

# SQL

# SQL ICE

# User Guide

Version 2.0.2

by

Business Integration Technology, Inc.





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The most recent version can be found on our web site:

<http://businessintegrationtechnology.com/PDF/SQLICEUserGuide.pdf>

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# 1. Overview

This User Guide provides a broad overview of the **SQL ICE™** software product.

It begins with a high-level introduction of the functionality and its primary usage.

Then installation procedures are explained in detail, followed by directions for starting up the application and logging in.

Next, the user interface is reviewed.

Finally, comprehensive, step-by-step instructions are provided, along with screen shots and examples, which explain how to accomplish specific functions.

## 2. Introduction

This installation contains all of the sophisticated functions of **SQL ICE™** that require advanced or expert knowledge of SQL, plus the wizard-like functions of **My Data On The Web™** that do all of the hard work for you so that the user does not need to know anything about programming or databases to create a sophisticated database application.

For information on the other products and services we offer, such as [Managed File Transfer](#) or [B2B Integration](#), please [Contact Us](#) or visit our main website at <http://businessintegrationtechnology.com>.

### 2.1. SQL ICE™

**SQL ICE™** is *revolutionary*...

If you know SQL, you can *build web applications*, using the SQL you already know.

With **SQL ICE™**, you eliminate the "request-prioritize-approve-allocate" process involved in the typical application development cycle.

In your current organization:

- How long does it take to build and deploy a new report?
- Are reports available on the Web?
- Can your application participate in Service-Oriented Architecture (SOA)?
- Is enterprise application integration (EAI) a challenge?

If your application is implemented on a relational database and you know SQL and the application's schema, then **SQL ICE™** can:

- Connect to your existing/legacy database(s) and write queries to generate reports or manage database maintenance
- Build complete internet applications, with insert, update, delete, even branching logic
- Publish reports on the Web literally in minutes, using only SQL and your knowledge of the database
- Extract data for spreadsheet analysis in .csv files
- Enter new data to legacy applications – without access to the application code
- Enable Web service integration for both new and legacy applications
- Convert the relational data to XML and expose it as a Web service for SOA and EAI
- Create JSON objects for sophisticated Web application development

The SQL ICE installation package includes an Apache Derby database that you can use to create your own databases. SQL ICE also supports the following databases:

- MySQL
- Derby
- SQL Server
- Oracle
- any other database for which a jdbc driver exists

Please visit [SQL ICE](#) for more information, or contact us via [email](#) or phone: 314-635-6351, for detailed information on the many uses for **SQL ICE™**.

## 2.2. My Data On The Web™

**My Data On The Web™** is a robust framework that allows you to create your own web-based database applications. And, since it is web-based, you can access your applications anywhere, anytime, and you can provide access to your applications to other users as well.

The underlying **My Data On The Web™** architecture utilizes Java programming and SQL database queries. But the user does not need to know anything about programming or databases to create a sophisticated database application.

**My Data On The Web™** provides wizard-like functions that do all of the hard work for you. You simply define your data, and then the system creates the database tables and the application interface screens with just a few clicks.

Once your application is set up, you are ready to start entering your data, and running and printing reports.

It really is that simple!

Please visit [My Data On The Web](#) for more information, or contact us via [email](#) or phone: 314-635-6351, for detailed information on the many uses for **My Data On The Web™**.

## 3. Getting Started

After completing this section, you will have a fully functioning installation of **SQL ICE™**.

The instructions for downloading and installing the software are covered, and also where to find the uninstaller. Procedures for starting up the application, logging in and out, and shutting it down are then discussed. Finally, the product registration process is explained.

### 3.1. Download

You can find the **SQL ICE™** installation file on our [Download](#) page.

You can open the download file to run the installer immediately, or you can save this file to your desktop or elsewhere on your hard drive where you can easily find it to run later. Once the installation is complete, you can delete the installer.

### 3.2. Install

Open the download file, or double-click the file if you saved it, to launch the **SQL ICE™** installation wizard.

If you do not have administrator privileges on your computer, you will be prompted to enter the administrator password.

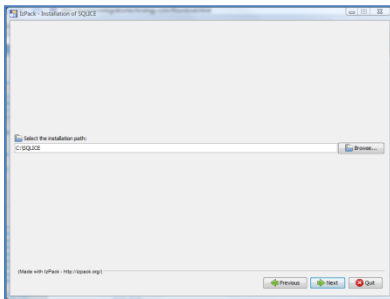
The wizard launches an introduction screen.



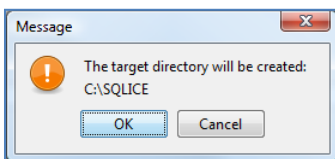
Click *Next* to review the license agreement. You must click to accept the terms of the agreement before you can proceed to the next screen.



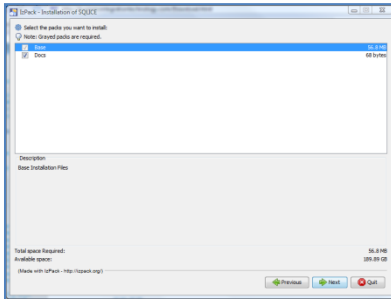
Click *Next* to select the installation path, which defaults to C:\SQLICE.



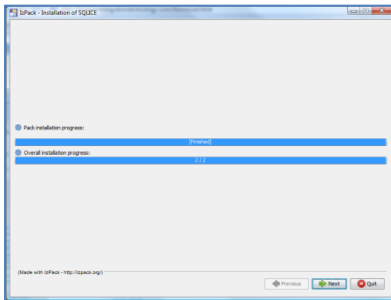
Click *Next* and you will be presented with a pop-up box confirming the creation of the new directory.



Click **OK** to select the packs you want to install. The Base pack is required and contains the product's software code. The Docs pack is optional and contains documentation such as this User Guide.



Click **Next** to begin the installation.

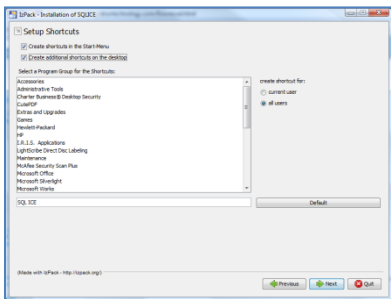


Click **Next** to set up your shortcuts. The default setting adds shortcuts to the *Start > All Programs* menu for all users.

You can select to create shortcuts on the desktop as well.

You can elect to create shortcuts for the current user only.

Lastly, you have the option to add **SQL ICE™** to an existing Program Group instead of *Start > All Programs*.



Click **Next** to finish the installation process.

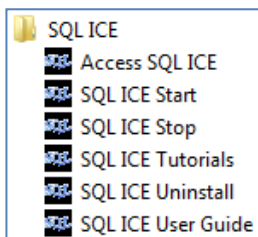
The next 2 screens of the installation wizard explain how to start up and access **SQL ICE™**.

## 3.3. Access

### 3.3.1. Start Up



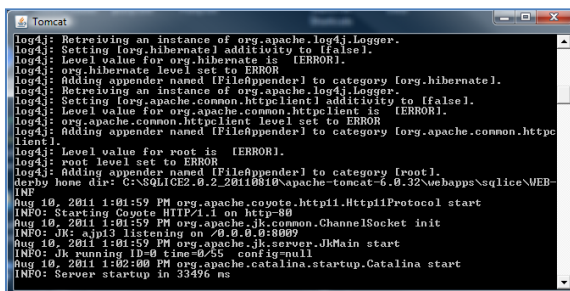
Start **SQL ICE™** by clicking *Start > All Programs > SQL ICE > SQL ICE Start*. Or, if you elected to add shortcuts to your desktop, double-click the icon, *SQL ICE Start*.



or

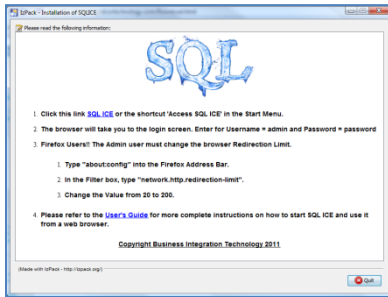


A Tomcat session will open and run while your **SQL ICE™** session is active.



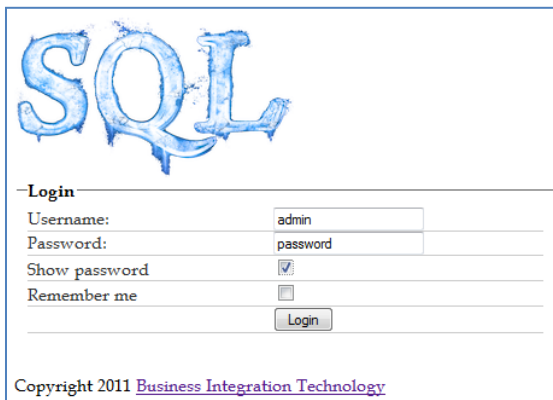
### 3.3.2. Log In

To login, you can click the link provided in the installation wizard.



You can also click *Start > All Programs > SQL ICE > Access SQL ICE*. Or, if you elected to add shortcuts to your desktop, double-click the icon, *Access SQL ICE*.

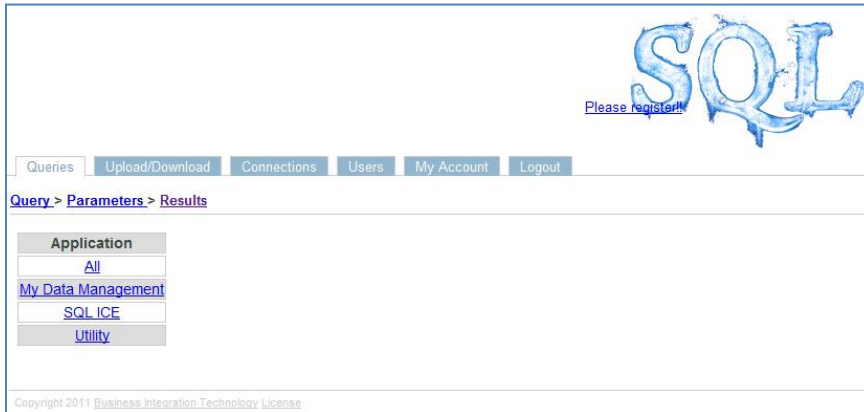
This will open a web browser and navigate to: <http://localhost/sqlice/app/login>.



The *admin* user has full administrative privileges, including creating and maintaining user accounts, and access to all user functions.

username	password
admin	password

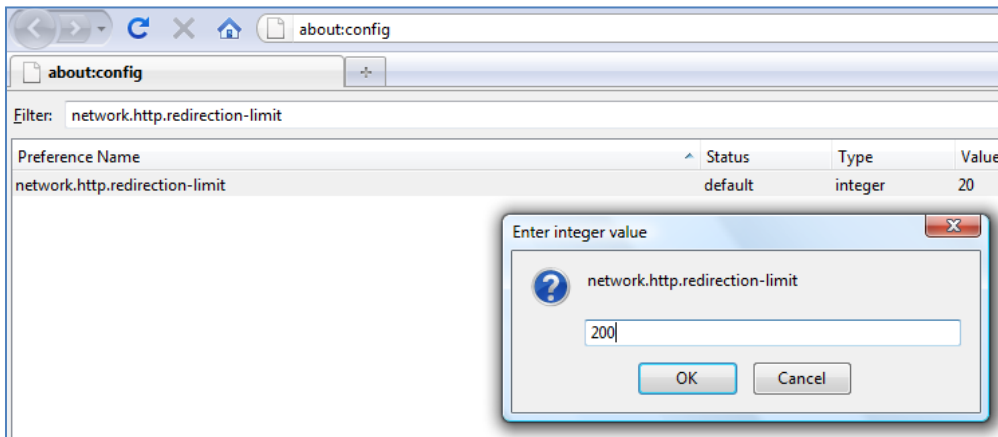
After a successful login, you will see a screen similar to the one below.



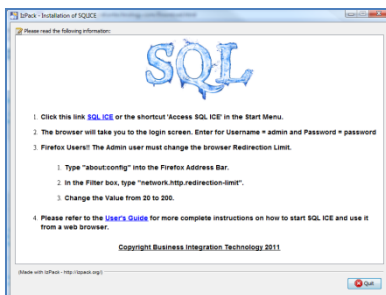
### 3.3.2. Firefox Configuration

If you are using Firefox as your browser, you must change the Redirection Limit, which is a setting that limits the number of times your browser will accept “redirections” from one host to another. **SQL ICE™** utilizes redirect logic and you may experience errors if you do not change this setting.

1. Type "about:config" into the Firefox Address Bar.
2. In the Filter box, type "network.http.redirection-limit".
3. Change the Value from 20 to 200.



Click *Quit* to close the installation wizard.



### 3.3.2. Log Out

To log out, click the tab farthest to the right, *Logout*.

### 3.3.3. Shut Down

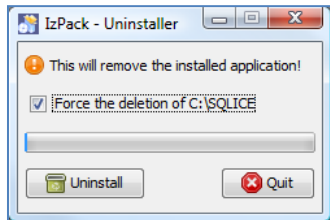
After logging out, the best practice is to properly shut down **SQL ICE™**. Click *Start > All Programs > SQL ICE > SQL ICE Stop*. Or, if you elected to add shortcuts to your desktop, double-click the icon, *SQL ICE Stop*. This will end the Tomcat session and close that window.

## 3.4. Uninstall

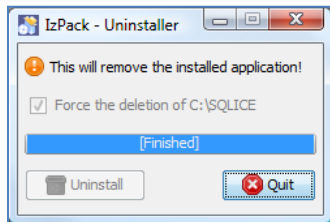
The uninstaller can be found in your installation path in a folder named *Uninstaller*; e.g., *C:\SQLICE\Uninstaller*.

Double-click the file *uninstaller.jar*.

If you do not have administrator privileges on your computer, you will be prompted to enter the administrator password.



Check the box to force the deletion of *\SQLICE* from your installation path and click *Uninstall*.



Click *Quit* to finish uninstalling **SQL ICE™**.

## 3.5. Product Registration

Business Integration Technology, Inc., requests that you register your copy of **SQL ICE™** the first time you log in. From any screen, just click *Please Register!!* below the product logo.



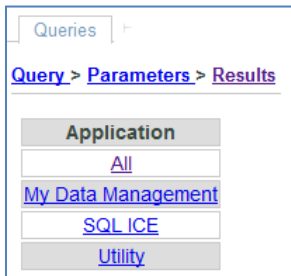
We ask for basic contact information and whether you are using **SQL ICE™** for commercial use. Per the terms in the software license agreement, the product is free for the first 60 days. If you do not register, the software will no longer function after 60 days. If you register for private or non-commercial use, you may continue to use it free of charge. If you plan to use **SQL ICE™** at a place of business or for commercial purposes, you must register for “Commercial Use” and purchase the software. Please contact BIT for prices, discounts and payment methods: [info@businessintegrationtechnology.com](mailto:info@businessintegrationtechnology.com) or 314-635-6351.

## 4. User Interface

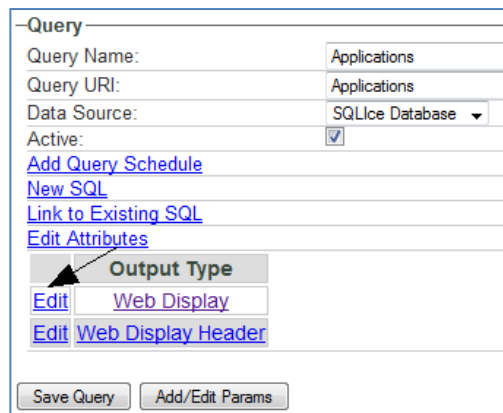
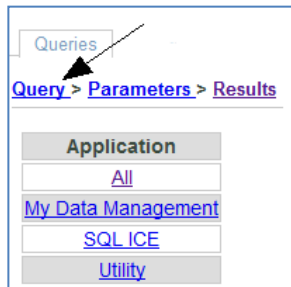
This section of the User Guide offers a high-level explanation for each of the tabs across the top of the user interface. More detailed instructions for specific functionality are found in the tutorials and examples that are found in later sections of the User Guide.

### 4.1. Queries Tab

After a successful login, the first screen the user sees is the *Queries* tab. The *Queries* tab displays the list of queries that the user can access and run. We call these *Applications*. The list of *Applications* that the user sees is the result of a SQL ICE query.



To see the query example that creates this list, click *Query* in the breadcrumb navigation, then click *Edit* for *Web Display*.



This is the SQL that creates the list of *Applications* on the *Queries* tab. The *Admin* user can edit this query.

[Back to Query](#)

—Query Sql

Output Type Web Display ▼

Sql:

```

Select distinct
  '<a href="/sqlice/app/query/Queries/output/WEBDISPLAY?Application='
  || Attribute_Value || '&QUERY_NAME=*&QUERY_URL_NAME=*'
  || '&ENABLED=1&offset=0&per_page=20">' || Attribute_Value
  || '</a>'
as "Application"
from Query_Attribute
where Attribute_Name = 'Application'
and (:IsUserQueryAdmin = 1 or not exists (
  select * from Query_Attribute Q where
  (Q.Attribute_Value = 'SQL ICE' or Q.Attribute_Value = 'My Data Validation')
  and Q.Attribute_Name = 'Application'
  and Q.Query_ID = Query_Attribute.Query_ID )
)
union
Select
  '<a href="/sqlice/app/query/Queries/output/WEBDISPLAY?Application=*'
  || '&QUERY_NAME=*'
  || '&ENABLED=1">' || 'All'
  || '</a>'
as "Application"
from sysibm.sysdummy1
where :IsUserQueryAdmin = 1

```

Save SQL

## 4.2. Upload/Download Tab

The Upload/Download tab is used to create ETL (Extract, Transform, Load logic. ETL is a database process that involves:

- Extracting data from outside sources
- Transforming it to fit operational needs
- Loading it into a destination database, data warehouse, or data mart

You can create a statement to download data from a database as a CSV file or as XML. You can also create an ETL to upload data from a source file, CSV or XML. In addition, you can create a “pull/push” ETL that uploads data from a source, executes some transform logic mid-process, then pushes the transformed data to a destination.

Some instructions for this feature are provided in the [Advanced Features](#) section.

## 4.3. Connections Tab

The *Connections* tab is used to create and maintain your database connections. The SQL ICE installation package includes an Apache Derby database, so any new databases you create are Derby databases. However, you can use SQL ICE to connect to external databases as well, and the following databases are supported:

- MySQL
- Derby
- SQL Server
- Oracle
- any other database for which a jdbc driver exists

To create a new connection, click the *Connections* tab and then click *New Connection*.

Connection Name	Driver Name
<a href="#">SQLIce Database</a>	org.apache.derby.jdbc.ClientDriver

Let's say you're running SAP and want to connect to your Oracle database. Enter a *Connection Name* like "SAP", then select "Oracle" in the *Connection Type* drop-down box, and then click *Next*.

Enter a valid *Username* and *Password*, and the appropriate *Host* and *Database* names for the database you want to access. Click *Finish*.

You will see your new connection listed on the screen.

Connection Name	Driver Name
<a href="#">SQLIce Database</a>	org.apache.derby.jdbc.ClientDriver
<a href="#">SAP</a>	oracle.jdbc.driver.OracleDriver

You can now write or modify queries to point to this database by selecting it as the *Data Source* in the query profile screen.

SQL ICE is a powerful tool to connect to all your databases using JDBC drivers. But most drivers are not open source and BIT cannot distribute them. To make your new SQL ICE Connection work with any external database (except Derby), you will need to obtain the driver and copy it to the SQL ICE lib folder in your SQL ICE installation. This is typically something like C:\SQLICE 2.0.2\apache-tomcat-6.0.32\webapps\sqlice\WEB-INF\lib or /usr/share/tomcat6/webapps/sqlice/WEB-INF/lib (depending on your operating system). The driver will be a jar file with a name like mysql-connector-java-5.1.8-bin.jar (for mySQL).

If you do not provide the driver and you define a connection that requires the driver, your SQL ICE startup will fail. If this happens, just copy the needed driver to the lib folder/directory as specified above and startup SQL ICE again.

## 4.4. Users Tab

The *Users* tab is where you create and maintain user IDs. You can add new users, and for existing users you can change user name or password, and mark as active or inactive.

## 4.5. My Account Tab

The *My Account* tab is where the user that is currently logged in can change their password.

## 4.6. Logout Tab

When the *Logout* tab is clicked, the user is immediately logged out and presented with the login screen. There is no pop-up message to confirm that the user really wants to log out.

## 5. Creating a Database Application using My Data on the Web™

For the first time, the wizard-like functionality of **My Data On The Web™** is included with the full power of **SQL ICE™**. With this version, you can utilize the easy-to-use wizards of **My Data On The Web™** to define new database tables and create application screens, and then access the full function of **SQL ICE™** to make modifications or write your own SQL queries from scratch.

The wizard-like functionality of **My Data On The Web™** provides a robust framework for you to create your own web-based database applications. And, since it is web-based, you can access your applications anywhere, anytime, and you can provide access to your applications to other users as well.

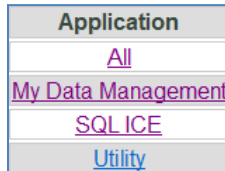
There are 2 primary elements to create a database application: My Data Management and My Data. These will be described in detail below. You must complete My Data Management before moving on to My Data.

The instructions that follow utilize an example, “Shopping Lists”, to illustrate the step-by-step instructions for creating a simple database application. It describes all of the procedures necessary to set up the “Stores” where you shop and an “Item Catalog” of your common household supplies. We can then create a few “Shopping Lists” that pull data from the Stores and the Item Catalog.

### 5.1. My Data Management

To begin, you should have completed the [Getting Started](#) portion of this User Guide, and be logged in.

Click *My Data Management* to begin.

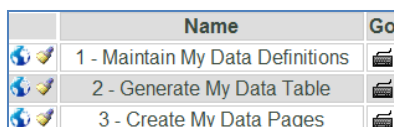








The My Data Management element is where you create and maintain your data definitions, generate your databases, and then create the application screens where you enter, view and maintain your data.

You must complete the steps in My Data Management before moving on to My Data.

There are 3 steps under My Data Management, and you must complete them in the proper order:

1. Maintain My Data Definitions
2. Generate My Data Table
3. Create My Data Pages

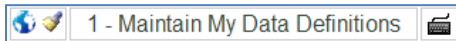


	Name	Go
	1 - Maintain My Data Definitions	
	2 - Generate My Data Table	
	3 - Create My Data Pages	

#### 5.1.1. Maintain My Data Definitions

The first step, Maintain My Data Definitions, is where you name your tables and describe the columns of data that each table will contain. To create our Shopping Lists example, we will start by creating and defining 3 tables, STORES, ITEM\_CATALOG, and SHOPPING\_LISTS.

Begin by clicking the Go icon for 1 – Maintain My Data Definitions.



We are presented with a screen where we can filter the data definitions we may have already created. When creating a new table, it's good practice to always search for the table name you want to use, to verify that it hasn't already been used in an application you previously created. Let's search for the STORES table to make sure we don't already have a table with this name.

**Note: Table names must be alphanumeric in ALL\_CAPS with NO\_SPACES and no special characters.**

Enter STORES in the *Table Name* field and then click *Web Display*.

1 - Maintain My Data Definitions	
Table Name	STORES
Column Number	*
Display Name	*
Data Type	*
Reference	*
Required	*
Data Check	*
<input type="button" value="Web Display"/>	

We get a result of 0 rows, confirming that the table STORES does not already exist, so we will create it now.



We are prompted to begin defining the new table, with STORES defaulted in the *Table Name* field for us.

Table Name	Column Number	Display Name	Data Type	Reference	Required	Data Check
STORES	0		5-Digit Zip		No	

5-Digit Zip  
 Date  
 Date/Time  
 Long Text  
 Money  
 Number  
 Scientific  
 Selection  
 Text  
 Time  
 from Linked Table

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*Table Name* is simply the name of the table that we are defining.

*Column Number* is the order of the columns in our table.

*Display Name* is the name of the column to be displayed on the screen to the user.

**Note: Column names must be alphanumeric with no special characters, but blank spaces are allowed.**

*Data Type* is a drop-down list of options that describe the kind of data that will be entered in that column. They are similar to what you might see in a spreadsheet program, with two exceptions that involve a reference to another table:

1. *Selection* is used if you want that column to be a drop-down list of options that you will set in a *Code Table*.
2. *from Linked Table* is used if you want that column to be a drop-down list of options that is pulled from one of your other tables.

*Reference* is used only if you choose *Selection* or *from Linked Table* as the *Data Type*.

1. For *Selection*, it is the name of the Code Table that contains your drop-down list values.
2. For *from Linked Table*, it is the name of the table that contains the data you are pulling into this table.

*Required* allows you to make a field mandatory, so that the user must enter a value in that field and cannot leave it blank.

*Data Check* is used for data validation, so you can ensure that the user enters a correct value in the field. One example is “QUANTITY > 0” for an ordering or invoicing application. Another example is “DUE\_DATE >= INVOICE\_DATE”.

**Note that you must use ALL CAPS for the column names in the Data Check field.**

Let’s enter the first column in our STORES table. Column 1 will be called “Store Name” and it is a “Text” field.

**Note: Column names must be alphanumeric with no special characters, but blank spaces are allowed.**

	Table Name	Column Number	Display Name	Data Type	Reference	Required	Data Check
	STORES	1	Store Name	Text		No	

Click the *add* icon to add this data definition. Note that the Store Name column is now displayed for you with an *edit* icon and a *delete* icon , so that you can make modifications to your data definitions if needed.

	Table Name	Column Number	Display Name	Data Type	Reference	Required	Data Check
	STORES	0		5-Digit Zip		No	
	STORES	1	Store Name	Text		Y	

Let’s add 2 more columns, Location as a Long Text field, and Phone as a Text field. Phone could be a *Data Type* of Number if you want to display only the 10 digits without punctuation such as ( ) or – as standard phone number formatting options. We want to use punctuation characters to format our phone numbers, so our Phone column is a Text field.

	Table Name	Column Number	Display Name	Data Type	Reference	Required	Data Check
	STORES	0		5-Digit Zip		No	
	STORES	1	Store Name	Text		N	
	STORES	2	Location	Long Text		N	
	STORES	3	Phone	Text		N	

Now let’s add a 4th column called Store Type that we want to be a drop-down list of values, so the *Data Type* will be Selection. We will create a Code Table that contains the list of values we want in our drop-down box, and we will call it STORE\_TYPES, so that goes in the *Reference* field.

	Table Name	Column Number	Display Name	Data Type	Reference	Required	Data Check
	STORES	0		5-Digit Zip		No	
	STORES	1	Store Name	Text		N	
	STORES	2	Location	Long Text		N	
	STORES	3	Phone	Text		N	
	STORES	4	Store Type	Selection	STORE_TYPES	N	

Now we need to create that Code Table we just referenced, STORE\_TYPES. Click the *Queries* tab and then click *My Data Management*. You will notice a few additional items below our 3 main Data Management steps, which we have provided as optional utilities that you might need while creating or maintaining your database applications. For now we will focus on ~ *Maintain Selection Codes*. Click the *Go* icon for this utility.



We are presented with a filter screen so first let's search for the STORE\_TYPES code table to make sure it hasn't already been created. Enter STORE\_TYPES in the *Code table name* field and then click *Web Display*, just like we did earlier when we searched for the STORES table to make sure it didn't already exist.

~ Maintain Selection Codes	
Code table name	STORE_TYPES
Value	*
Label	*
<input type="button" value="Web Display"/>	

Since we get 0 rows returned, we will create this code table now by entering the items we want to appear in our drop-down list.

*Code table name* has defaulted to STORE\_TYPES for us.

*Value* is how the item will appear in the drop-down list when the user is adding the item.

*Label* is how it will appear on the screen after it has been added.

*Value* and *Label* can be the same or they can be different. One example where you might want them to be different is in a product catalog code table. You could set the *Value* that the user sees in the drop-down box when they are adding or editing an item to be a product code along with a description, but you set the *Label* that the user sees in the application to be only the product code.

For our "Shopping Lists" example, we will make our *Values* and *Labels* the same. Let's add 3 Store Types: Grocery, Hardware, and Department.

	Code table name	Value	Label
	STORE_TYPES		
	STORE_TYPES	Department	Department
	STORE_TYPES	Grocery	Grocery
	STORE_TYPES	Hardware	Hardware

We are finished defining our STORES table, so now let's create the ITEM\_CATALOG. Click the *Queries* tab, then click *My Data Management*, then click *Go for 1 – Maintain My Data Definitions* as we did before. Search for ITEM\_CATALOG, and we get 0 results. Let's create it with 2 columns: Item Name as a Text field and Item Description as a Long Text field.

	Table Name	Column Number	Display Name	Data Type	Reference	Required	Data Check
	ITEM_CATALOG	0		5-Digit Zip		No	
	ITEM_CATALOG	1	Item Name	Text		N	
	ITEM_CATALOG	2	Item Description	Long Text		N	

The last table we need to define is SHOPPING\_LISTS. Click the *Filter* button and search for SHOPPING\_LISTS, and then proceed with our table definitions as follows.

- Column 1 is Date.
- Column 2 is Store Name and the data will be *from Linked Table, STORES*.
- Column 3 is Item Name and the data will be *from Linked Table, ITEM\_CATALOG*.
- Column 4 is Quantity with a data check of *QUANTITY > 0*.

**Note:** When you use the Data Type “from Linked Table”, the column Display Name and Reference table name must match exactly those of the linked table.

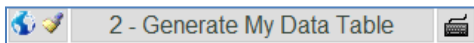
	Table Name	Column Number	Display Name	Data Type	Reference	Required	Data Check
	SHOPPING_LISTS	0		5-Digit Zip		No	
	SHOPPING_LISTS	1	Date	Date		N	
	SHOPPING_LISTS	2	Store Name	from Linked Table	STORES	N	
	SHOPPING_LISTS	3	Item Name	from Linked Table	ITEM_CATALOG	N	
	SHOPPING_LISTS	4	Quantity	Number		N	

This completes step 1, Maintain My Data Definitions, of the first element, My Data Management.

### 5.1.2. Generate My Data Table

The second step, Generate My Data Table, is where you create the tables that we just defined in step 1. **My Data On The Web™** does the hard work for you, enabling you to create your tables with just a few clicks. We will create our 3 tables: STORES, ITEM\_CATALOG, and SHOPPING\_LISTS.

Begin by clicking the *Queries* tab, click *My Data Management*, and then click *Go for 2 – Generate My Data Table*.



Simply select the name of your table from the drop-down list, and click *Web Display*. Let’s begin with STORES.

**2 - Generate My Data Table**

Table Name:

**My Data On The Web™** just generated all of the logic required to create the table STORES, based on the data definitions established in step 1.



Now just click *Go* to execute this logic, and you will be presented with a screen confirming that the STORES table was created successfully.

**Create Stores**

Total: 1

**success**

Table Created. Return to [My Data Management](#) to continue building your application

Click the link to return to *My Data Management* right from this confirmation screen, and then repeat these steps for the tables ITEM\_CATALOG and SHOPPING\_LISTS.

**2 - Generate My Data Table**  
Table Name:

**Create Item catalog**  
Total: 1  
success  
true  
Table Created. Return to [My Data Management](#) to continue building your application

**2 - Generate My Data Table**  
Table Name:

**Create Shopping lists**  
Total: 1  
success  
true  
Table Created. Return to [My Data Management](#) to continue building your application

This completes step 2, Generate My Data Table, of the first element, My Data Management.

### 5.1.3. Create My Data Pages

The third step, Create My Data Pages, is where you create your database application screens (or pages), which enable you to enter, view, modify, and delete your data. **My Data On The Web™** makes this step just as easy as creating the database tables. Again in just a few clicks, we will create the screens for our 3 tables, and this will complete the first element, My Data Management.

Click the link to return to *My Data Management* from the Create Shopping Lists confirmation screen, and then click *Go* for 3 – Create My Data Pages.

[3 - Create My Data Pages](#)

Simply select the name of your table from the drop-down list, and click *Web Display*. Let's begin again with STORES.

**3 - Create My Data Pages**  
Table Name:

You will be redirected to the *My Data* screen where you will see that *Stores* was successfully created, along with the *Print Stores* utility. The Print utilities provide versions of screens that are formatted for printing more favorably than common web pages typically are.

		Name	Go
		Stores	
		~ Print Stores	

The quickest way to continue creating the screens for your other tables is to click the *Back* button on your browser ( or ) to return to the *Create My Data Pages* screen.

Repeat these steps for ITEM\_CATALOG, and SHOPPING\_LISTS, to achieve these results:

		Name	Go
		Item catalog	
		Shopping lists	
		Stores	
		~ Print Item catalog	
		~ Print Shopping lists	
		~ Print Stores	

This completes step 3, Create My Data Pages, and the first element, My Data Management, of our “Shopping Lists” example.

## 5.2. My Data

We are ready to proceed with the second element, My Data, required to complete our example “Shopping Lists”. The My Data element is where we will use the pages, or screens, that were created in [step 5.1.3](#), to enter data into the STORES and ITEM\_CATALOG databases, and then we can create a few Shopping Lists.

Let’s begin by adding a few stores to our STORES database. Begin by clicking the *Go* link for Stores.



We are presented with a filter screen so we can do searches after we have entered some data. Since we haven’t entered any data yet, just click *Web Display*.

Stores	
Store Name	*
Location	*
Phone	*
Store Type	*
<input type="button" value="Web Display"/>	

We see the Stores screen we created, with the 4 columns we defined in step [5.1.1](#), including the drop-down list for Store Type.

	Store Name	Location	Phone	Store Type
				Department ▾

Let's enter a few stores using the data below or something similar of your choice:

- Home Improvement Superstore; Metropolis, MO; (555) 321-1234; Hardware
- Save On Food; Metropolis, MO; (555) 987-5544; Grocery
- Things & Stuff; Metropolis, MO; (555) 654-9876; Department
- Wholesome Groceries; Utopia, MO; (999) 357-1591; Department
- Dealer Jane's; Utopia, MO; (999) 246-8464; Grocery
- Do-It-Yourself; Serendipity, MO; (777) 333-5555; Hardware

	Store Name	Location	Phone	Store Type
	<input type="text"/>	<input type="text"/>	<input type="text"/>	Department ▾
	Dealer Jane's	Utopia, MO	(999) 246-8464	Grocery
	Do-It-Yourself	Serendipity, MO	(777) 333-5555	Hardware
	Home Improvement Superstore	Metropolis, MO	(555) 321-1234	Hardware
	Save On Food	Metropolis, MO	(555) 987-5544	Grocery
	Things & Stuff	Metropolis, MO	(555) 654-9876	Department
	Wholesome Groceries	Utopia, MO	(999) 357-1591	Department

Notice that we entered Wholesome Groceries incorrectly as a Department store. We can easily modify it by clicking the *edit* icon. Change the *Store Type* to "Grocery" and click the *Update* button.

**Update Stores**

**Store Name**

**Location**

**Phone**

**Store Type**

[Shopping lists Detail](#)

We see our list of stores again, with Wholesome Groceries updated correctly.

	Store Name	Location	Phone	Store Type
	<input type="text"/>	<input type="text"/>	<input type="text"/>	Department ▾
	Dealer Jane's	Utopia, MO	(999) 246-8464	Grocery
	Do-It-Yourself	Serendipity, MO	(777) 333-5555	Hardware
	Home Improvement Superstore	Metropolis, MO	(555) 321-1234	Hardware
	Save On Food	Metropolis, MO	(555) 987-5544	Grocery
	Things & Stuff	Metropolis, MO	(555) 654-9876	Department
	Wholesome Groceries	Utopia, MO	(999) 357-1591	Grocery

Similarly, the *Delete* icon is used to remove a data item.

**Note: When you delete a data item, it is immediately deleted. There is no "Are you sure?" confirmation message.**

We now have our list of Stores entered and will proceed with the Item Catalog. Click the *My Data* button to return to the list of screens we created, click *Go* for Item Catalog, and then click *Web Display* to get to your data entry screen.

Now we'll add some shopping items to the Item Catalog, just like we entered our Stores:

- wheat bread; sliced sandwich bread
- chicken salad; Dealer Jane's chicken salad
- laundry detergent; liquid laundry detergent, no dyes or perfumes
- fabric softener; liquid fabric softener, April fresh scent
- lunchmeat – turkey; sliced deli turkey
- skim milk; non-fat milk
- toothpaste; fluoride toothpaste
- work gloves; standard work gloves
- gardening gloves; gloves for gardening
- tofu; firm tofu
- Sour "Not" Cream; vegan sour cream
- Finer Than Cream Cheese; vegan cream cheese
- toilet paper; jumbo pack of toilet paper
- duct tape; standard sliver duct tape

	Item Name	Item Description
+	<input type="text"/>	<input type="text"/>
	Finer Than Cream Cheese	vegan cream cheese
	Sour "Not" Cream	vegan sour cream
	chicken salad	Dealer Jane's chicken salad
	duct tape	standard sliver duct tape
	fabric softener	liquid fabric softener, April fresh scent
	gardening gloves	gloves for gardening
	laundry detergent	liquid laundry detergent, no dyes or perfumes
	lunchmeat – turkey	sliced deli turkey
	skim milk	non-fat milk
	tofu	firm tofu
	toilet paper	jumbo pack of toilet paper
	toothpaste	fluoride toothpaste
	wheat bread	sliced sandwich bread
	work gloves	standard work gloves

We are now ready to create Shopping Lists! Click the *My Data* button, click *Go* for Shopping Lists, and then click *Web Display*. We see our Shopping Lists screen where Store Name is a drop-list of our STORES table, and Item Name is a drop-down list of our ITEM\_CATALOG. The Date column is formatted as a date and defaults to today's date. If you click in the Date field, you'll get a pop-up calendar wizard so you can select the date you want instead of typing it in.

Date	Store Name	Item Name	Quantity
07/07/2011	Home Improvement Sup	Finer Than Cream Chees	0

← Jul →  
 2011

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Here are a few Shopping List examples you can create:

	Date	Store Name	Item Name	Quantity
	07/07/2011	Home Improvement Sup	Finer Than Cream Chees	0
	07/07/2011	<a href="#">Save On Food</a>	<a href="#">wheat bread</a>	2
	07/07/2011	<a href="#">Save On Food</a>	<a href="#">lunchmeat – turkey</a>	1
	07/07/2011	<a href="#">Save On Food</a>	<a href="#">skim milk</a>	1
	07/07/2011	<a href="#">Wholesome Groceries</a>	<a href="#">Sour "Not" Cream</a>	3
	07/07/2011	<a href="#">Wholesome Groceries</a>	<a href="#">Finer Than Cream Cheese</a>	2
	07/07/2011	<a href="#">Wholesome Groceries</a>	<a href="#">tofu</a>	4
	07/07/2011	<a href="#">Dealer Jane's</a>	<a href="#">chicken salad</a>	1

	Date	Store Name	Item Name	Quantity
	07/01/2011	Home Improvement Sup	Finer Than Cream Chees	0
	07/01/2011	<a href="#">Home Improvement Superstore</a>	<a href="#">gardening gloves</a>	5
	07/01/2011	<a href="#">Home Improvement Superstore</a>	<a href="#">work gloves</a>	2
	07/01/2011	<a href="#">Things &amp; Stuff</a>	<a href="#">fabric softener</a>	1
	07/01/2011	<a href="#">Things &amp; Stuff</a>	<a href="#">toothpaste</a>	1
	07/01/2011	<a href="#">Things &amp; Stuff</a>	<a href="#">laundry detergent</a>	2

You can click the *Filter* button at the top of the screen to search by Store Name or by any of the other columns. Let's filter on "Save On Food" to get a list we can take with us to that store.

Shopping lists	
Store Name	<input type="text" value="Save"/>
Date	*
Item Name	*
Quantity	*
<input type="button" value="Web Display"/>	

You can search by partial names like "Save", or even "store" for "Home Improvement Superstore". But the filter is case sensitive, so you must search for "Save" and not "save".

	Date	Store Name	Item Name	Quantity
	07/07/2011	Home Improvement Sup	Finer Than Cream Chees	0
	07/07/2011	<a href="#">Save On Food</a>	<a href="#">wheat bread</a>	2
	07/07/2011	<a href="#">Save On Food</a>	<a href="#">lunchmeat – turkey</a>	1
	07/07/2011	<a href="#">Save On Food</a>	<a href="#">skim milk</a>	1

Now we want to print this list to take with us to the store. Click the *Print* button at the top of the screen, and a new tab will open in your browser with your list formatted for printing.

Date	Store Name	Item Name	Quantity
07/07/2011	Save On Food	wheat bread	2
07/07/2011	Save On Food	lunchmeat – turkey	1
07/07/2011	Save On Food	skim milk	1

Then just click *File > Print*.

## 5.3. Creating an Application Group

Once you have completed defining and creating your database application, you can create an Application group so that the pages you created are grouped together under their own link on the *Queries* tab.

This step is not required, but makes your application more user-friendly.

We will use the “Shopping Lists” example for illustration.

Click *My Data*.

Click the *edit* icon for the first item, *Item Catalog*.

		Name	Go
		Item catalog	
		Shopping lists	
		Stores	
		~ Print Item catalog	
		~ Print Shopping lists	
		~ Print Stores	

Click *Edit Attributes*, then click *Add Attribute*, and then add an Application Attribute of “Shopping Lists”

**Query**

Query Name:

Query URI:

Data Source:

Active:

[Add Query Schedule](#)

[New SQL](#)

[Link to Existing SQL](#)

[Edit Attributes](#)

**Output Type**

[Edit](#)

[Edit](#)

[Edit](#)

**Attributes for Query: Item catalog**

Name	Value	Actions
Application	My Data	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Add Attribute</a> <a href="#">Main Queries Page</a>		

**Utility - Add Query Attribute**

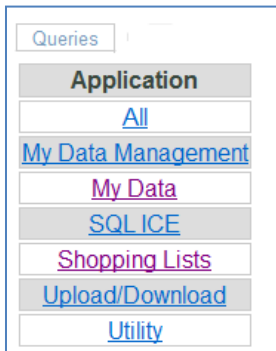
Attribute Name:

Attribute Value:

**Attributes for Query: Item catalog**

Name	Value	Actions
Application	My Data	<a href="#">Edit</a> <a href="#">Delete</a>
Application	Shopping Lists	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">Add Attribute</a> <a href="#">Main Queries Page</a>		

We now have “Shopping Lists” listed as an Application on the *Queries* tab.



*Item Catalog* can still be found under *My Data*, but now it can also be found under *Shopping Lists*. If you no longer want it to appear under *My Data*, you can delete that Attribute.

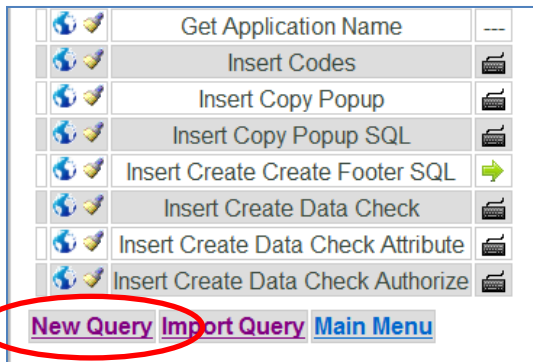
This completes the example “Shopping Lists”.

## 6. Creating Your Own Database Application

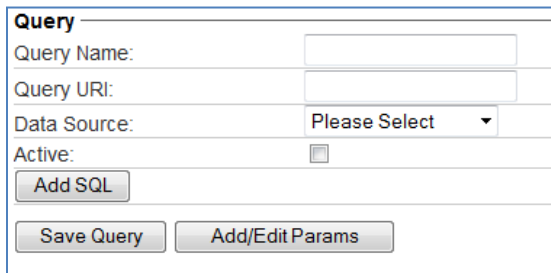
In addition to the capabilities of **My Data On The Web™**, **SQL ICE™** provides a complete Internet computing environment for creating Web database applications that access existing databases and database servers outside the **SQL ICE™** framework. The Admin user creates **SQL ICE™** queries that can perform all the operations necessary for a shared database application.

### 6.1. Create Query

The admin user creates new queries by clicking the New Query' link at the bottom of any list of queries.



This will open the Query Editor for a new Query.



**Query**

Query Name:

Query URI:

Data Source:

Active:

Enter the Query Name you want users to see on the Application Menu, a valid Query URL, and select a Data Source from the defined Connections. When you are ready to test your Query, click the Active checkbox to make the Query runnable.

When you click the Add SQL button, you will be taken to the SQL editor to enter your SQL statements. The default Query Output Type is 'Web Display' for interactive end-user applications. The SQL statement may be a Select, Insert, Update, Create, Delete, Drop, or many other statements. The syntax is dependent on you're the syntax of the database specified in the Data Source and its corresponding Connection.

For instance, you may have a Customers table and want to display all Customers with a name starting with a particular string. In many SQL dialects, your statement would look something like this:

**Query Sql**

Output Type: Web Display

Sql:

```
Select * from Customer where Customer_Name like concat(:Name, '%')
```

Click the 'Save SQL' button to return to the Query Editor.

## 6.2. Parameters

Then click 'Add/Edit Params' to enter the definition of the 'Name' parameter.

**Query**

Query Name:

Query URI:

Data Source: SQLIce Database

Active:

[Add Query Schedule](#)

[New SQL](#)

[Link to Existing SQL](#)

[Edit Attributes](#)

[Edit](#) Web Display

The definition for Name looks like this:

**Query Parameters**

Remove	Parameter Type	Default Value	Name	Display Name	Editable
<input type="checkbox"/>	String Generator		Name	Customer Name: <input style="width: 80%;" type="text"/>	<input checked="" type="checkbox"/>

There are many kinds of parameters and built-in parameter generators.

Click 'Save Query' and you will be returned to the Query Editor. You can test your Query by clicking on the 'Web Display' link and continue to edit it by clicking on the 'Edit' link next to the 'Web Display' link. You may want to add Web Display Header Web Display Footer queries,

### 6.3. Other Query SQL

Any SQL ICE query may have an optional 'Authorize' SQL statement that runs in the context of the target database and enforces whatever control the SQL ICE administrator chooses to enforce. For SQL ICE internal queries, the Authorize SQL usually only checks whether the user is an Admin or not (available through the built-in "Is User Query Admin" parameter generator). For your production queries, you can construct a query that enforces whatever security your target database or application requires.

### 6.4. Publishing Your Query

We you are satisfied with your Query, you will likely want to add an Application Attribute by clicking on the 'Edit Attributes' link. This will make your Query appear on Application Menu.

A typical application will have from a handful to many dozens of Queries with Inserts, Updates, Deletes, and Selects to maintain the data. As you may have seen the **My Data On The Web™** section, one of the powerful features of **SQL ICE™** is the ability to craft HTML formatting and especially HTML links in your SQL to create rich applications including menus, images, and even JavaScript.

### 6.5. Examples

Your **SQL ICE™** distribution includes two sample applications to demonstrate some of the feature available for Query designers. The 'Hello' application is a very simple single-table application that shows how to do pagination and create navigation between the list, add, modify, and delete functions. There is a much more representative application from both the 'Demo' and 'Invoicing' links. The 'Invoicing' link exposes only the queries an end-user would see and the 'Demo' link is for Admin users that need to understand how the functionality is implemented.

## 7. Advanced Features

This section contains information about some of the more advanced features of this version of **SQL ICE™**.

### 7.1. Upload/Download

The *Upload/Download* tab provides the capability to upload data from a CSV file into your **My Data On The Web™** database application. You can also download data from your application as a CSV file.

#### 7.1.1. CSV Upload

There are 4 main steps you must complete in order to upload a CSV file, or a spreadsheet saved as a CSV file, into a **My Data On The Web™** database:

1. Add CSV to the Insert query
2. Verify the format of the CSV column headings
3. Create the Upload CSV logic
4. Upload the CSV file

##### 7.1.1.1. Add CSV to the Insert Query

When you executed step 2 – *Generate My Data Table*, **My Data On The Web™** automatically created an Insert query that enables the entry of data from the screens that are created in step 3 – *Create My Data Pages*.

In order to populate a table from a CSV file, you need to add CSV to this Insert query.

We will use the STORES table from the “Shopping Lists” example that is included in your download and that is used throughout section 5 of this User Guide, [Creating a Database Application](#).

From the Queries tab, click any application, and filter for the Insert [Table] query; e.g., Insert Stores.

Utility - Queries	
Query name	Insert Stores
Application	*
Enabled Only?	False ▾
Query URL name	*
<input type="button" value="Web Display"/>	

Click the edit icon, then click the *Edit* link for *Web Display*.

Query Name: Insert Stores  
Query URI: InsertStores  
Data Source: SQLIce Database  
Active:   
[Add Query Schedule](#)  
[New SQL](#)  
[Link to Existing SQL](#)  
[Edit Attributes](#)  
**Output Type**  
[Edit](#) Web Display  
[Edit](#) Redirect  
[Edit](#) CSV  
Save Query Add/Edit Params

Highlight and copy all of the SQL statements.

Query Sql  
Output Type: Web Display  
Sql:  
Insert into Stores(  
STORES.STORE\_NAME,  
STORES.LOCATION,  
STORES.PHONE,  
STORES.STORE\_TYPE) values (  
:STORE\_NAME,  
:LOCATION,  
:PHONE,  
:STORE\_TYPE)

Click the browser *back* button, and then click *New SQL*.

Query Name: Insert Stores  
Query URI: InsertStores  
Data Source: SQLIce Database  
Active:   
[Add Query Schedule](#)  
[New SQL](#)  
[Link to Existing SQL](#)  
[Edit Attributes](#)  
**Output Type**  
[Edit](#) Web Display  
[Edit](#) Redirect  
[Edit](#) CSV  
Save Query Add/Edit Params

Select “CSV” as the *Output Type*, paste in the SQL statements that you copied, and click *Save SQL*.

**Query Sql**

Output Type: CSV

Sql:

```

Insert into Stores(
  STORES.STORE_NAME,
  STORES.LOCATION,
  STORES.PHONE,
  STORES.STORE_TYPE) values (
  :STORE_NAME,
  :LOCATION,
  :PHONE,
  :STORE_TYPE)
        
```

Click *Edit Attributes*, then click *Add Attribute*, and then add an Application Attribute of “Upload/Download” to make this query visible in the Upload/Download tab.

**Query**

Query Name: Insert Stores

Query URI: InsertStores

Data Source: SQLIce Database

Active:

[Add Query Schedule](#)

[New SQL](#)

[Link to Existing SQL](#)

[Edit Attributes](#)

**Output Type**

[Edit](#) Web Display

[Edit](#) Redirect

[Edit](#) CSV

**Attributes for Query: Insert Stores**

Nothing found to display.

[Add Attribute](#) [Main Queries Page](#)

**Utility - Add Query Attribute**

Attribute Name: Application

Attribute Value: Upload/Download

**Attributes for Query: Insert Stores**

Name	Value	Actions
Application	Upload/Download	<a href="#">Edit</a> <a href="#">Delete</a>

[Add Attribute](#) [Main Queries Page](#)

Click *back* 3 times until you are back to the Query edit screen. Click *Add/Edit Params*, for use in the next step.

### 7.1.1.2. Verify Format of CSV Column Headings

The column headings in your spreadsheet or CSV file must match EXACTLY the values in the Query Parameters (Params) – UPPERCASE\_NO\_SPACES. You must make the necessary changes before uploading.

Open your CSV file so you can edit the column headings if needed.

Refer back to the Query Parameters (Params), and note the values in the Name field.

Remove	Parameter Type	Default Value	Name	Display Name	Editable	Validator Key	Validator Param	Display Weight
<input type="checkbox"/>	String Generator		STORE_NAME	Store name	<input checked="" type="checkbox"/>			2.0
<input type="checkbox"/>	String Generator		LOCATION	Location	<input checked="" type="checkbox"/>			3.0
<input type="checkbox"/>	String Generator		PHONE	Phone	<input checked="" type="checkbox"/>			4.0
<input type="checkbox"/>	String Generator		STORE_TYPE	Store type	<input checked="" type="checkbox"/>			5.0

Make the necessary changes and save the CSV file.

	A	B	C	D
1	STORE_NAME	LOCATION	PHONE	STORE_TYPE
2	Dealer Jane's	Utopia, MO	(999) 240-8404	Grocery
3	Do-It-Yourself	Serendipity, MO	(777) 333-5555	Hardware
4	Home Improvement Superstore	Metropolis, MO	(555) 321-1234	Hardware
5	Save On Food	Metropolis, MO	(555) 987-5544	Grocery
6	Things & Stuff	Metropolis, MO	(555) 654-9876	Department
7	Wholesome Groceries	Utopia, MO	(999) 357-1591	Grocery

### 7.1.1.3. Create the Upload CSV Logic

Click the *Upload/Download* tab, then click the link *Upload/Download*, and click *Add CSV Upload/Download*.

Leave *Source Query ID* empty, in *Destination Query ID*, select "SQL Ice Database - Insert [Table]"; e.g., SQL Ice Database - Insert Stores, and give it a name such as "Upload Stores", then click *Web Display* to save it.

### 7.1.1.4. Upload the CSV file

Click the *Upload* link.

Delete	Upload/Download Name	Go	Type	Source Query	Download	Source DB	Destination Query	Upload	Destination DB
	Upload Stores		CSV				Insert Stores	<a href="#">Upload</a>	SQLIce Database

Click *Browse* and find your CSV file, then click *upload*.

**Upload**  
**Insert Stores**

File: T:\BIT\SQL ICE\Webina  (100MB limit)

You should see "All records successful".

Total Records	Success	Failures
6	6	0
All records successful.		

View that table to verify that your data was inserted correctly.

	Store Name	Location	Phone	Store Type
	<input type="text"/>	<input type="text"/>	<input type="text"/>	Department ▾
	Dealer Jane's	Utopia, MO	(999) 246-8464	Grocery
	Do-It-Yourself	Serendipity, MO	(777) 333-5555	Hardware
	Home Improvement Superstore	Metropolis, MO	(555) 321-1234	Hardware
	Save On Food	Metropolis, MO	(555) 987-5544	Grocery
	Things & Stuff	Metropolis, MO	(555) 654-9876	Department
	Wholesome Groceries	Utopia, MO	(999) 357-1591	Grocery

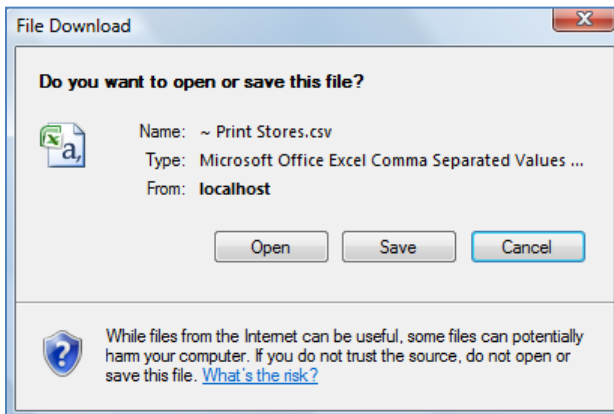
### 7.1.2. CSV Download

The *~ Print [Table]* utilities already have the *Output Type* of "CSV", so we can use these to download data as a CSV file without having to make any modifications to the queries.

We'll use the STORES table again as an example.

Click *My Data* and then click *Go* for *~ Print Stores*. Just click the CSV button.

Then just click *Open* or *Save* in the File Download dialog box.



## A. Appendix

### A.1. Contact BIT

Business Integration Technology, Inc.

1310 Papin Street  
First Floor Center  
St. Louis, MO 63103

info@BusinessIntegrationTechnology.com

Phone number is 314-635-6351

Fax number is 314-601-3092

### A.2. Slow Response Time

If you are experiencing slow response time, clear your browser cache by deleting your browser history.

### A.3. User Forum

Additional help topics, FAQs, and updates can be found on our web site in the **My Data On The Web™** [User Forum](#).

### A.4. External Links

#### A.4.1. Add Java to your PATH

#### A.4.2. "Add Java to your PATH" Web search results