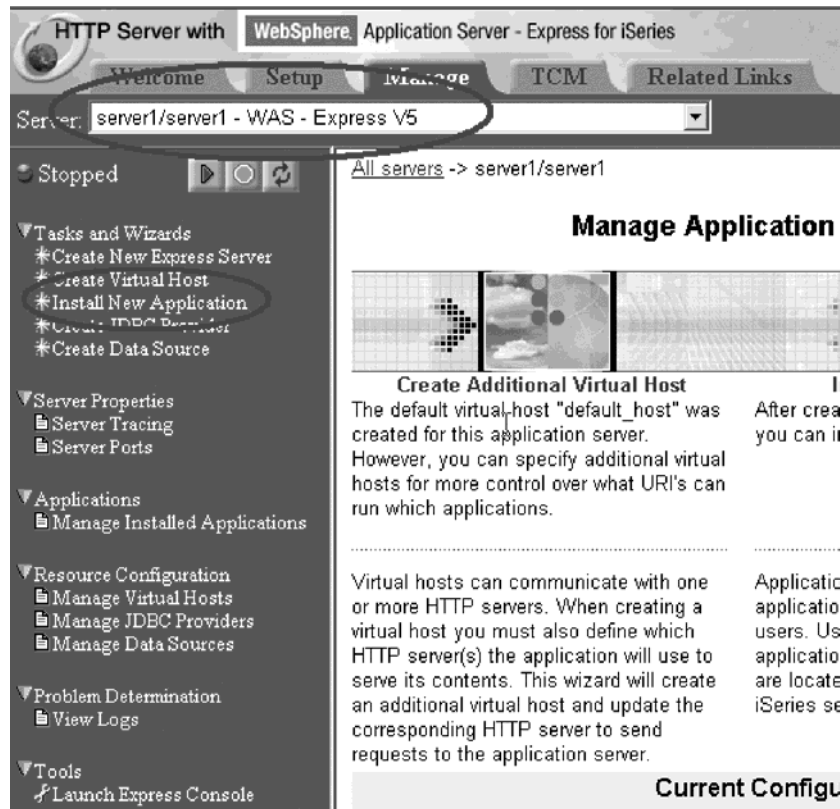
5. Click the IBM WebSphere Application Server – Express for iSeries menu option.

Note: You could also select the first option IBM HTTP Server for iSeries if that is the server you are using.

The Administration pages for the HTTP and application servers display.

6. Select the **Manage** Tab.

The Manage Application Server – Express page displays:



7. Select your **WebSphere Application Server Express** server instance from the **Server** list.
8. Click **Install New Application** under **Tasks and Wizards** list.

The Install New Application page displays.



9. Click the **Application is contained in an EAR file** radio button.
10. Specify the location of your EAR file, (the file that you exported in the previous step).
You can use the **Browse** push button to locate the file.
11. Click **Next**.

A page appears with options for application installation:

All servers -> server1/server1 -> Install New Application

Install New Application ⓘ

Provide Options to Perform the Install

Specify application deployment options

Application name: ⓘ

Directory application installed to: /QIBM/UserData/WebASE/ASE5/server1/installedApps

Pre-compile JSPs ⓘ

Note: Pre-compiling JSPs can have significant performance impacts. When enabled, the JSPs in the application will be compiled at installation time, causing the application install to take longer. When disabled, the JSPs will be compiled the first time they are accessed, causing the first use of the application to take longer.

12. In the **Application name** field, type wflabxx.
13. You can select the **Pre-compile JSPs** check box to speed up the process of showing the page the first time. (JSPs are compiled into Servlets when first generated.)
14. Click **Next**.

The Map Virtual Hosts Page appears:

All servers -> server1/server1 -> Install New Application

Install New Application ⓘ

Map Virtual Hosts for Web Modules

Specify the virtual host you want to associate with the web modules contained in this appl the same virtual host or dispersed among several virtual hosts.

Map web modules to virtual hosts: ⓘ

Web module	Virtual host
wflabxx	default_host

15. Select the **virtual host** to be associated with the Web module.
16. Select a **virtual host** of your choice, or leave the default host selected.
17. Click **Next**.

The application summary page displays:

All servers -> server1/server1 -> Install New Application

Install New Application ⓘ

Summary

When you click **Finish** the installation will be started for the following application.

IFS path of EAR file: /QIBM/UserData/WebASE/ASE5/server1/installableApps/wflabxxEAR.ear

Application name: wflabxxEAR

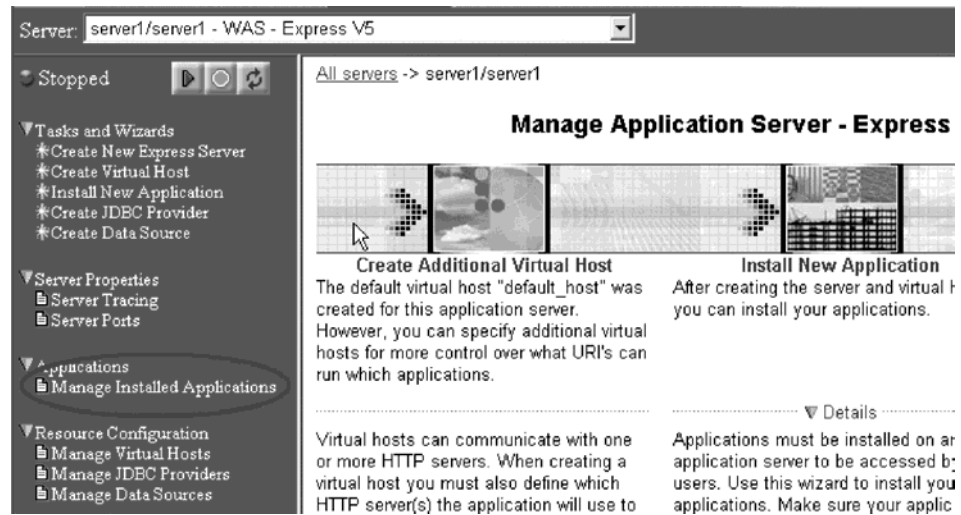
Directory application installed to: /QIBM/UserData/WebASE/ASE5/server1/installedApps

Pre-compile JSPs: Enabled

Map web modules to virtual hosts:

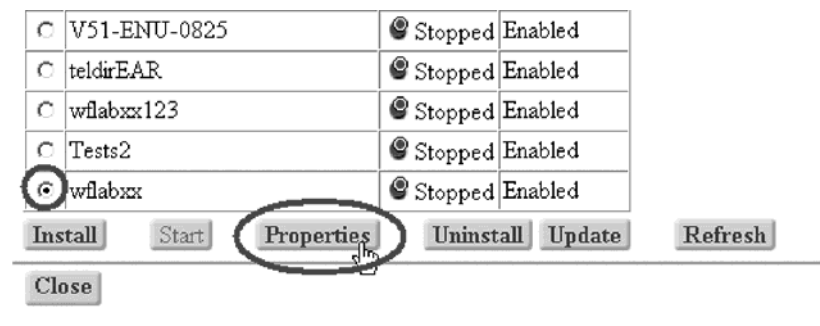
Web module	Virtual host
wflabxx	default_host

After the successful installation you see a page where you can manage the installed applications:



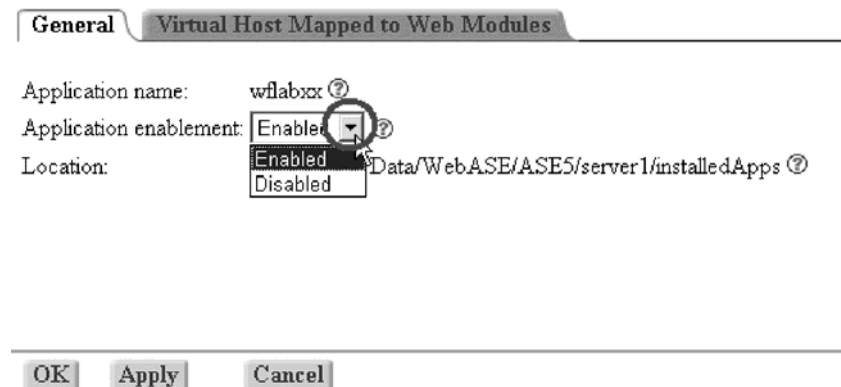
18. Click **Manage Installed Applications** under **Applications**.

A page with the installed applications displays:



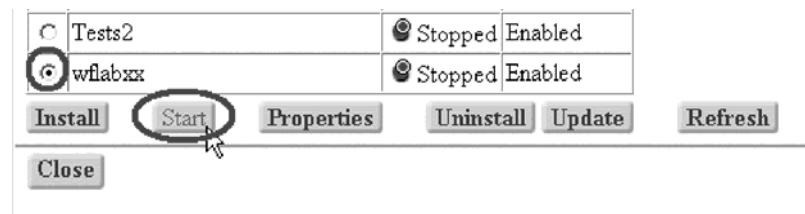
19. Click **wflabxx** radio button in the list of installed applications.
20. If the **wflabxx** application is disabled, click the **Properties** push button to enable the application.

Application Properties ⓘ



21. Select **Enabled** from the **Application enablement** list.
22. Click **OK**.

Next you start the application with wflabxx in the enabled state:



23. Click **wflabxx** radio button.

24. Click **Start**.

Now you are ready to test your Web-enabled application.

Testing the Web application

To test the Web application:

1. Open the Internet Explorer and type `Http://servername:port#b/wflabxx` in the **Address** field.

Note: This is the HTTP port name, most likely 80, not the application bootstrap port.

Your application `index.html` page should open. If it does not, double-check the URL and the port number. Also try restarting the HTTP server and the application server. Refer to the Administrative Console Web site if you are having problems starting and running the HTTP server or the WebSphere Application Server. If you still encounter problems, there are troubleshooting guides, FAQs, and newsgroups on the Web where you can find an explanation of your situation with more detailed information.

Recap

Congratulations! You have completed this module. You should now understand how to:

- Export files created by the WebFacing Tool to a remote WebSphere Application Server
- Publish and deploy your application in a real production environment

As you can see with the IBM WebFacing Tool, you can quickly convert your DDS display file source members so that the user interface of your iSeries programs can run in a browser. When you convert your DDS display files, JSP files and Java beans are generated for you that substitute for the DDS code and make Web access possible.

In the WebFacing Project wizard, you can select one or more DDS source members to convert, and select a Web look and feel from one of several predefined styles, or you can design your own Web style for use with your applications. The tool creates three JSP and XML files for your record formats. The XML files hold the data for the record format, or control its appearance or other characteristics, and the JSP handles displaying the Web version of the screen, prompting for data, and handling input errors. The wizard generates an application home page to launch the Web-enabled version of your program.

When you invoke a converted application from the browser, the WebFacing server on the iSeries server starts the server program. The server intercepts all calls to

READ, WRITE, and EXFMT operations to DSPFs, so that in many cases your program (*PGM) can run without modifications, and without even detecting that it is being accessed using WebFacing. You might need to make coding changes if your application uses DDS keywords that are not supported by WebFacing, or if you want to modify the DDS screens so that the conversion to Web format produces a more attractive or consistent result.

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