

Developing DB2 Everyplace JSP Applications using WebSphere Studio Professional/Entry Edition v4.0

© 2002 International Business Machines Corporation. All Rights Reserved.

Abstract

This document describes how to generate JavaServer Pages (JSP) that access DB2 Everyplace databases using WebSphere Studio Professional/Entry Edition. A detailed step-by-step description of how to use WebSphere Studio's SQL Wizard and Database Wizard to connect 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 Professional/Entry Edition

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

- DB2 Everyplace v8.1 (<http://www.ibm.com/software/data/db2/everyplace/>)
- WebSphere Studio Professional/Entry Edition v4.0 (<http://www.ibm.com/software/webservers/studio/>)

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 Professional/Entry Edition

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 Professional Edition reduces time and effort when creating, managing and debugging multiplatform Web applications. An evaluation copy can be downloaded from the Web site above (navigate to the Downloads page and look for WebSphere Studio Entry Edition).

Running WebSphere Studio Professional/Entry Edition

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.

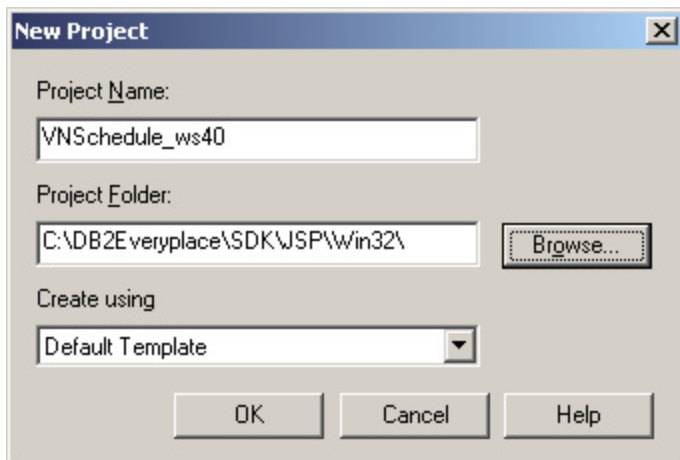
Sample DB2 Everyplace JSP Application: Visiting Nurse Schedule

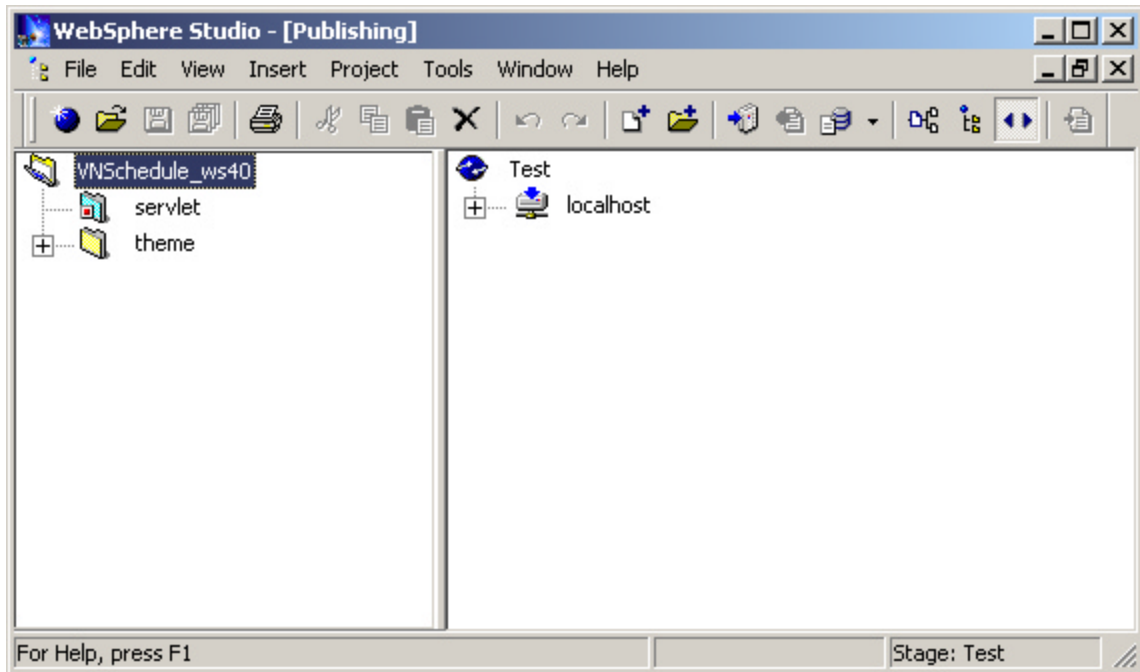
The example that follows describes how to create the Visiting Nurse Schedule sample (in the <DB2Everyplace>\SDK\JSP\sample\jsp\VNSchedule_ws40 directory).

Create a New Project

Follow the steps below to create a new project:

- 1) File => New Project...
- 2) Project Name: VNSchedule_ws40
- 3) Project Folder: <DB2Everyplace>\SDK\JSP\Win32\
- 4) Click **OK**.



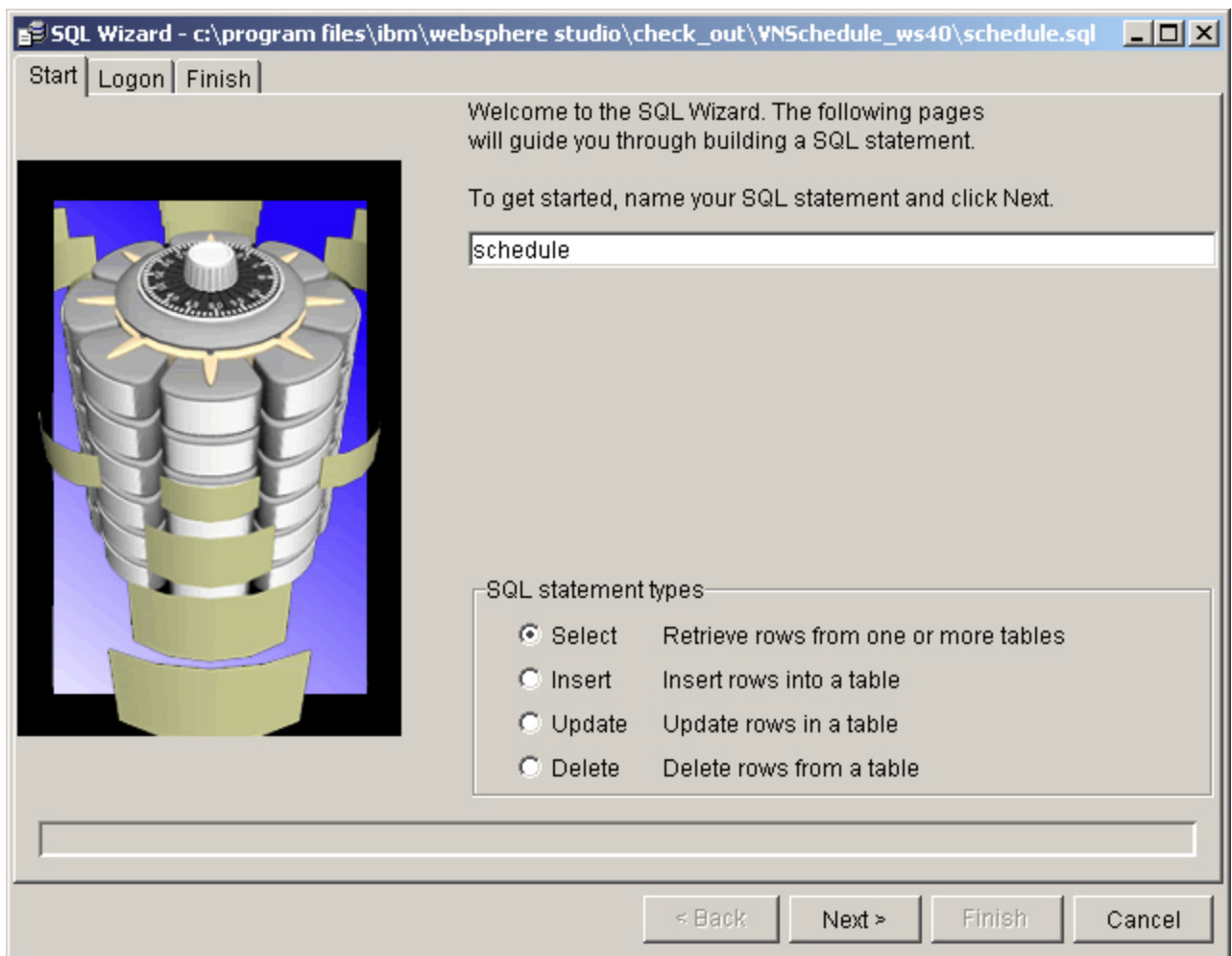


Using SQL Wizard

SQL Wizard is part of WebSphere Studio Professional/Entry Edition. It provides a visual interface for creating and executing a SQL statement. It can be used to create a simple query or wider range of statements without typing in any SQL.

To build the SQL statement for the Visiting Nurse Schedule sample JSP application using SQL Wizard:

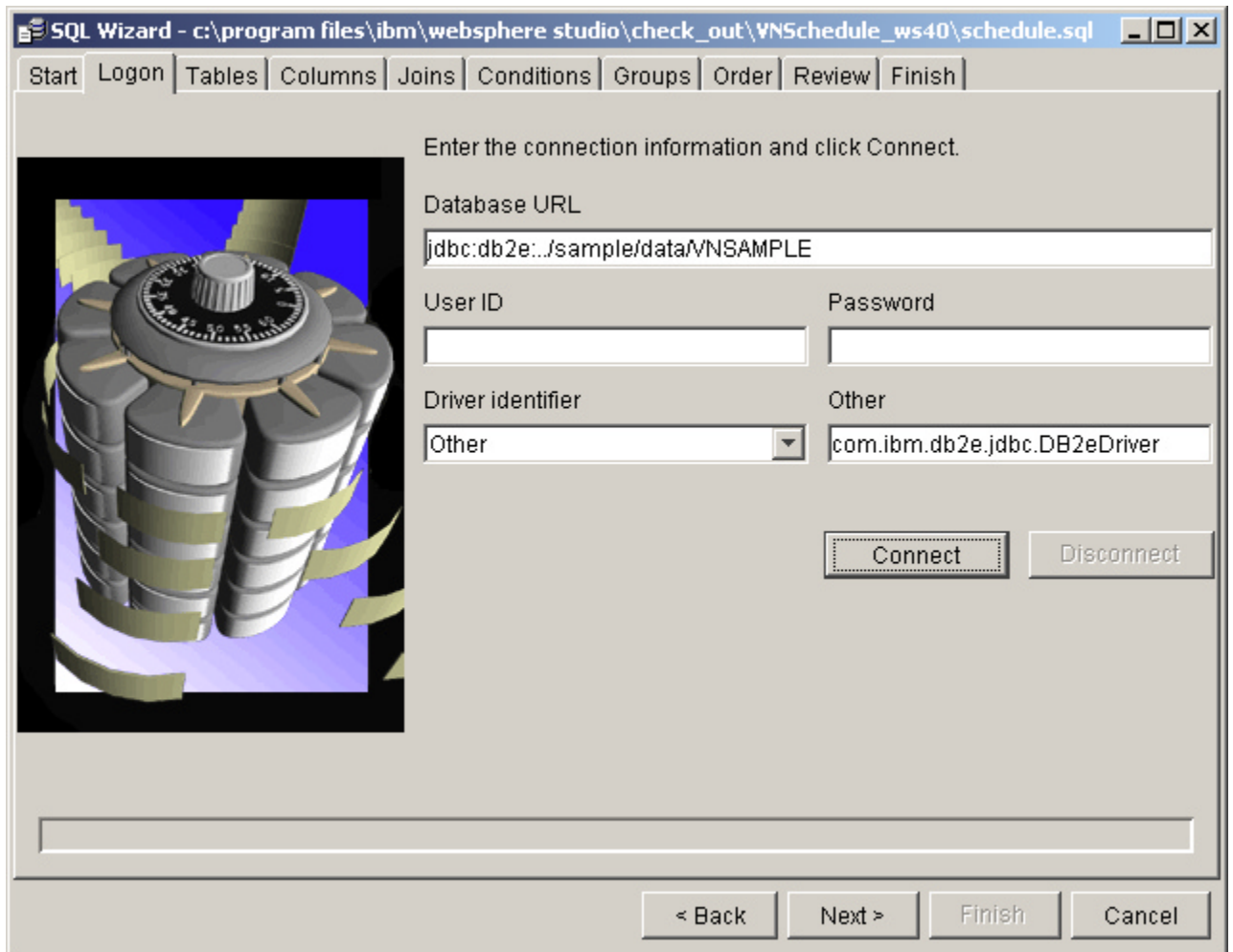
- 1) Start SQL Wizard by selecting VNSchedule_ws40 in the WebSphere Studio project window and then clicking on Tools => Wizards => SQL Wizard.
- 2) In the Start tab:
 - a. Name your SQL statement: schedule
 - b. Click **Next** >.



Connect to DB2 Everyplace Database

- 3) In the Logon tab:
 - a. Database URL: jdbc:db2e:../sample/data/VNSAMPLE
 - b. Driver identifier: Other
 - c. Other: com.ibm.db2e.jdbc.DB2eDriver
 - d. Click **Connect**.

A list of tables for the Visiting Nurse database will be displayed in the Tables tab.
If an error occurs, make sure you have completed the steps in the "Setting up DB2 Everyplace environment" section above.

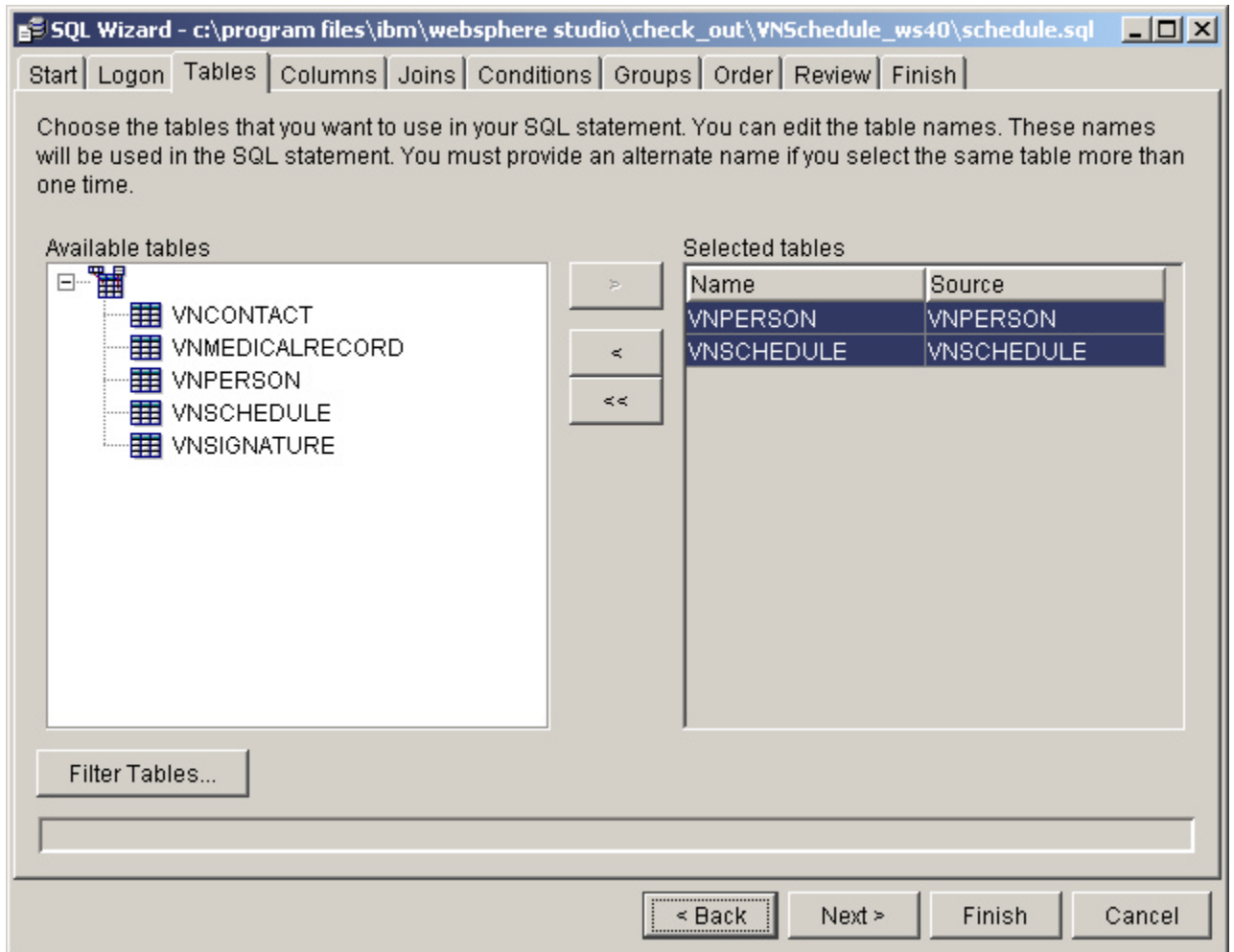


The screenshot shows the 'SQL Wizard' window, specifically the 'Logon' tab. The window title is 'SQL Wizard - c:\program files\ibm\websphere studio\check_out\VNSchedule_ws40\schedule.sql'. The tabs at the top are 'Start', 'Logon', 'Tables', 'Columns', 'Joins', 'Conditions', 'Groups', 'Order', 'Review', and 'Finish'. The 'Logon' tab is active. On the left, there is a 3D graphic of a database cylinder. The main area contains the following fields and buttons:

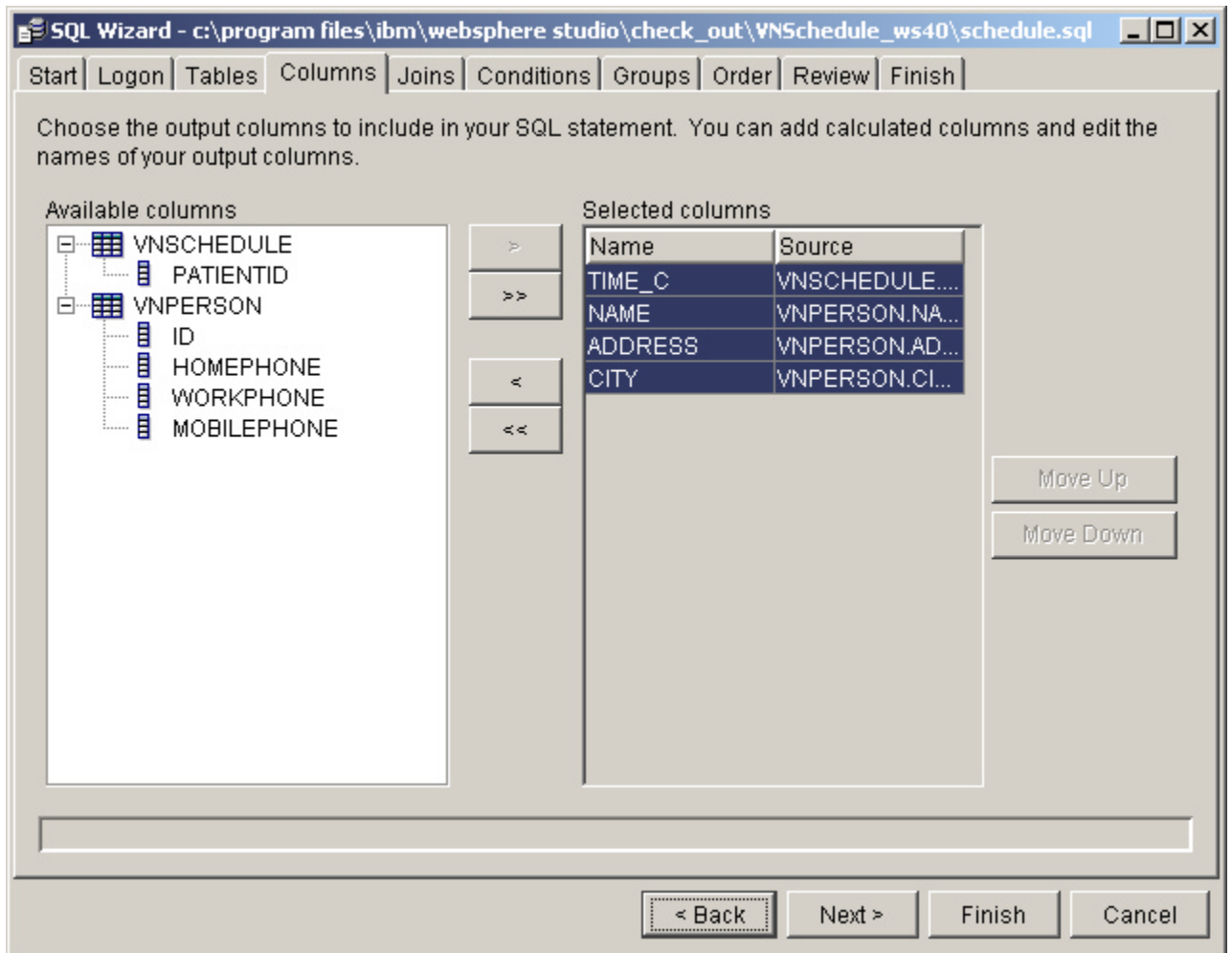
- Text: 'Enter the connection information and click Connect.'
- Database URL:
- User ID:
- Password:
- Driver identifier: (dropdown menu)
- Other:
- Buttons: 'Connect' and 'Disconnect' (disabled)

At the bottom, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

- 4) In the Tables tab:
 - a. Select **VNPERSON** and **VNSCHEDULE**.
 - b. Click on > to move the tables from the Available tables pane to the Selected tables pane.
 - c. Click **Next >**.



- 5) In the Columns tab:
- Select **TIME_C** from the **VNSCHEDULE** table.
 - Select **NAME**, **ADDRESS**, and **CITY** from the **VNPERSON** table.
 - Click on > to move the columns from the Available columns pane to the Selected columns pane.
 - Click **Next >**.



- 6) In the Joins tab:
- Select **PATIENTID** from the **VNSCHEDULE** table.
 - Select **ID** from the **VNPERSON** table.
 - Click **Join**.
 - Click **Next >** three times.

The screenshot shows the 'SQL Wizard' window with the 'Joins' tab selected. The window title is 'SQL Wizard - c:\program files\ibm\websphere studio\check_out\VNSchedule_ws40\schedule.sql'. The tabs at the top are: Start, Logon, Tables, Columns, Joins, Conditions, Groups, Order, Review, Finish. The main area contains the text 'Specify the join conditions that will be used to join tables.' Below this, there are two table lists. On the left, the 'VNSCHEDULE' table is listed with columns: PATIENTID, TIME_C. On the right, the 'VNPERSON' table is listed with columns: ID, NAME, ADDRESS, CITY, HOMEPHONE, WORKPHONE, MOBILEPHONE. A green line connects 'PATIENTID' in the VNSCHEDULE table to 'ID' in the VNPERSON table. To the right of the table lists are three buttons: 'Join', '<', and '>'. Below these is an 'Unjoin' button. At the bottom of the main area, there is a text box containing the text: 'Inner join: Includes only rows from VNPERSON and VNSCHEDULE where the joined columns are equal.' At the very bottom of the window are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

SQL Wizard - c:\program files\ibm\websphere studio\check_out\VNSchedule_ws40\schedule.sql

Start | Logon | Tables | Columns | Joins | Conditions | Groups | Order | Review | Finish

Specify the join conditions that will be used to join tables.

VNSCHEDULE

- PATIENTID
- TIME_C

VNPERSON

- ID
- NAME
- ADDRESS
- CITY
- HOMEPHONE
- WORKPHONE
- MOBILEPHONE

Join

< >

Unjoin

Inner join: Includes only rows from VNPERSON and VNSCHEDULE where the joined columns are equal.

< Back Next > Finish Cancel

- 7) In the Order tab:
 - a. Select **TIME_C**.
 - b. Click on > to move the column from the Available columns pane to the Selected columns pane. Use the default sort order (ascending).
 - c. Click **Next >**.

SQL Wizard - c:\program files\ibm\websphere studio\check_out\VNSchedule_ws40\schedule.sql

Start | Logon | Tables | Columns | Joins | Conditions | Groups | **Order** | Review | Finish

Choose the columns that will be used to order the rows in the output table. For each column, you can specify the sort direction.

Available columns

- NAME
- ADDRESS
- CITY

Selected columns

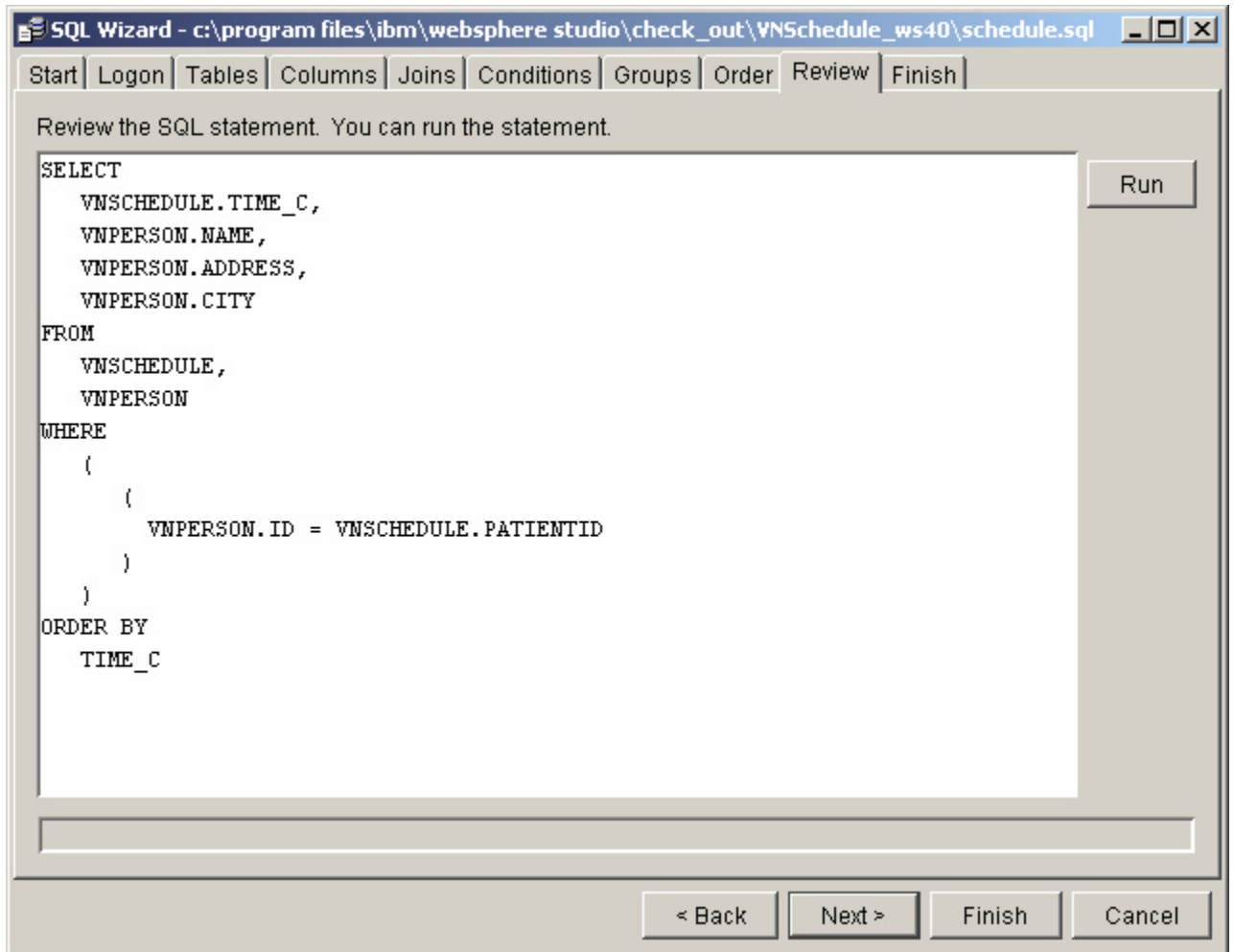
Order	Name	Source
↑	TIME_C	VNSCHE

Buttons: > >> < << Move Up Move Down

☒ Display output columns only
☐ Display all available columns

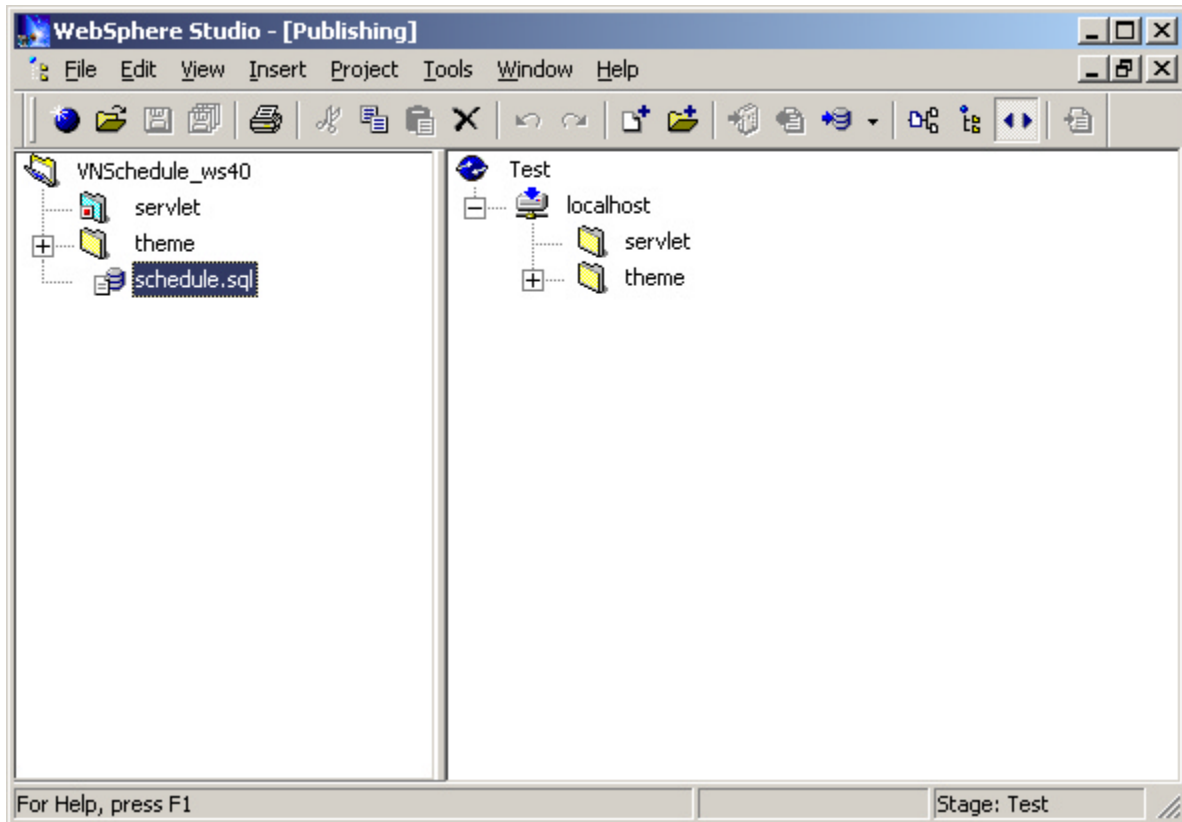
< Back Next > Finish Cancel

- 8) In the Review tab:
- Review the SQL statement.
 - If necessary, modifications can be made by clicking on the desired tab and making the desired changes.
 - Click **Next >**.



- 9) In the Finish tab:
a. Click **Finish**.

The schedule.sql file now appears under VNSchedule_ws40 in the WebSphere Studio window.

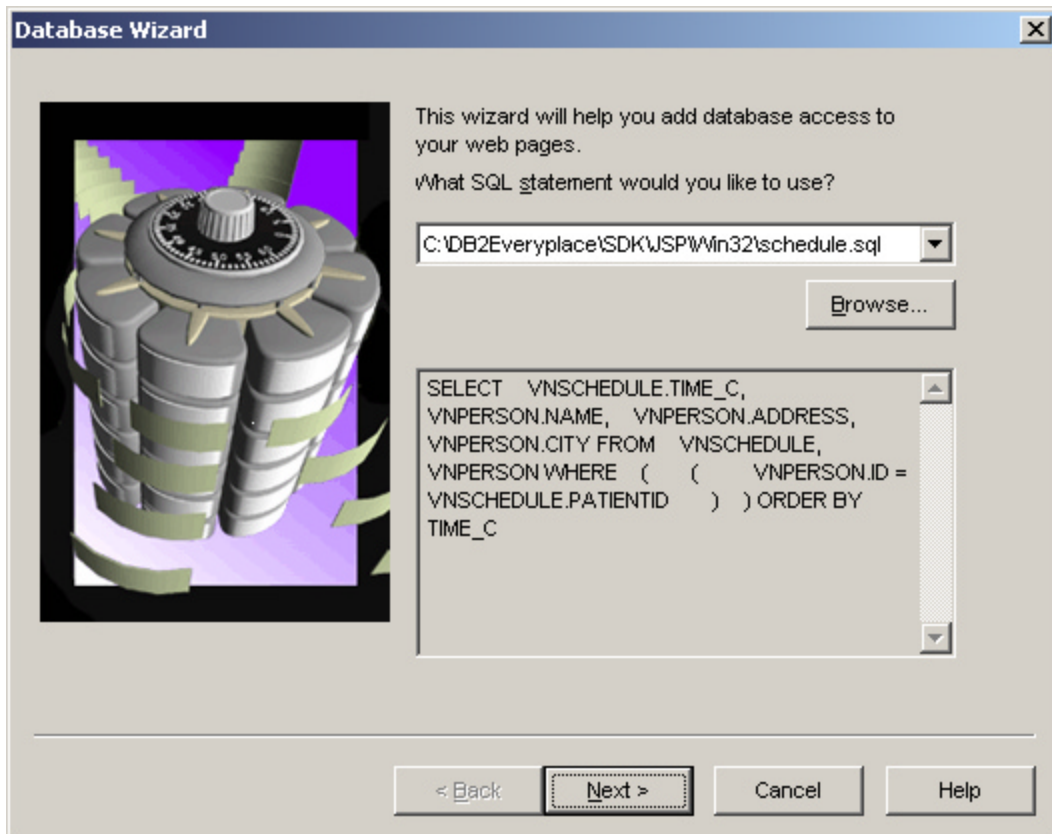


Using Database Wizard

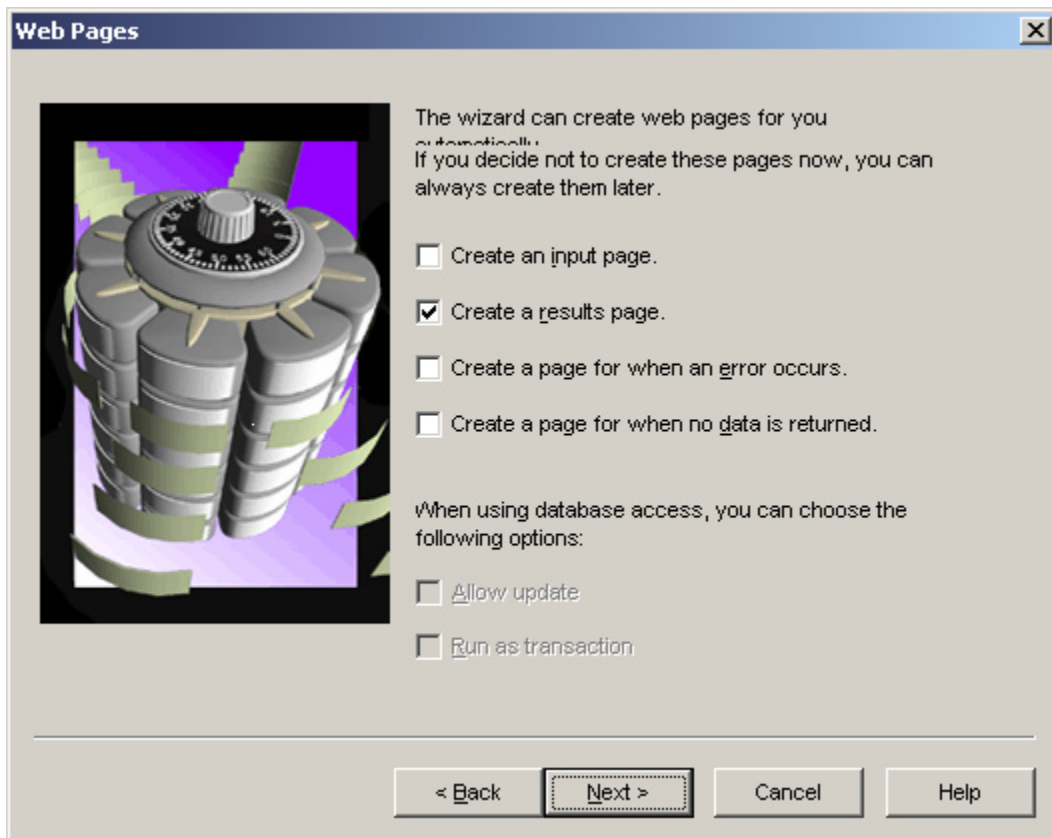
Database Wizard is also part of WebSphere Studio. It creates a data bean, which adds database access to Web pages. It takes a SQL statement that was created using SQL Wizard, and generates HTML or JSP output for the SQL statement.

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

- 1) Start Database Wizard by selecting VNSchedule_ws40 in the WebSphere Studio project window, and then clicking on Tools => Wizards => Database Wizard.
- 2) In the Database Wizard window:
 - a. SQL statement to use: <DB2Everyplace>\SDK\JSP\Win32\schedule.sql
 - b. Click **Next >** twice.



- 3) In the Web Pages window:
 - a. Uncheck the **Create an input page** checkbox.
 - b. Click **Next >**.



- 4) In the Results Page window:
 - a. Select the **TIME_C** field
 - b. Click **Change...**
 - c. Caption: `TIME`
 - d. Click **OK**
 - e. Click **Next >** twice.

Results Page

Check the fields you want to display on your results page. You can also change the settings for each field and reorder the fields.

Name	Type	Caption	Signature
<input checked="" type="checkbox"/> TIME_C	java.lang.String	TIME	getTime_C(int)
<input checked="" type="checkbox"/> NAME	java.lang.String	NAME	getName(int)
<input checked="" type="checkbox"/> ADDRESS	java.lang.String	ADDRESS	getADDRESS(int)
<input checked="" type="checkbox"/> CITY	java.lang.String	CITY	getCITY(int)
<input type="checkbox"/> driver	java.lang.String	driver	
<input type="checkbox"/> SQL statement	java.lang.String	SQL statement	
<input type="checkbox"/> URL	java.lang.String	URL	
<input type="checkbox"/> userID	java.lang.String	userID	

Change... Check All Uncheck All


How would you like to format the data? ☒ Table ☐ List

☐ Limit number of records on a page to

< Back Next > Cancel Help

- 5) In the Session window:
- Rename the query/bean `scheduledDBBean`.
 - Click **Next >**.

Session [X]



Will you use this bean or query on more than one page?

☐ Yes, store it in the user's session

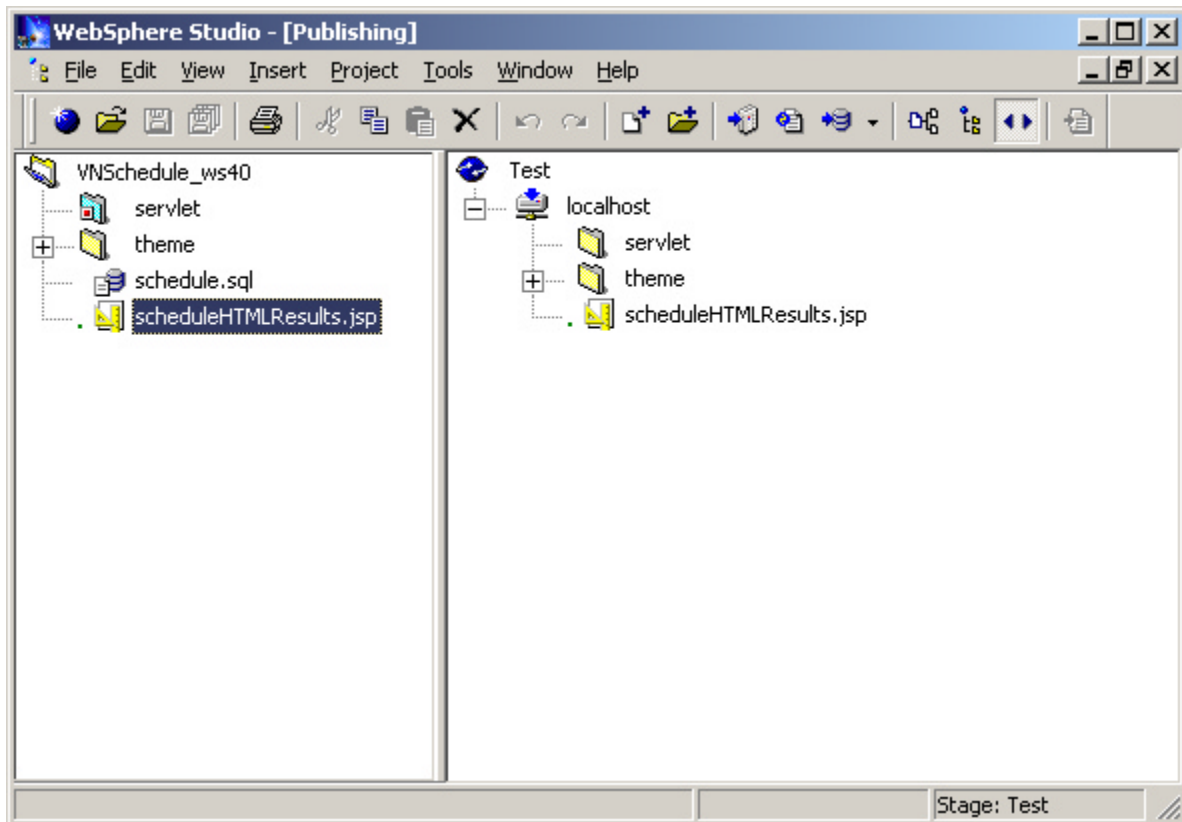
☒ No

When using the same bean or query on more than one page, you should use the same name for it on every page. What name would you like to use?

< Back **Next >** Cancel Help

- 6) In the Finish window:
 - a. Select **Results Page**
 - b. Click **Rename...**
 - c. Prefix: `schedule`
 - d. Click **OK**
 - e. Click **Finish**.

The `scheduleHTMLResults.jsp` file now appears under `VNSchedule_ws40` in the WebSphere Studio window. The generated JSP page can be edited in Page Designer in WebSphere Studio by double-clicking on the JSP file.

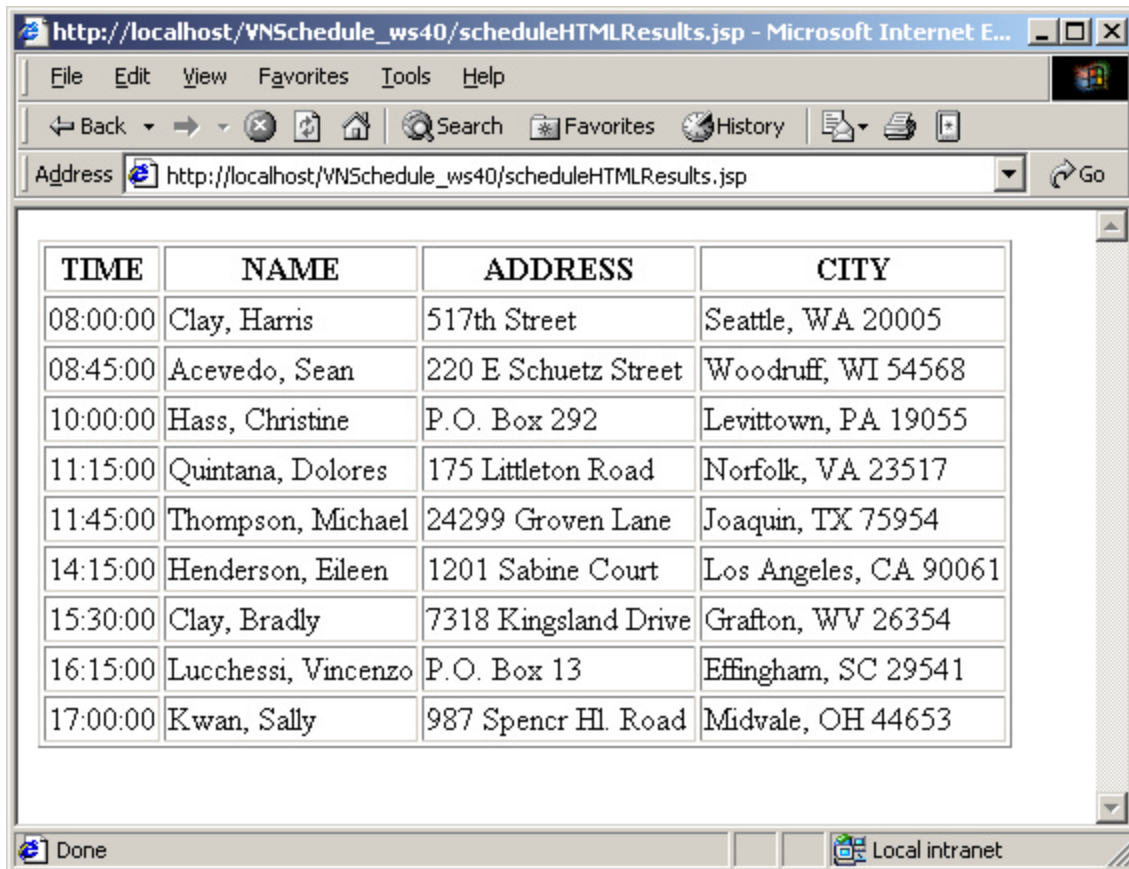


View the JavaServer Page

Refer to <DB2Everyplace>\SDK\JSP\doc\readme.txt for how to run the JSP page. The project file you will need is:

<DB2Everyplace>\SDK\JSP\Win32\scheduleHTMLResults.jsp

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



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