WOW Walkthrough

* WOW TUTORIAL *

Creating WOW Applications

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1

Purpose

This document describes how to create a sample Web-based DataEngine Application using the Web Object Wizard.

Introduction

DataEngine

A DataEngine Application uses the PlanetJ DataEngine to simplify its data access and data display. The DataEngine implements common patterns for accessing data in a database and for formatting and displaying the data to the user. Using the DataEngine allows application designers to focus on the portions unique to that application instead of having to deal with the same data access/data presentation issues common to the majority of data-centric applications.

Web Object Wizard

The Web Object Wizard (WOW) is a web-based tool for creating DataEngine Applications. Using the WOW many data-centric applications can be created without any coding. For more complex applications, the WOW can provide a base functionality, which can be further customized by application designers.

Sample Application

The sample application that will be built in this tutorial will allow the user to search a database for employee information. The information is stored in the EMPLOYEE table in the PJDATA schema. To complete this tutorial, you will have to use the table in the below screen shot. If running WOW locally and not from the PlanetJ Website or locally referencing the shared connection provided by PlanetJ then you need to create these files on your server. A stored procedure is shipped as part of the system that contains the DDL statements to create all of these tables, and the INSERT statements to populate them. The procedure will create the schema specified on the call to the procedure. Since this is an SQL external

stored procedure, it can be called from any SQL interface, including interactive SQL and iSeries Navigator. To invoke the procedure where *PJDATA* is the schema you wish to create, issue the following statement:

```
CALL QSYS.CREATE_SQL_SAMPLE ('PJDATA')
```

Run this SQL Statement and then a schema called PJDATA with the employees table and many more various test files will be created.

EMPNO	FIRSTNME	MIDINIT	LASTNAME	WORKDEPT	PHONENO	HIREDATE	JOB	EDLEVEL	SEX	BIRTHDATE	SALARY	BONUS	COMM
000010	CHRISTINE	I	Haas	A00	3978	1965-01-01	PRES	18	F	1933-08-24	515.00	1000.00	4220.00
000020	MICHAEL	L	THOMPSON	B01	3476	1973-10-10	MANAGER	18	F	2002-10-02	41250.00	800.00	3300.00
000030	SALLY	A	KWAN	C01	4738	1975-04-05	MANAGER	20	F	1941-05-11	38250.00	800.00	3060.00
000050	JOHN	B	GEYER	E01	6789	1949-08-17	MANAGER	16	M	1925-09-15	40175.00	800.00	3214.00
000060	IRVING	F	STERN	D11	6423	1973-09-14	MANAGER	16	M	1945-07-07	32250.00	500.00	2580.00
000070	EVA	D	PULASKI	D21	7831	1980-09-30	MANAGER	16	F	1953-05-26	36170.00	700.00	2893.00
000090	EILEEN	W	HENDERS...	A11	5498	1970-08-15	MANAGER	16	F	1941-05-15	29750.00	600.00	2380.00
000100	THEODORE	Q	SPENSER	E21	0972	1980-06-19	MANAGER	14	M	1956-12-18	26150.00	500.00	2092.00
000110	VINCENZO	G	LUCCHESSI	A00	3490	1958-05-16	SALESREP	19	M	1929-11-05	46500.00	900.00	3720.00
000120	SEAN	r	O'CONNELL	A00	2167	1963-12-05	CLERK	14	M	1942-10-18	29250.00	600.00	2340.00
000130	DOLORES	M	QUINTANA	C01	4578	1971-07-28	ANALYST	16	F	1925-09-15	23800.00	500.00	1904.00
000140	HEATHER	A	NICHOLLS	C01	1793	1976-12-15	ANALYST	18	F	1946-01-19	28420.00	600.00	2274.00
000150	BRUCE		ADAMSON	D11	4510	1972-02-12	DESIGNER	16	M	1947-05-17	25280.00	500.00	2022.00
000160	ELIZABETH	R	PIANKA	D11	3782	1977-10-11	DESIGNER	17	F	1955-04-12	22250.00	400.00	1780.00
000170	MASATOSHI	J	YOSHIMURA	D11	2890	1978-09-15	DESIGNER	16	M	1951-01-05	24680.00	500.00	1974.00
000180	MARILYN	S	SCOUTTEN	D11	1682	1973-07-07	DESIGNER	17	F	1949-02-21	21340.00	500.00	1707.00
000190	JAMES	H	WALKER	D11	2986	1974-07-26	DESIGNER	16	M	1952-06-25	20450.00	400.00	1636.00
000200	PHIL		CO	D11	4501	1966-03-03	DESIGNER	16	M	1941-05-29	27740.00	600.00	2217.00
000210	WILLIAM	T	JONES	D11	0942	1979-04-11	DESIGNER	17	M	1953-02-23	18270.00	400.00	1462.00
000220	JENNIFER	K	LUTZ	D11	0672	1968-08-29	DESIGNER	18	F	1948-03-19	29840.00	600.00	2387.00
000230	JAMES	J	JEFFERSON	D21	2094	1966-11-21	CLERK	14	M	1935-05-30	22180.00	400.00	1774.00
000240	SALVATORE	M	MARINO	D21	3780	1979-12-05	CLERK	17	M	1954-03-31	28760.00	600.00	2301.00

Chapter

2

Building the Application

This section describes how to define a DataEngine Application using the WOW

Starting WOW

There are two ways in which to start the WOW.

1) You can install the WOW on your system and run locally but Tomcat server must be running first: From your machine type: http://localhost/wow60/WOWBuilder

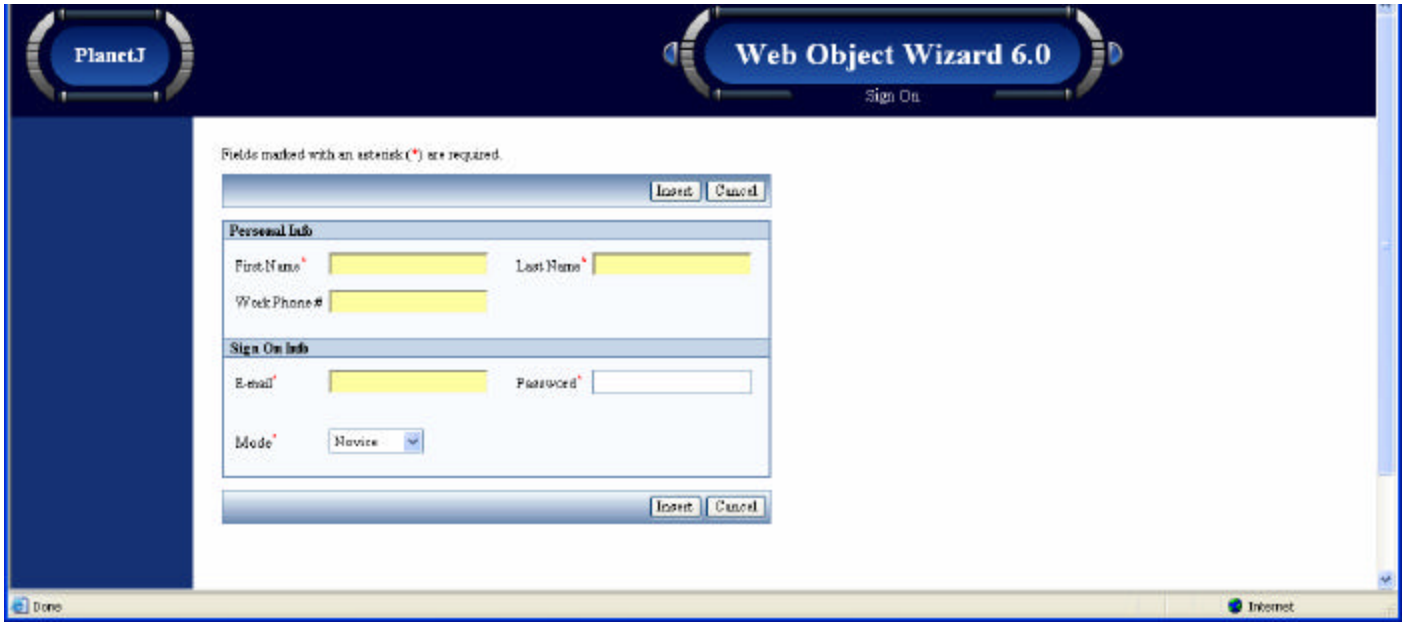
NOTE: If you want to run WOW locally and have not installed WOW please download WOW from website and then follow the WOW Installation Guide exactly.

Or

2) You may access the WOW through PlanetJ's Website. Type:
http://www.planetjavainc.com/wow60/wow

Once you have started WOW, you will see the sign-on screen in your browser:

If you have already registered, enter your email address and password to login. If you have not registered yet, click the "Sign Up Now" button to go to the registration screen:



Required fields on the registration screen are indicated with a red asterisk. After you have entered your information, click the insert button to store your new registration into the database. You can now login using the email address and password you specified in the registration information.

Creating a Connection Definition

After signing on, you should see the main screen of the WOW:

Before creating an application, you need to first define a database connection that your application will use.

If using the WOW from the PlanetJ site, you may skip this step and proceed to step two shown by the blue setup connection button in the middle of the screen.

If you are running the WOW locally, you will need to setup your connection now. We have provided a connection that you can use for this example with the libraries and tables needed. It will show up with a star in front of name when showing connections. If you are creating your own applications you will need to create your own connection to a database. This process is described below.

Click on the “1 Setup Connection(s)” link along the top to view a list of all the database connections that you have defined. Unless you have already defined a connection, this screen will be blank. Click the “insert” button to create a new connection definition:

To define a database connection, you will have to specify the following attributes:

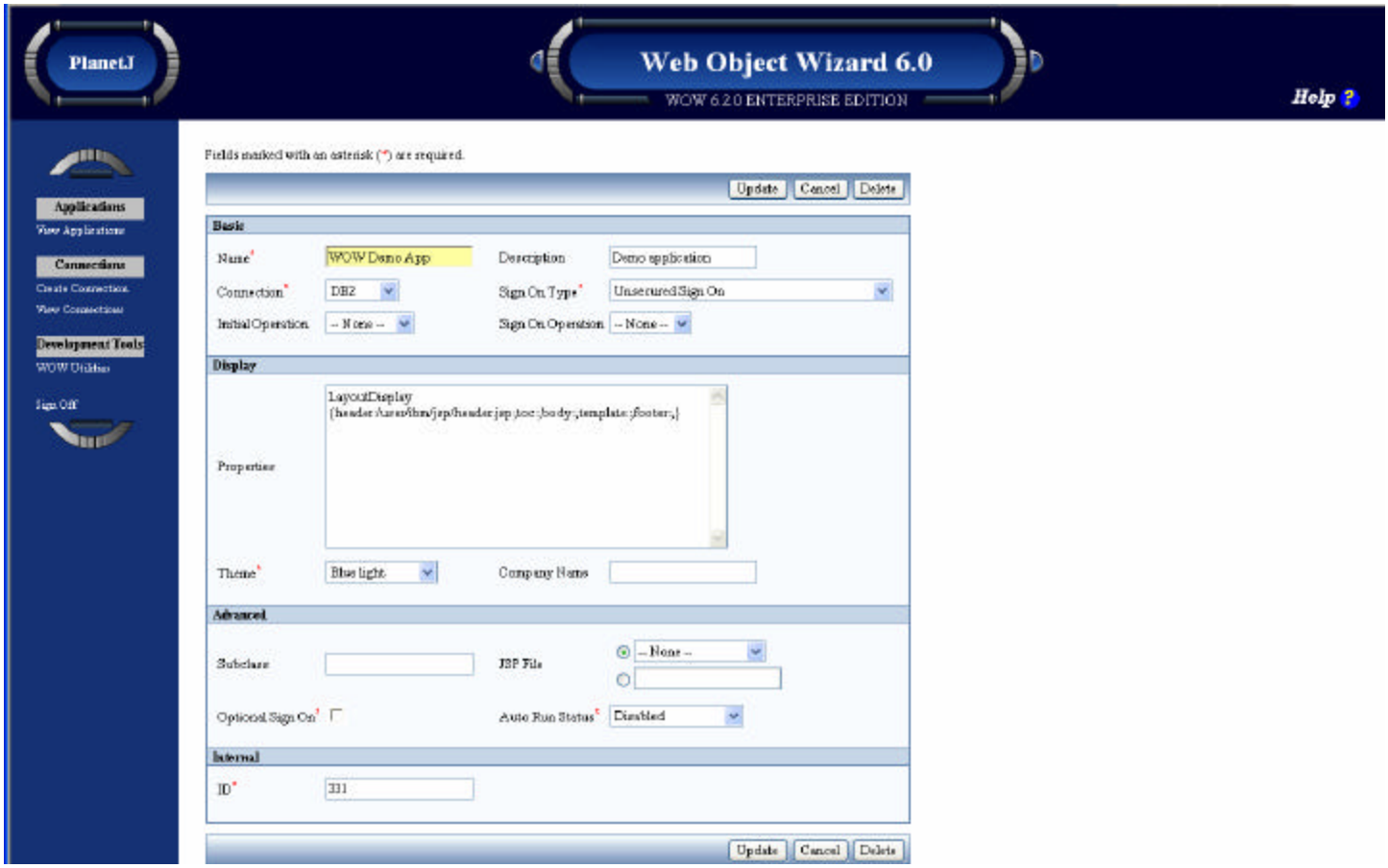
- **Connection Alias** – Any text uniquely identifying this database connection
- **URL** – The JDBC URL of the database to connect to
- **JDBC Driver** – The type of JDBC driver to use
- **User ID** – The user ID to use when connecting to the database
- **Password** – The password to use when connecting to the database

In the above screen shot, we are connecting to a database located on an AS/400 named “sample”, and giving this connection an alias of “DB2” (connection aliases are not case sensitive). **You should use a different, unique connection alias.** You also have to enter in a URL, JDBC Driver, User ID, and Password specific to the system you are connecting to. You can leave all the other attributes at their default values. When you are done, click the “insert” button to save the new connection definition. This will return you to a listing of all the connection definitions you have created, which will now include the newly created connection definition.

Now, select your new connection from the list and choose the "Verify Connection" menu option from the TOC to test it. The Web Application Builder will attempt to connect to the database using the information specified in the connection definition, and display a message letting you know if it was successful.

Defining the Application

After creating a connection definition, select the "2 Setup Application(s)" link along the top of the page. This will display all the applications you have created. To insert a new application, click the "Create Application" menu item. This brings up the Application Creation screen:



This screen allows you to enter information, which will define your application. The properties of a DataEngine Application include:

- **Name** – The name of the application
- **Description** – A description of the application
- **Connection Alias** – An alias for the system on which the application's data will be kept. This must be one of the connection definitions that you have created
- **Sign On Type** – The type of sign-on security that the application will use
- **Initial SQL Operation**: The type of operation the application should display initially (this will be covered in more detail later)
- **Theme** – The display theme that the application will use. The display theme determines the background colors and images that your application will use

There are additional advanced application properties that are beyond the scope of this tutorial.

*It is only necessary to fill in three of the fields: name, description, and connection alias. After filling in the values as shown above, click the insert button, and then the cancel button to return to the main WOW screen. The application you just defined should be listed in the view of all applications:

Adding an SQL Operation to the Sample Application

A DataEngine Application contains one or more operations. Although the WOW can create various operations, in our demonstration, we will focus on producing SQL operations. By using SQL, we can create various operations in our application. For our sample application, we want to retrieve data from the EMPLOYEE table.

To add an SQL operation to the application you just created, select the application, and click on the "Set up Operations" link along the top. This brings up a list of all the operations in the application. (Since the application was just created, it won't contain any operations.) Choose the "Create an Operation" menu item to create a new SQL Operation.

The Create Operation screen allows you to specify the attributes of an SQL Operation. When it first appears it will contain several default values:

The attributes of an operation include:

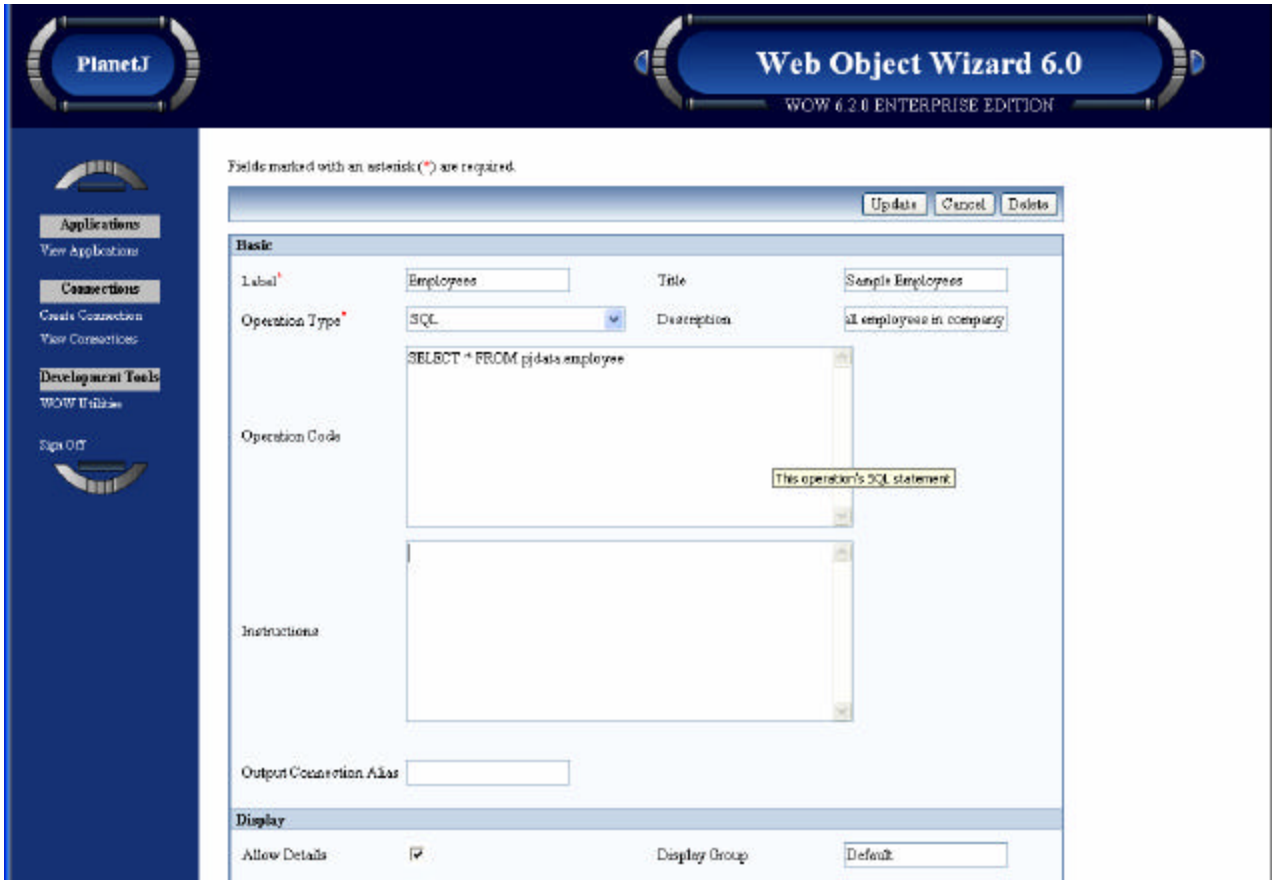
- **Label** – Text that identifies this operation when the user is viewing a list operations
- **Title** – The title that will be displayed when the user is viewing the operation
- **Operation Type** – Type of operation you want to create. (SQL is most common and used in this example but there are many more described in the builder's guide)
- **Description** – A description of the operation
- **Operation Code** – The statement that will be run when the user selects this operation
- **Instructions** – Text that will be shown to the user when the user runs this operation

For this example we only need to fill in 4 additional fields. For the label field enter "Employees By Department". This is the text that will link to this SQL Operation when the user is running the application. For the title field enter "Employees", and for the description enter "Get all employees in company".

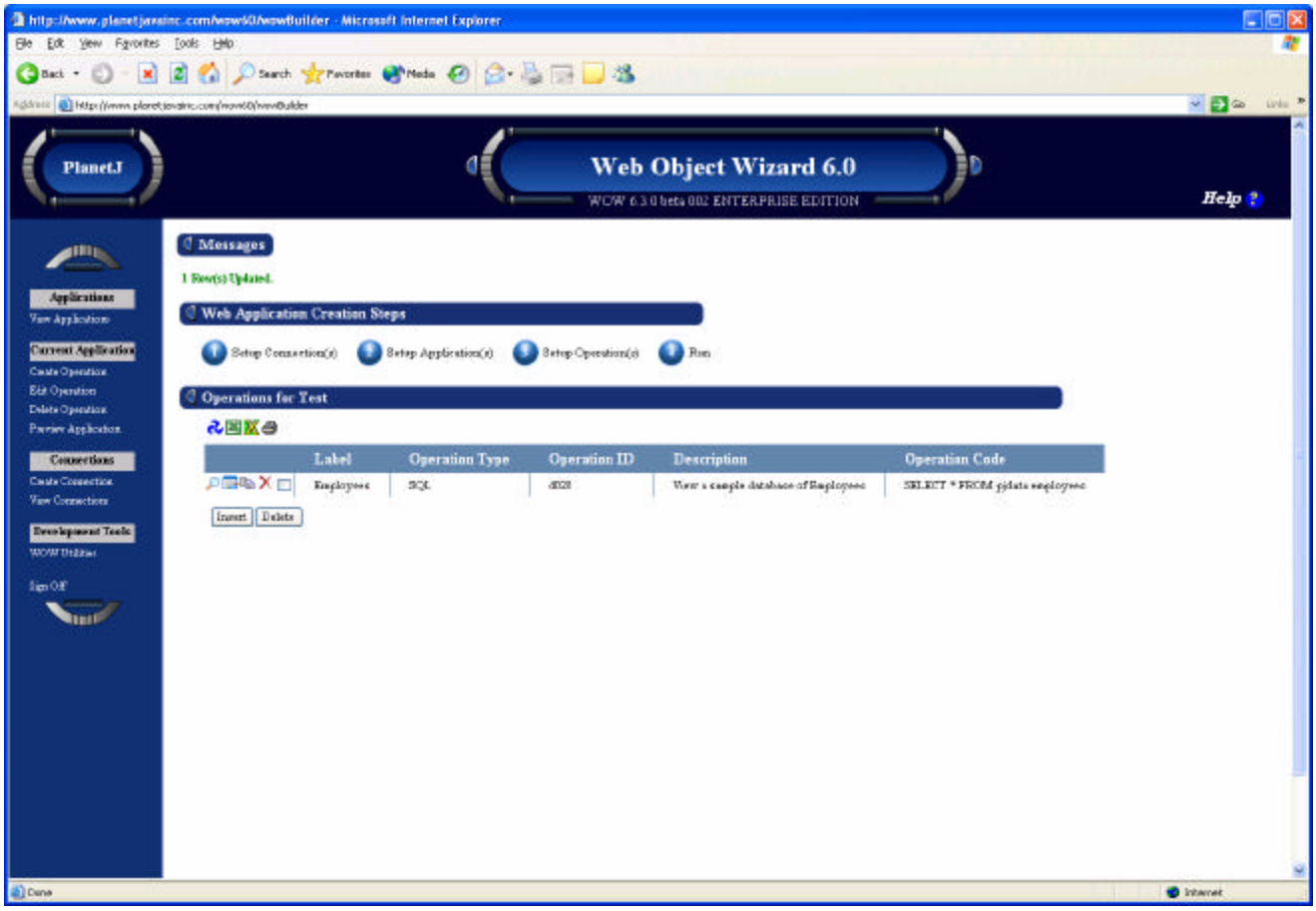
For the SQL field enter the SQL statement

SELECT * pjdata.employee

This will select all of the fields and employees from the employee table. The sample SQL statement is fairly simple, but you could also enter a more complex statement with more than one parameter if you chose to. This is what the screen should look like after entering in the values:



Click insert and that's it – the sample DataEngine Application is complete with an operation shown below.


http://www.planetjavainc.com/wow60/wowBuilder - Microsoft Internet Explorer
File Edit View Favorites Tools Help
PlanetJ
Web Object Wizard 6.0
WOW 6.3.0 beta 002 ENTERPRISE EDITION
Help
Messages
1 Row(s) Updated.
Web Application Creation Steps
Setup Connection(s)
Setup Application(s)
Setup Operation(s)
Run
Operations for Test
Label
Operation Type
Operation ID
Description
Operation Code
Employees
SQL
Insert
Delete
Applications
View Applications
Current Application
Create Operation
Edit Operation
Delete Operation
Preview Application
Connections
Create Connection
View Connections
Development Tools
WOW Utilities
Sign Off

Chapter

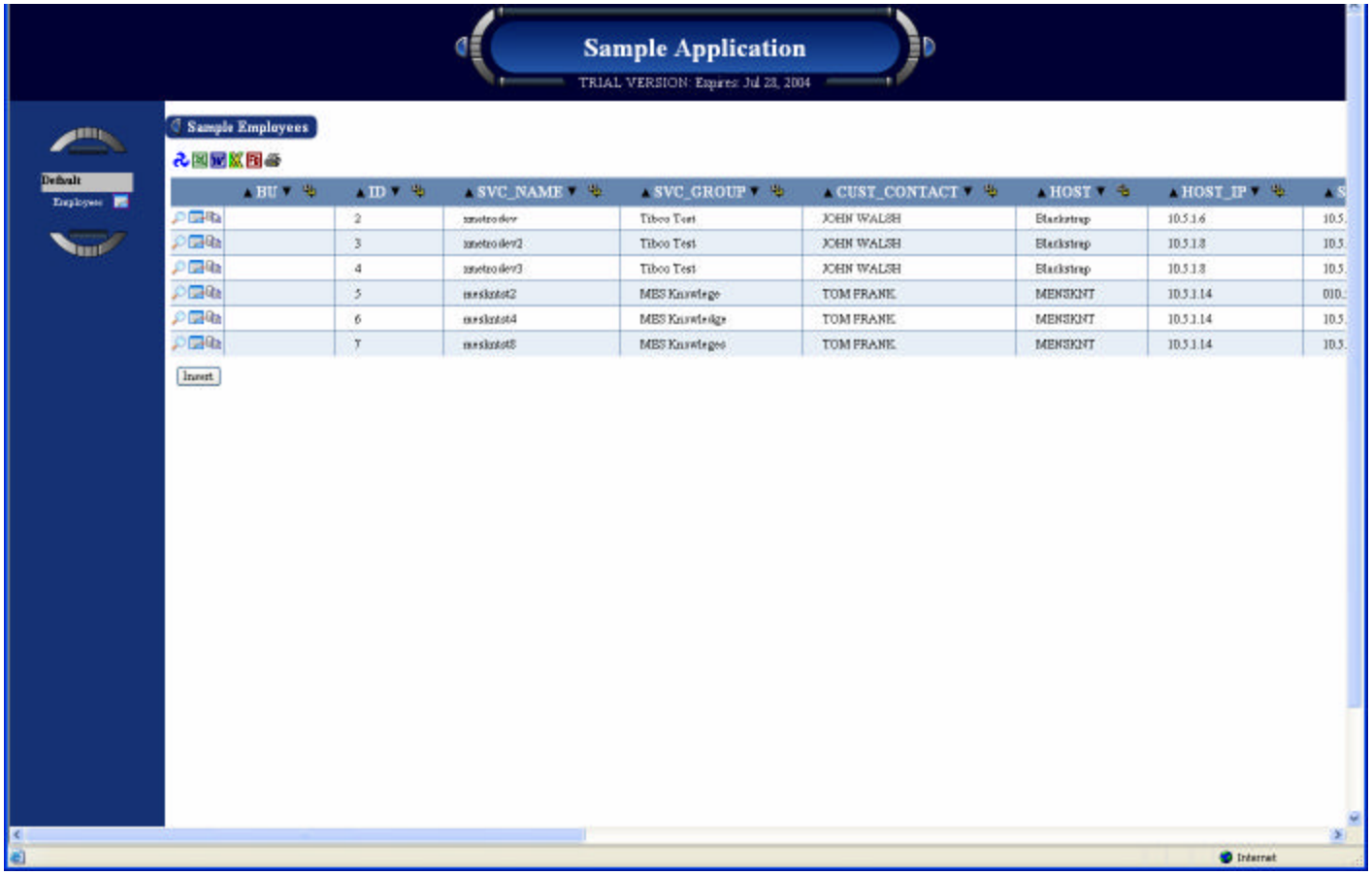
3

Running the Application

To see the application in action, click the “Preview Application” menu item in TOC or the Run button under Web Application Creation Steps.

Since we did not specify an initial SQL Operation when we created the application, the initial screen will be mostly blank:

The labels of all the application's operations (in this case there is only one SQL Operation) are shown in a column on the left side of the screen. Clicking on the "Employees" link brings up the screen of the SQL Operation:



This Operation shows all the employee records in the employee table just like we stated in the query. You can have as many SQL statements as you want showing many different data sets and linking in many different ways.

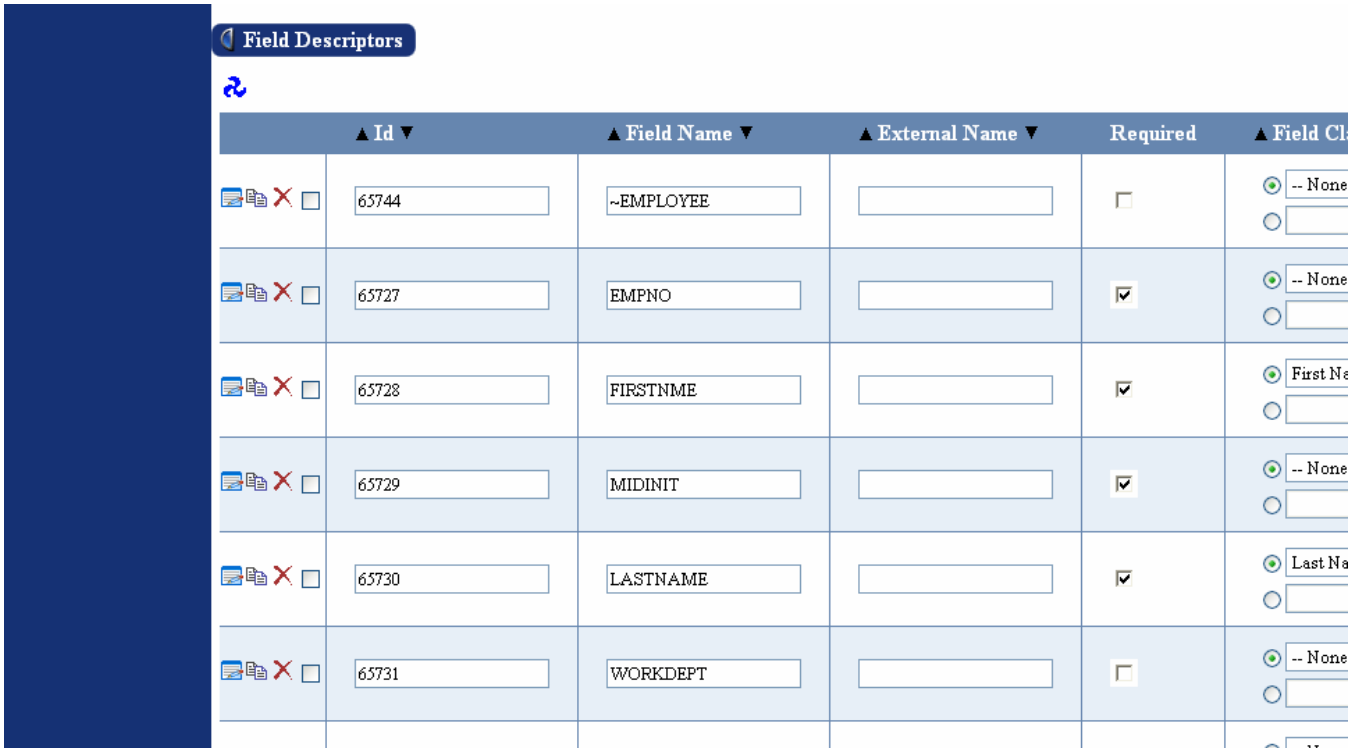
Creating Field Descriptors

A Field Descriptor describes a field in the database (such as “FIRSTNME”, or “HIREDATE” in the EMPLOYEE table). A Field Descriptor contains information such as the external name of a field, whether or not the field is required, or the type of data a field can hold (numeric, time, etc). We will create the Field Descriptors for the EMPLOYEE table so our column headers will be more user friendly.

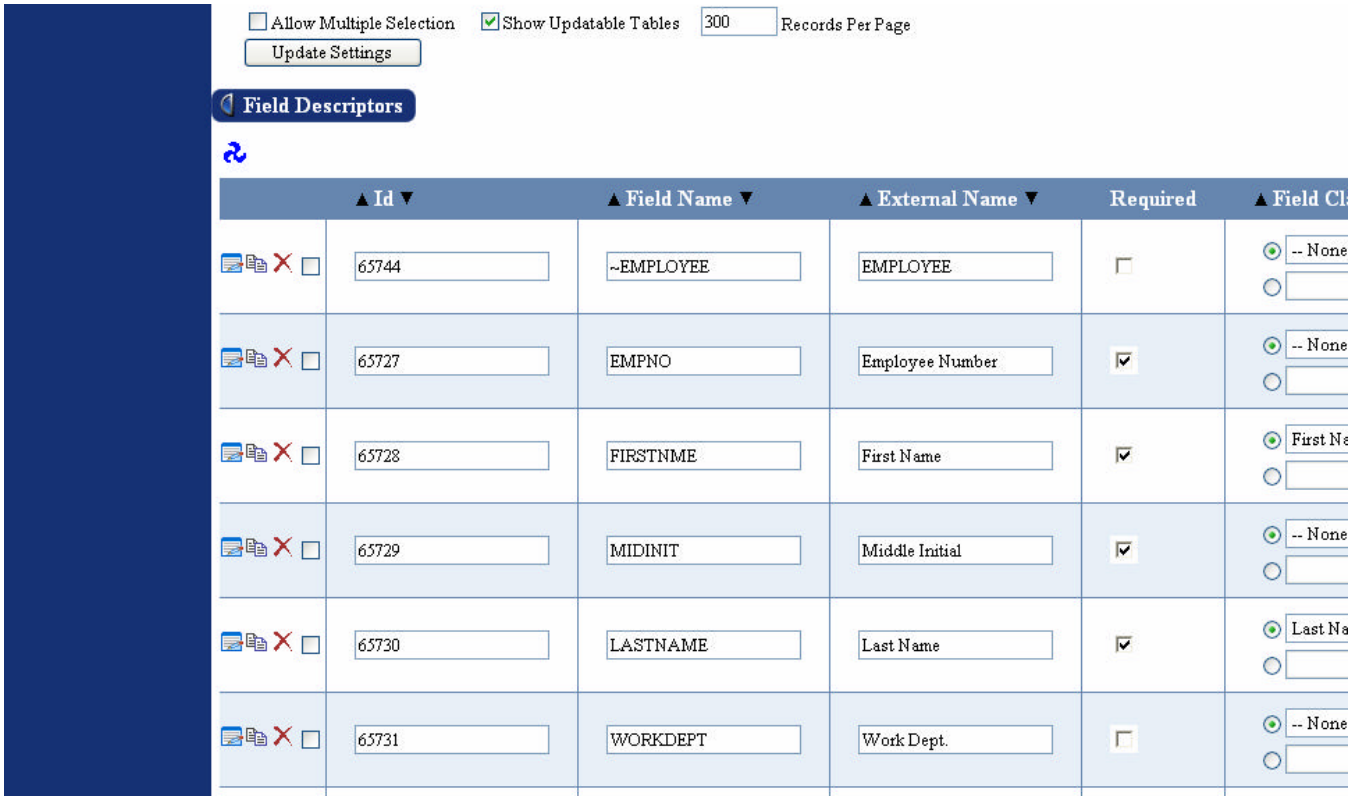
To create Field Descriptors for the EMPLOYEE table, click on the small “FD” icon above the table:

This will bring up the Field Descriptor Manager in a new window.

Then click the “Create FDs” button (under the table functions). This will read the database and create Field Descriptors for every field in the EMPLOYEE table. The list of Field Descriptors will then be displayed:



We could select a Field Descriptor and click the edit button to update it, but we would have to repeat that process 14 times (once for every field in the table). Instead, select the "Show Updateable Tables" checkbox in the Setting section, and then click the "Update Settings" button. This will show the Field Descriptors in an updateable table, allowing us to change them all at once. This is what the screen looks like after entering in user friendly display names:



Click the Update Table button to commit the changes. Go back to the window containing your application, and rerun the query. Now the column headers will show the new, user friendly names instead of the SQL database column headers:


Samples
WOW 6.2 0 ENTERPRISE EDITION
Show All Employees
Show All Employees
Employees
Employees
Search by Last Name
Select Employees Hired Between
Departments
Departments
External Links
WOW Page
Google
Employee Number
First Name
Middle Initial
Last Name
Work Dept.
000010 John R Flemming D21 2978
000020 Dan Q Holm B01 3476
000030 SALLY C KWAN G12 4738
000050 Paul M Carpenter C01 6789
000060 IRVING F STERN R44 6423
000070 EVA L PULASKI D21 7831
000090 EILEEN W HENDERSON E21 5498
000100 Paul Q SPENSER F22 0972
000110 VICENZO G LUCCHESSI G22 3490
000120 SEAN r OCONNELL H22 2167
000130 DELORES M QUINTANA D11 4578

Chapter

5

Additional Enhancements/Features

After reading this tutorial and seeing the above example, now it is your turn to create operations with the EMPLOYEE table. Below are some examples of frequently used operations that you can create. Try them. If you need help refer to the WOW Builders Guide.

1. Download department employees into MS Excel and save to your hard drive.
2. Convert department employees to XML.
3. Update the last name of any Employee.
4. Sort by last name.
5. Create the following operations:
    a. Select employees by last name.
    b. Select all employees but limit the results to 5 per page.
    c. Select employees between a hire date range.
    d. Add a possible value operation so you can select departments from a pick list.
    e. Select all departments from PJDATA.DEPARTMENT
    f. Create an association (1 to many) that allows a department number to be selected and return all employees in that department.
    g. Add the ability to insert an employee. Determine what fields should be required and ensure they are entered prior to the insert being performed.
    h. Add the ability to delete the employee you just added. You can do this in any operation.