

# Developing DB2 Everyplace JSP Applications using WebSphere Studio Application Developer v4.0

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## Abstract

This document describes how to generate JavaServer Pages (JSP) that access DB2 Everyplace databases using WebSphere Studio Application Developer. A detailed step-by-step description of how to use WebSphere Studio's DBExplorer View to create a connection to DB2 Everyplace database will be presented.

This document is intended for DB2 Everyplace database application developers:

- Who want to build a DB2 Everyplace JSP application
- Who are unfamiliar with WebSphere Studio Application Developer

The information in this paper has been verified with the following versions of DB2 Everyplace and WebSphere Studio Application Developer:

- DB2 Everyplace v8.1.1 (<http://www.ibm.com/software/data/db2/everyplace/>)
- WebSphere Studio Application Developer v4.0  
(<http://www.ibm.com/software/ad/studioappdev/>)

## Setting up DB2 Everyplace environment

This paper assumes the reader has installed DB2 Everyplace. If you haven't already done so, modify your system CLASSPATH and PATH variables for DB2 Everyplace. <DB2 Everyplace> is the directory where DB2 Everyplace is installed.

- 1) Start => Settings => Control Panel => System => Advanced => Environment Variables...
- 2) Add the following to the system CLASSPATH variable:  
<DB2Everyplace>\Clients\Win32\database\JDBC\db2ejdbc.jar
- 3) Add the following to the system PATH variable:  
<DB2Everyplace>\Clients\Win32\database\x86

## Installing WebSphere Studio Application Developer

IBM WebSphere Studio is a single, comprehensive development environment designed to meet all development needs from Java development to application integration. The WebSphere Studio Family includes many different editions tailored for different development requirements and environments.

IBM WebSphere Studio Application Developer is an easy-to-use, integrated development environment for building, testing, and deploying J2EE and Web services applications. An evaluation copy can be downloaded from the Web site above (navigate to the Downloads page and look for WebSphere Trials (WebSphere Studio Application Developer)).

## Running WebSphere Studio Application Developer

Start WebSphere Studio in the <DB2Everyplace>\SDK\JSP\Win32 directory. Starting in this directory will allow you to use relative paths when specifying the URL of the database you want to connect to.

### Sample DB2 Everyplace JSP Application: Visiting Nurse Schedule

The example that follows describes how to create the Visiting Nurse Schedule sample (in the <DB2Everyplace>\SDK\JSP\sample\jsp\VNSchedule\_wsad40 directory).

#### Create a Web Project

Follow the steps below to create a web project:

- 1) Open the Web Perspective.
- 2) Select File => New => Web Project
- 3) Project name: VNSchedule\_wsad40
- 4) Click **Finish**. You will see the new project in the Navigator View.

**Create a Web Project**

**Define the Web Project**

Create a Web project and add it to a new or existing Enterprise Application project.

Project name: VNSchedule\_wsad40

☒ Use default location

Location: E:\DB2Everyplace\SDK\JSP\Win32\VNSchedule\_ Browse...

Enterprise Application project name: DefaultEAR

Context root: VNSchedule\_wsad40

☐ Create CSS file

< Back Next > Finish Cancel



## Create a Connection for the DB2 Everyplace database

To create a connection for the Visiting Nurse Schedule sample database:

- 1) Open the Data Perspective.
- 2) In the DBExplorer View, right-click and select **New Connection...**
- 3) In the New Database Connection window:
  - a. Connection name: DB2Everyplace
  - b. Database: VNSAMPLE
  - c. Database vendor type: MySQL, V3.23
  - d. JDBC driver: Other MySQL Driver
    - i. Note: DB2 Everyplace is currently unsupported by WSAD. The workaround is to use MySQL as the database vendor type (like DB2 Everyplace, MySQL does not support schemas).
  - e. JDBC driver class: `com.ibm.db2e.jdbc.DB2eDriver`
  - f. Class location:
 

```
<DB2Everyplace>\Clients\Win32\database\JDBC\db2ejdbc.jar
```
  - g. Connection URL: `jdbc:db2e:../sample/data/VNSAMPLE`
    - i. Note: Make sure you use forward slashes in the URL.
- 4) Click **Finish**.

**New**

**Database Connection**

Establish a JDBC connection to a database.

Connection name: DB2Everyplace

Database: VNSAMPLE

User ID:

Password:

Database vendor type: MySQL V3.23

JDBC driver: Other MySQL Driver

Host:

(Optional) Port number:

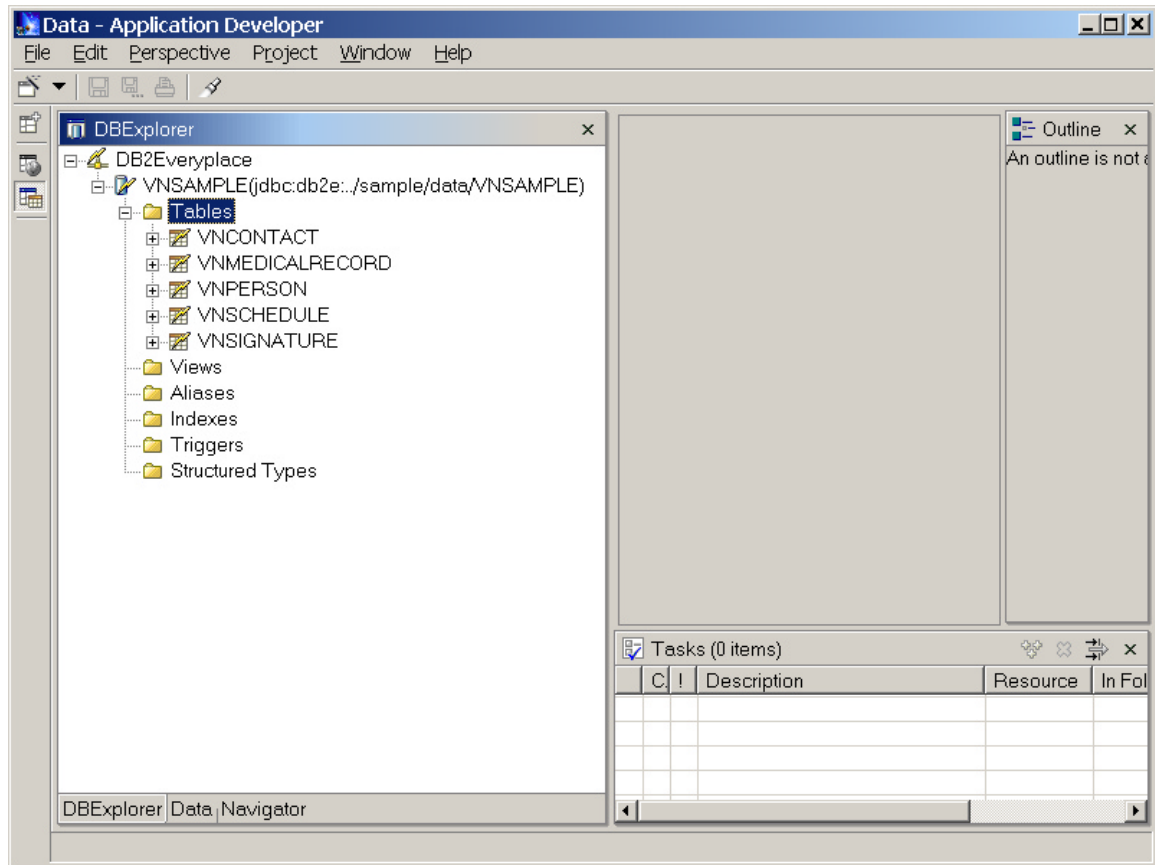
Server name:

JDBC driver class: com.ibm.db2e.jdbc.DB2eDriver

Class location: 32\database\JDBC\db2ejdbc.jar

Connection URL: jdbc:db2e:./sample/data/VNSAMPLE

Expand the DB2Everyplace connection in the DBExplorer View. Keep expanding until you see the tables for the connection. You should see the sample tables.

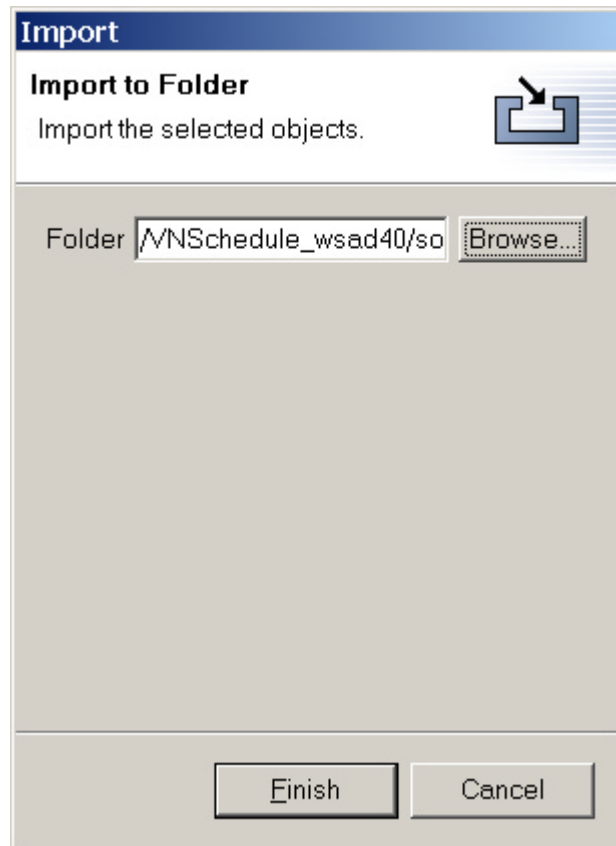
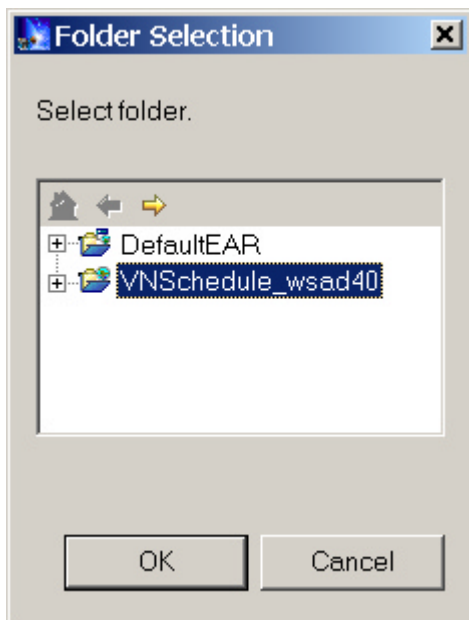


## Import the Connection to the Web Project

The DB2Everyplace connection needs to be imported to the web project that we created earlier:

- 1) Right-click on the DB2Everyplace connection in the DBExplorer View and select **Import to Folder...**
- 2) Folder: Click **Browse...**, select **VNSchedule\_wsad40**, and click OK.
- 3) Click **Finish**.
- 4) Click **Yes** in the Confirm folder create dialog.

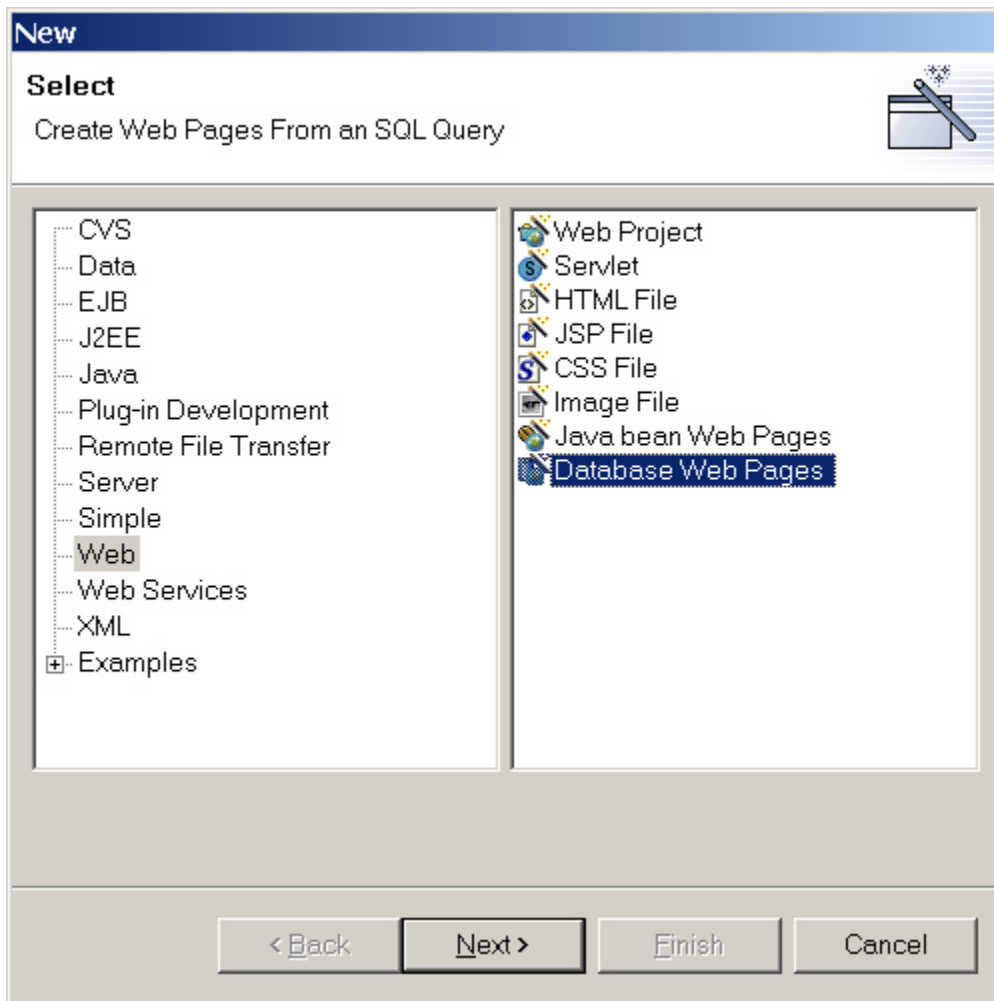
In the Web Perspective, the connection info should be under VNSchedule\_wsad40/source/databases.



## Create a JavaServer Page

To create the JSP page for the Visiting Nurse Schedule sample JSP application:

- 1) Select File => New => Other...
- 2) In the Select panel:
  - a. Select **Web** in the left pane, and **Database Web Pages** in the right pane.
  - b. Click **Next >**.



- 3) In the Create Web Pages to Access a Database panel:
- Destination folder: /VNSchedule\_wsad40/webApplication
  - Uncheck the **Create Input Form** checkbox.
  - Uncheck the **Create Details Form** checkbox.
  - Click **Next >** twice.

The screenshot shows the 'Create Database Web Pages' wizard. The title bar reads 'Create Database Web Pages'. The main heading is 'Create Web Pages to Access a Database' with a subtext 'Create web pages that access and display database fields.' and a database icon. The 'Destination folder' is set to '/VNSchedule\_wsad40/webApplication'. The 'Java package' is empty. There are checkboxes for 'Use Style Sheet' and 'Use Error Page', both unchecked. Under 'Web Pages', there are checkboxes for 'Create Input Form' and 'Create Details Form', both unchecked. The 'Model' dropdown is set to 'View Bean'. Under 'Store results in', the 'Request' radio button is selected. At the bottom are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

**Create Database Web Pages**

**Create Web Pages to Access a Database**  
Create web pages that access and display database fields.

Destination folder: /VNSchedule\_wsad40/webApplication **Browse...**

Java package: **Browse...**

☐ Use Style Sheet: **Browse...**

☐ Use Error Page: **Browse...**

**Web Pages**

☐ Create Input Form

☐ Create Details Form

Model: View Bean

Store results in

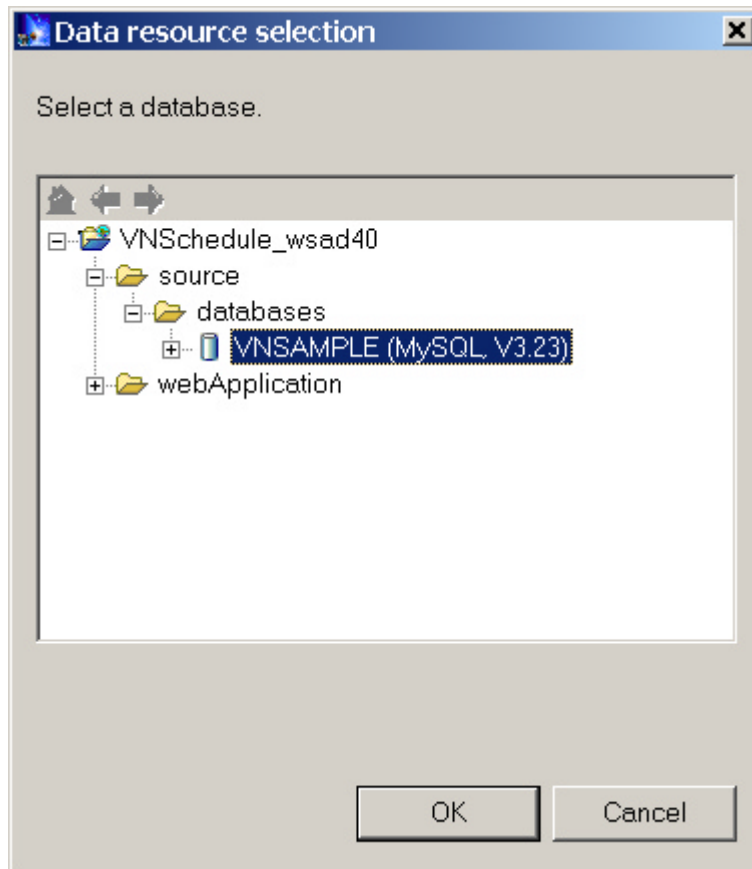
☒ Request

☐ Session

< Back   Next >   Finish   Cancel



- 4) In the Specify SQL statement information panel:
- Click on **Browse...** to select Database Model.
  - In the Data resource selection window, browse to **VNSchedule\_wsad40/source/databases/VNSAMPLE**. Click **OK**.
  - Click **Next >**.



- 5) In the Construct an SQL Statement panel:
- In the Tables tab: Select **VNPERSON** and **VNSCHEDULE**
  - In the Columns tab: Select **TIME\_C** from **VNSCHEDULE**, and **NAME**, **ADDRESS**, and **CITY** from **VNPERSON**
  - In the Joins tab: Specify condition **VNPERSON.ID = VNSCHEDULE.PATIENTID**
  - In the Order tab: Choose **VNSCHEDULE.TIME\_C** (ASC sort order)
  - Click **Next >**.

**Create Database Web Pages**

**Construct an SQL Statement**

Specify information on each tab to create the SQL statement. Press Next to see the generated statement.

Tables Columns Joins Conditions Groups Order

Choose the output columns to include in your SQL statement. You can add column expressions and specify an alias for your output columns.

Available columns

- VNPERSON
  - ID
  - NAME
  - ADDRESS
  - CITY
  - HOMEPHONE
  - WORKPHONE
  - MOBILEPHONE
- VNSCHEDULE
  - PATIENTID
  - TIME\_C

Selected columns

Column	Alias
TIME_C	
NAME	
ADDRESS	
CITY	

> >> < <<

Move Up Move Down Add... Change... Remove

☐ Show schema and table names

< Back Next > Finish Cancel

- 6) In the Work with the SQL statement panel:
- Review the SQL statement.
  - You may execute the SQL statement using the **Execute...** button.
  - Click **Next >**.

The screenshot shows a dialog box titled "Create Database Web Pages". Inside, there is a section titled "Work with the SQL statement" with a sub-header "You can edit then parse the statement. You can also execute the statement." and a small database icon. A large text area contains the following SQL query:

```
SELECT
  VNSCHEDULE.TIME_C,
  VNPERSON.NAME,
  VNPERSON.ADDRESS,
  VNPERSON.CITY
FROM
  VNPERSON, VNSCHEDULE
WHERE
  VNPERSON.ID = VNSCHEDULE.PATIENTID
ORDER BY
  TIME_C ASC
```

To the right of the text area are three buttons: "Execute...", "Parse", and "Reset". At the bottom of the dialog are four buttons: "< Back", "Next >", "Finish", and "Cancel".

- 7) In the Create Main Result Table Web Page panel:
- Edit the result table labels to display **TIME**, **NAME**, **ADDRESS**, and **CITY** respectively. Make sure to press **Enter** to save the changes. You will see the labels updated in the right pane.
  - Click **Next >**.

**Create Database Web Pages**

**Create Main Result Table Web Page**

Design the table which will display the results of the SQL query.

Result set columns

- ☒ VNSCHEDULE.TIME\_C
- ☒ VNPERSON.NAME
- ☒ VNPERSON.ADDRESS
- ☒ VNPERSON.CITY

Property	Value
ID	VNSCHEDULE_TIME_C
Label	TIME_C
Key Value	true
Column Width ...	Pixels
Column Width	20

Page

## Result Table

[Refresh](#)

TIME_C	VNPERSON.NAME	VNPERSON
Visible	Visible	Visible

- 8) In the Specify Front Controller and View Bean Choices panel:
- Select the **Do not use a Front Controller** radio button.
  - Uncheck the **Create View Bean(s) to wrapper your data object(s)** checkbox.
  - Click **Next >**.

The screenshot shows a Windows-style dialog box titled "Create Database Web Pages". Inside, the panel is titled "Specify Front Controller and View Bean Choices" with a subtitle "Choose from an existing Front Controller, create a new Front Controller or do not create one at all." and a database icon. There are three radio buttons: "Create a new Front Controller", "Choose an existing Front Controller" (which has an empty text field and a "Browse..." button next to it), and "Do not use a Front Controller" (which is selected). Below these is a checkbox labeled "Create View Bean(s) to wrapper your data object(s)" which is unchecked. At the bottom are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Create Database Web Pages

**Specify Front Controller and View Bean Choices**

Choose from an existing Front Controller, create a new Front Controller or do not create one at all.

☐ Create a new Front Controller

☐ Choose an existing Front Controller

☒ Do not use a Front Controller

☐ Create View Bean(s) to wrapper your data object(s)

< Back   Next >   Finish   Cancel

- 9) In the Specify Prefix panel:
- Prefix: schedule
  - Click **Finish**.

**Create Database Web Pages**

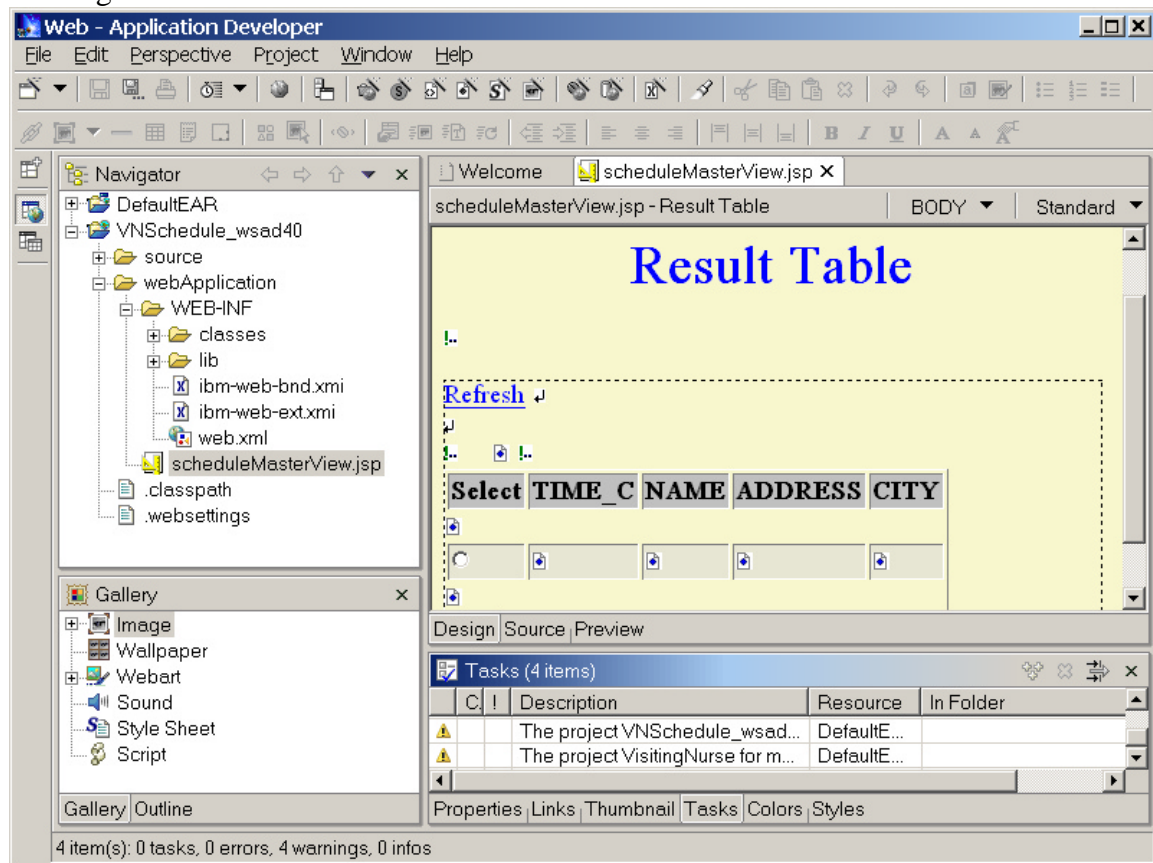
**Specify Prefix**  
Specify the Prefix to use on the generated files.

Prefix:

File Description	File Names
Master View	scheduleMasterView.jsp

< Back   Next >   Finish   Cancel

The scheduleMasterView.jsp file now appears under VNSchedule\_wsad40/webApplication in the Navigator View in the Web Perspective. The generated JSP page can be edited in Page Designer in WebSphere Studio by double-clicking on the JSP file.



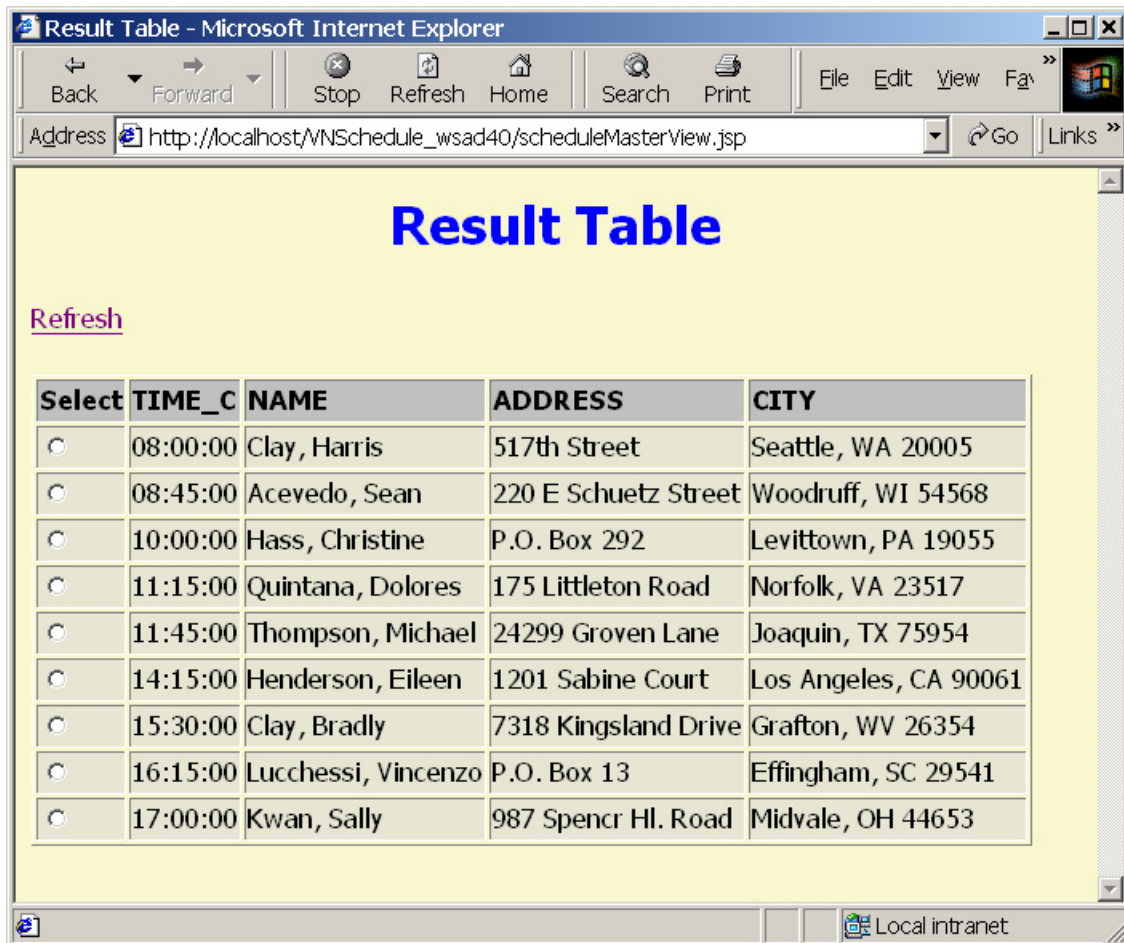
## View the JavaServer Page

Refer to <DB2Everyplace>\SDK\JSP\doc\readme.txt for how to run the JSP page. The project files you will need are under the

<DB2Everyplace>\SDK\JSP\Win32\VNSchedule\_wsad40\webApplication directory:

- \scheduleMasterView.jsp
- \WEB-INF\web.xml
- \WEB-INF\lib\dbbeans.jar

The diagram below shows the result of viewing scheduleMasterView.jsp in a Web browser using the DB2 Everyplace mini HTTP Web server.



Result Table - Microsoft Internet Explorer

Address: http://localhost/VNSchedule\_wsad40/scheduleMasterView.jsp

**Result Table**

[Refresh](#)

Select	TIME_C	NAME	ADDRESS	CITY
<input type="radio"/>	08:00:00	Clay, Harris	517th Street	Seattle, WA 20005
<input type="radio"/>	08:45:00	Acevedo, Sean	220 E Schuetz Street	Woodruff, WI 54568
<input type="radio"/>	10:00:00	Hass, Christine	P.O. Box 292	Levittown, PA 19055
<input type="radio"/>	11:15:00	Quintana, Dolores	175 Littleton Road	Norfolk, VA 23517
<input type="radio"/>	11:45:00	Thompson, Michael	24299 Groven Lane	Joaquin, TX 75954
<input type="radio"/>	14:15:00	Henderson, Eileen	1201 Sabine Court	Los Angeles, CA 90061
<input type="radio"/>	15:30:00	Clay, Bradly	7318 Kingsland Drive	Grafton, WV 26354
<input type="radio"/>	16:15:00	Lucchessi, Vincenzo	P.O. Box 13	Effingham, SC 29541
<input type="radio"/>	17:00:00	Kwan, Sally	987 Spencr Hl. Road	Midvale, OH 44653

Local intranet