# SQR Express™ Version 3.4
## Developing SQRs Has Never Been So Easy!
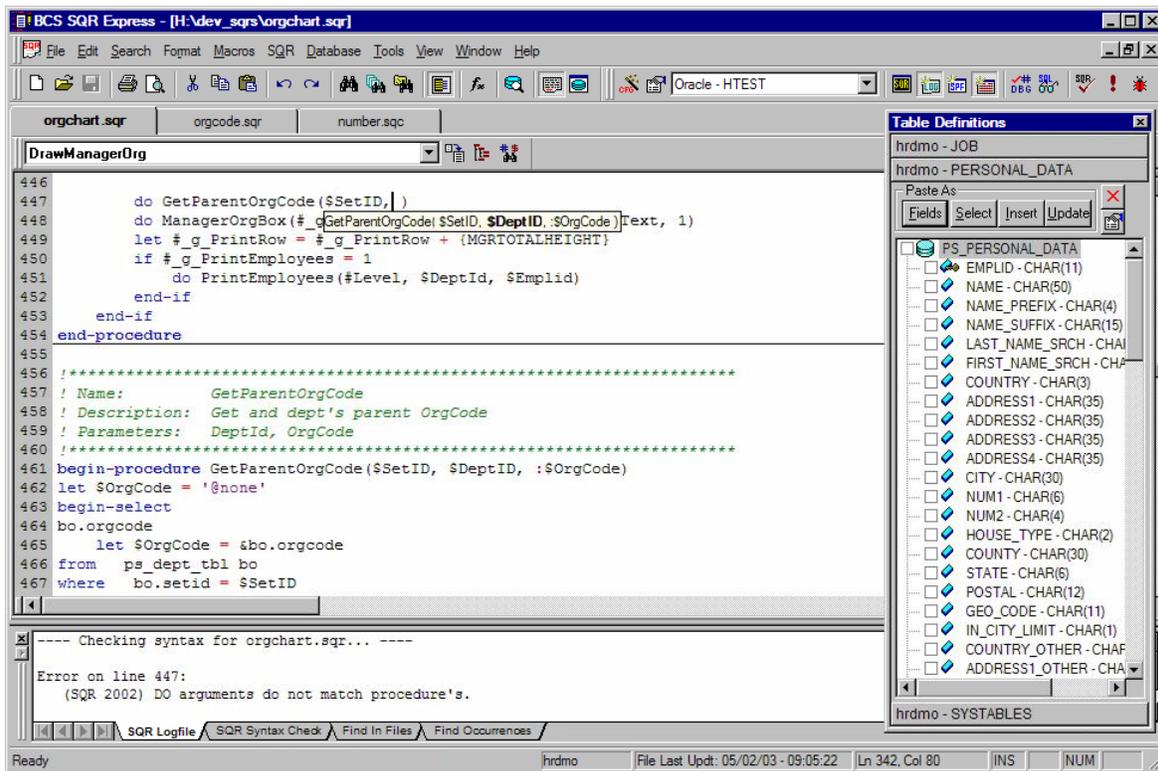


## SQR Express Is An Integrated SQR Development Environment With The Following Features:

- Color Syntax Highlighting
- Context Sensitive SQR Command Help
- Interactive Debugging is now available through SparkPath Technologies' SP Debugger for SQR
- Automatically View SQRW Output in SQRViewer, a Browser, Acrobat or a Text Viewer
- SQR/SQC Structure Viewer with Print Capabilities
- Code Tips for SQR Functions and User Defined Procedures
- SQR Command/Function Dictionary – With Integrated Function Paste and Help
- PeopleSoft SQC Function Dictionaries – With Integrated Procedure Paste and Include File Viewer
- Function Dictionary Editor – Improve Productivity and Code Re-use by Creating Custom SQC Libraries
- Create Custom SQRW Configurations – Use Multiple Versions of PeopleSoft, SQRW and DBMS
- Run SQRs With a Single Click
- Check SQR Syntax With a Single Click
- Access Database Table and PeopleSoft Record Definitions Through a Graphical Interface
- Automatic Creation of Select, Insert, Update Statements from DB Tables and PS Record Definitions
- Automatic Code Generation Using Database Table and PeopleSoft Record Definitions
- New SQRs/SQCs Can Be Created Instantly From Predefined Templates –Templates Included
- Create new SQR Procedures Using a Predefined Template – Template Included
- Go To Procedure Definition Command Takes You to a Procedure Definition, Even if it is in an SQC
- Output Windows For SQRW Log Files, SQRW Syntax Checking and Find In Files
- Built in Grep like utility called Find In Files
- Page Layout Feature that lets You Print 1, 2, or 4 Logical Pages on a Single Sheet of Paper
- Fully Integrated FTP That Allows You to Browse, Open and Save Files to a FTP Host
- Built-in File Compare - Making it Easier to Compare Different Version of the Same SQR
- Build Merged SQRs by Expanding All #Include files in Place
- Find All Occurrences of any Text in a SQR and All of Its #Include Files
- Show All of the SQR Variables You Have Created – In Your SQR and All of Its #Include Files

**And much more…**

# A Closer Look at Some of SQR Express's Features:

## SQR Express is an editor designed specifically to work with SQRs and SQCs.
How does that make a difference?  Let's take a look…

It starts with something as simple as selecting SQR code.  For example, double-clicking on a variable in SQR Express selects the complete SQR variable.  That's because SQR Express knows what an SQR variable can look like, but other editors don't.

Double-clicking on a variable in SQR Express:

```
245    do SetOrgCode(&rtv.setid_dept, &chld.tree_node, $OrgCode)
```

Double-clicking on a variable in other editors:

```
245    do SetOrgCode(&rtv.setid_dept, &chld.tree_node, $OrgCode)
```

## But, let's see where it really can make a difference…

**The SQR Express Procedure Listbox –** Shows the procedure where the cursor is currently located.  To see a list of all procedures defined in the SQR, click on the Procedure Listbox drop-down arrow.  You can go to a particular procedure just by selecting it from the list.
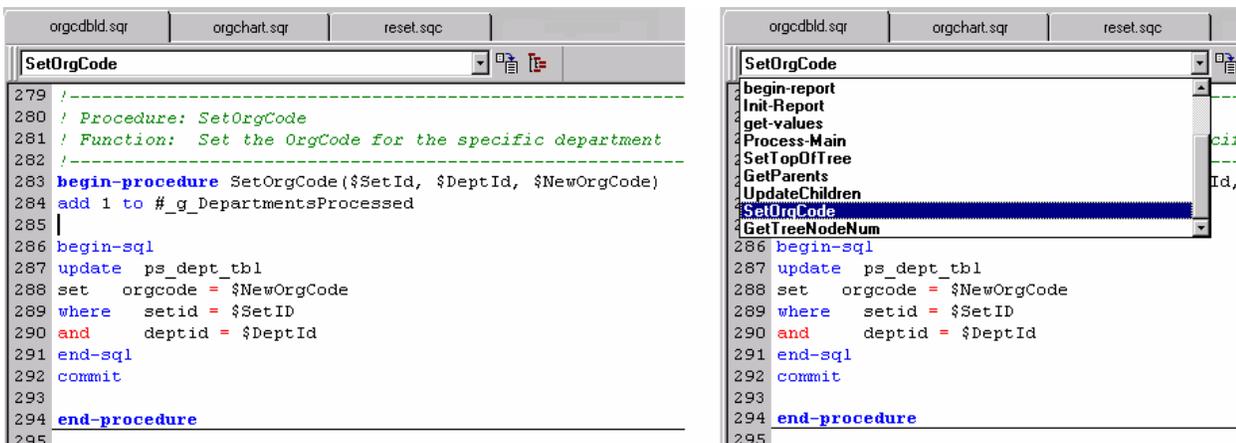


**The SQR Express Function/Procedures Listbox with Auto-Complete** – As you develop an SQR, if you decide you want to use a procedure or function call, but can't remember its name, press Ctrl+Space.  A list box containing all SQR functions/commands as well as all locally defined procedures will appear.  As you continue to type, the list will scroll to the closest matching function/procedure or you can navigate the list by using the scroll bar.  Once you find the procedure you want to use, just press enter and the entry that is currently highlighted will be inserted into your SQR.
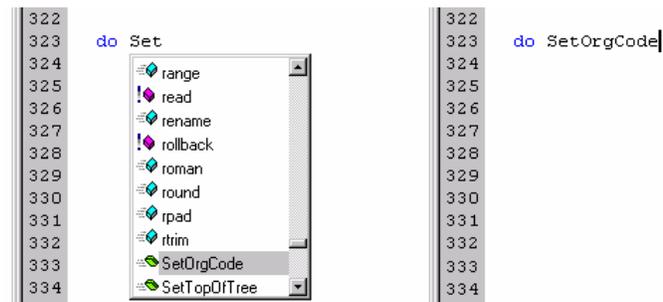
**Can't Remember the Parameters for a Procedure?  Code Tips to the Rescue** – When you type an open parenthesis, '(' , SQR Express will show a tooltip telling you the parameters required by the procedure or function.

```
322
323     do SetOrgCode(|
324
325
        SetOrgCode( $SetId, $DeptId, $NewOrgCode )
```
OR
```
330     let #rate = round(|
331
332
        round(num_value, place_num_value)
```

**Need to Understand How an SQR Works?** With SQR Express's SQR Structure viewer you can see how an SQR is built. See its structure, procedures, SQL statements and SQCs:
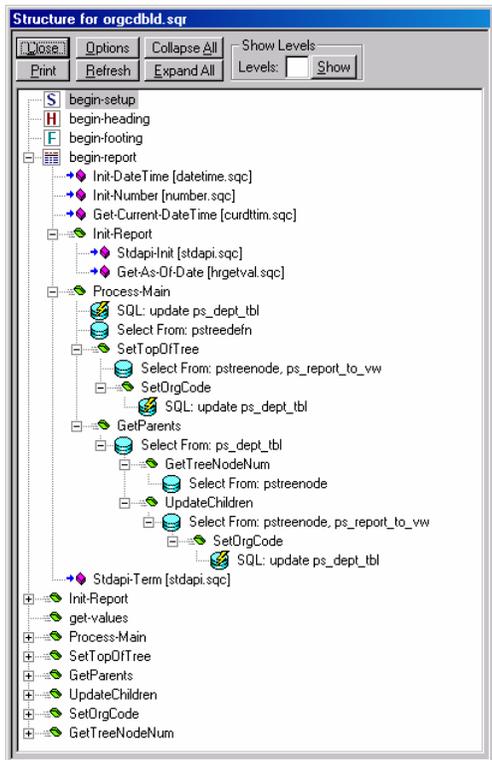


You can print the SQR Structure for viewing or to supplement your documentation.  You can also use it as a navigation tool.  Click on any line in the structure and SQR Express moves to that line in the SQR.

**What SQCs does the SQR use and where can I find them?** – Just use the show SQCs command and you'll see a list of all SQCs including the nested SQCs (SQCs included in other SQCs), the location where they were found and the order in which they occur in the SQR.
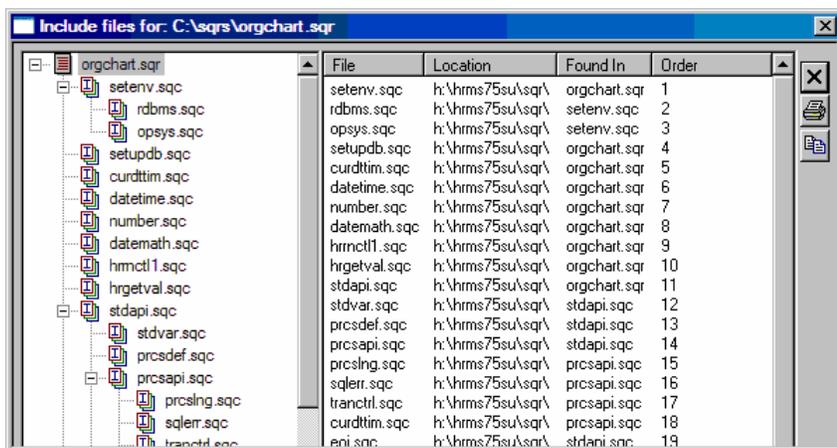


To examine an SQC a little closer, just double-click on the SQC in the list and SQR Express opens the SQC.

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**Where Is That Procedure Defined?**  SQRs can contain numerous procedures, defined in many different include files (SQCs).  The big question is "where is that procedure defined?"  With numerous SQCs to traverse through, it's a tedious and time-consuming task to find out.  Not with SQR Express.  Just select the procedure name, then right-click and select **Go To Procedure Definition**…  SQR Express then locates the SQC file the procedure is defined in, and opens the SQC to the location of the procedure.  It can't get any simpler!
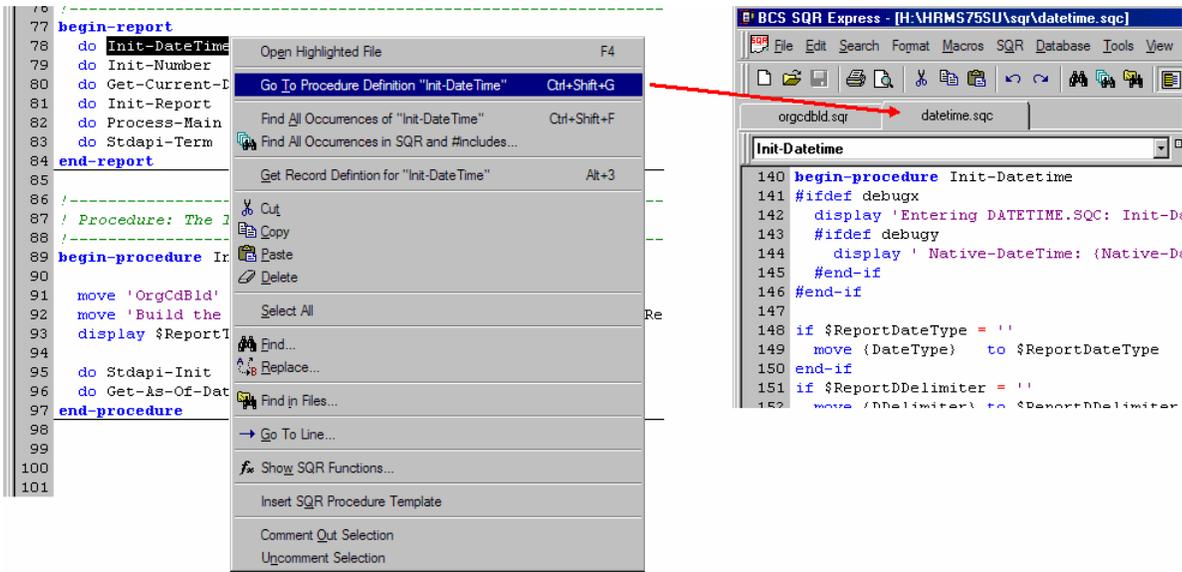


**Where did I use that variable?**  Did you ever wonder where all of the references to a specific variable were in your SQR?  Or for that matter, where all occurrences of any piece of code are in your SQR?  With SQR Express, it's easy to find out.  Select the text, and then right-click and select **Find All Occurrences of**…  Presto, SQR Express provides you with a printable list of all occurrences of the specified text.
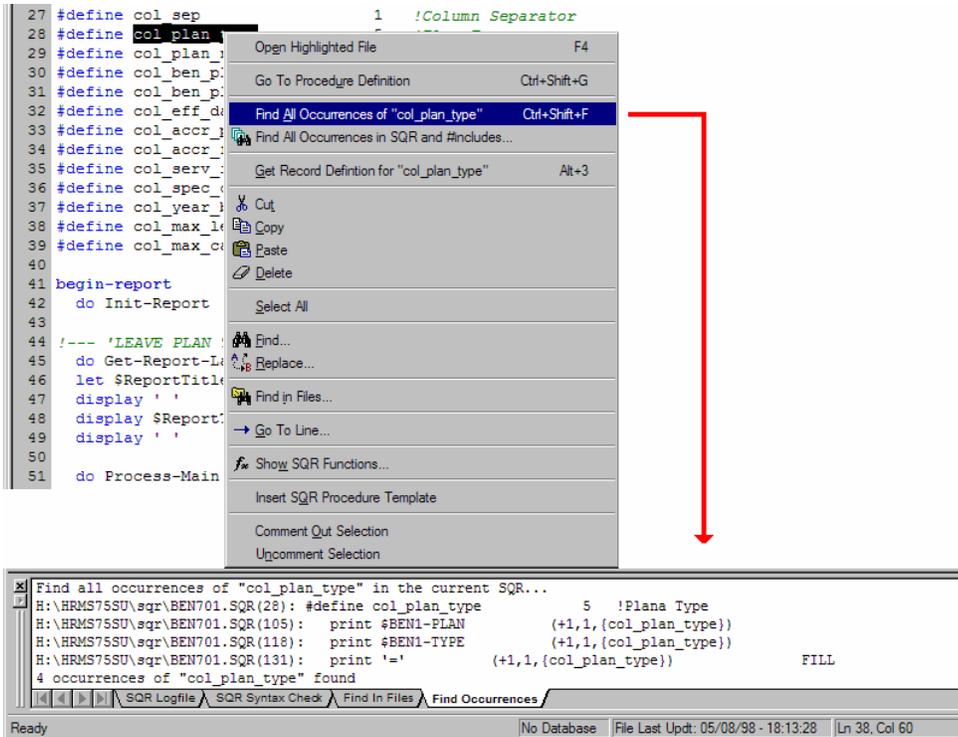


To go to one of the "Occurrences", simply double-click on **Line #** and SQR Express will take you there!

# Getting Started is the Hardest Part…

Starting an SQR from an empty page can be difficult, time consuming and intimidating for new users of SQR. Even PeopleSoft recommends you start by using an existing SQR as a template. SQR Express has taken this concept a step further. When you use the File New command, you are automatically presented with an option of how to create your new SQR. SQR Express comes with a predefined template for both SQRs and SQCs. Both templates are designed to run
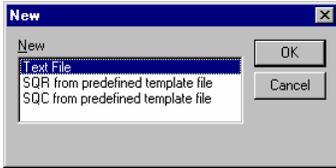
correctly without any additional work, this way you start out on the right foot. The templates incorporate common PeopleSoft SQR layout and procedures such as report initialization and process scheduler API calls.

If you don't like the SQR Express templates, or you want something a little different, no problem. You change what template SQR Express uses for the File New command. It's that simple.

## Creating Procedures

SQR Express also includes a template for creating procedures. With just a couple of clicks, you are off to quick start. By using a template, you cut down on some of the tedious work involved in creating procedures, plus you improve your SQR's consistency and documentation. To insert a procedure template, select **Insert SQR Procedure Template** from the **Edit** menu, or right click in the editor and select **Insert SQR Procedure Template**.

```
127 !------------------------------------------------!
128 ! Name:        Procedure-Name                    !
129 ! Description: Describe the purpose for the procedure !
130 ! Parameters:                                    !
131 !    Input:      #EMPLID        - Employee Id     !
132 !    Output:     $JOBCODE       - Jobcode         !
133 !------------------------------------------------!
134 begin-procedure Procedure-Name
135
136 end-procedure
```

If you do not like the procedure template SQR Express uses, you can change it.

## Forget the SQRW Command-Line Parameters

One of the problems in using SQRW has been deciding which SQRW Command-line parameters to use as well as configuring SQRW to work with multiple databases, different include paths, etc. SQR Express works hard to alleviate these problems in a couple of ways. 1) SQR Express puts the most common SQRW Command-line parameters in an easy to use SQR Configuration Wizard; and 2) SQR Express lets you create as many SQRW configurations as you want and switching between them is as easy as selecting an SQRW configuration from the toolbar. Here is how it works:

At install time, SQR Express creates a **default** SQRW Configuration based on SQRW information you provide. You can edit this configuration by simply using the menu choice **SQR** – **SQRW Configuration Wizard**… or click on the equivalent toolbar button. Then the SQRW Configuration Wizard will guide you through the setup of SQRW.
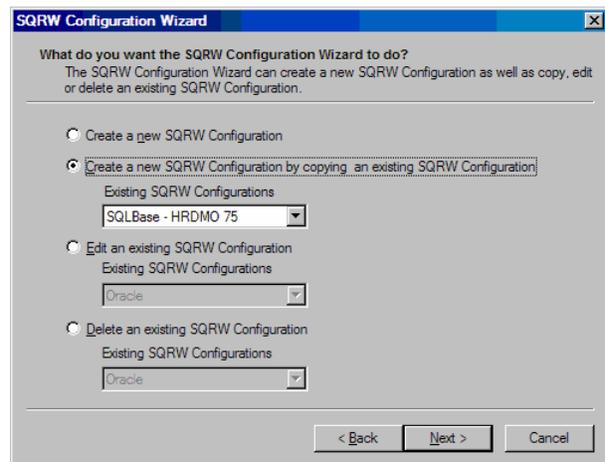
Now that you have created several different SQRW Configurations, you can switch between configurations by selecting the configuration you want from the toolbar drop-down list box.
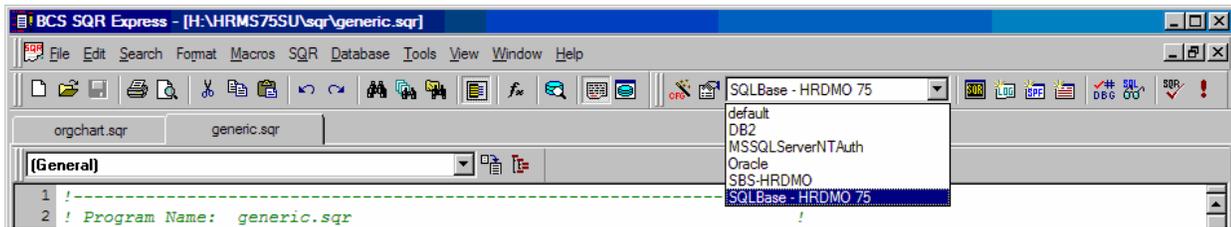


Once you have selected a configuration, every SQR you run will use that configuration.

For the more advanced features of SQRW, you can use the SQR Express SQRW Configuration dialog, which makes it easy to set or change almost any SQRW command-line flag.

# How Do You Actually Run an SQR?

That is the easy part. All you need to do is select the menu item **SQR** – **Run Current SQR using SQRW** or click on the equivalent toolbar button. SQR Express will run the current SQR using the currently selected SQRW Properties Configuration. That is it!

SQR Express also lets you check the syntax of an SQR without actually running it. Just select the menu item **SQR** – **Check/Validate SQR Syntax**. SQR Express will have SQRW check the syntax of your SQR and report the results. If there is an error, you can click on the error line number and SQR Express will take you to that line.
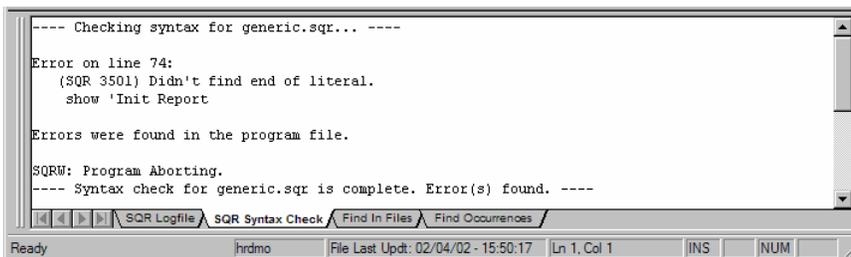


When you turn on the Auto Open SQR Log File feature, SQR Express will open the current SQRs log file when the SQR finishes running.
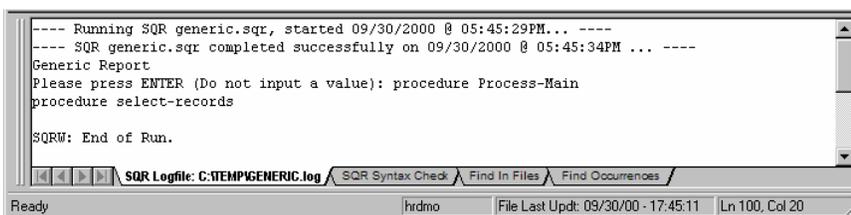


You can also tell SQR Express to automatically open SQRViewer when the SQR finishes running so you can see the result of your work. Or you can have SQR Express automatically open the SQR output file in the appropriate viewer. Printer files are opened in a text viewer, PDF files in Acrobat and HTML files in your default browser. The choice is up to you.

# What Else Can SQR Express Do?

## PeopleSoft Record Definitions

To make using SQR Express easy, access to PeopleSoft record definitions is critical.  That is why SQR Express includes direct access to PeopleSoft record definitions utilizing the PeopleSoft Open Query API.  It is as simple as logging on to PeopleSoft and selecting the records you want to view.  However, you can do more than just viewing records.  From a PeopleSoft record definition you can create Select, Insert and Update statements with just a few clicks of a button.  And with the Fields feature and SQR Express substitution variables, you can automagically generate code to initialize variables for each field, print/show fields or variables, call functions and much more.

Menu:      Database – View PeopleSoft Record Definitions…
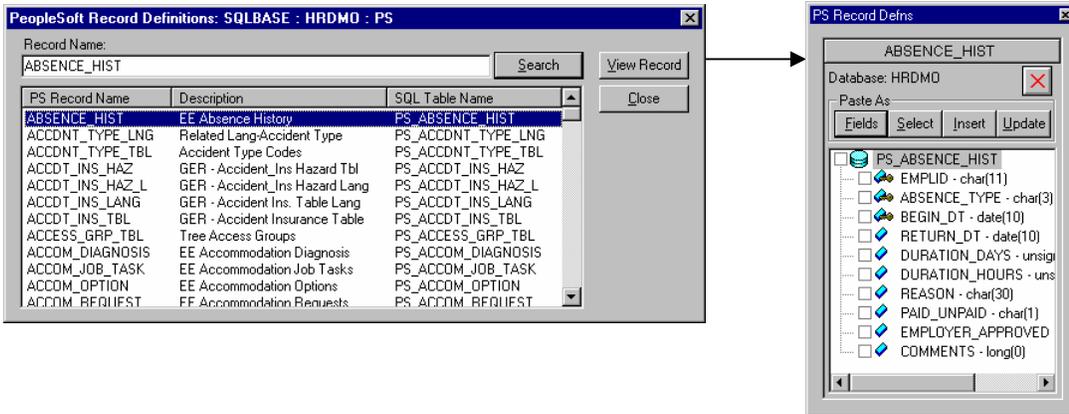


The PS Record Defns window can hold multiple record definitions from multiple PeopleSoft Databases (different PS Versions, Databases or even different RDBMS).  The PS Record Defns window can float freely on your desktop or it can be docked in the SQR Express application (as shown on page 1)

## The Simple Way to Create a Select Statement

| Click the check boxes for the fields you want.  Then click **Select** | Choose the select statements options you want to use (default options are shown) and click on **OK** | The new select statement is inserted directly into SQR Express. |
| --- | --- | --- |
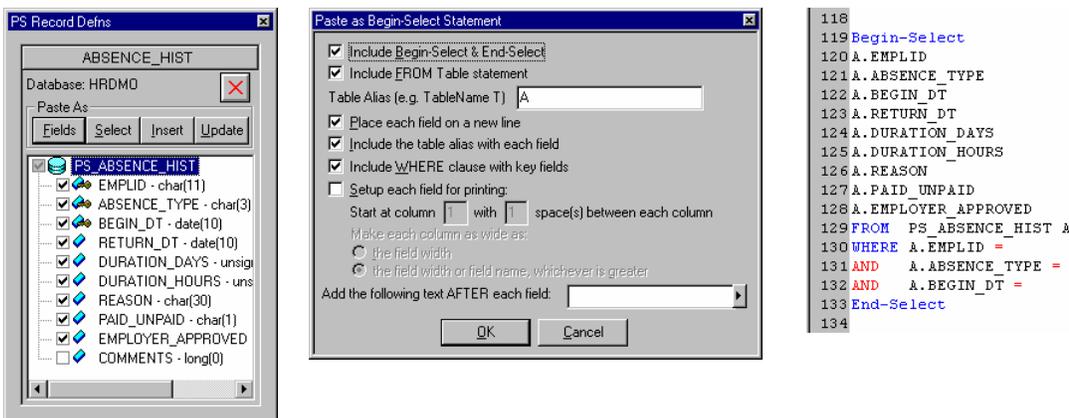


This is just one simple example of creating a select statement and you can do much more…

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# The Simple Way to Create an Insert Statement

| | | |
|---|---|---|
| Click the PS_ABSENCE_HIST check box to select all fields. Then click **Insert** | Choose the insert statements options you want to use (default options are shown) and click **OK** | The new insert statement is inserted directly into SQR Express. |
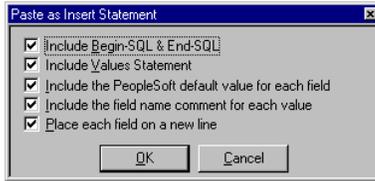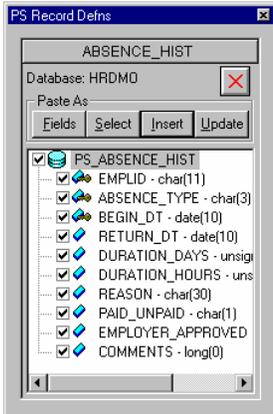


```
119 Begin-SQL
120 INSERT INTO PS_ABSENCE_HIST
121 (
122 EMPLID
123 ,ABSENCE_TYPE
124 ,BEGIN_DT
125 ,RETURN_DT
126 ,DURATION_DAYS
127 ,DURATION_HOURS
128 ,REASON
129 ,PAID_UNPAID
130 ,EMPLOYER_APPROVED
131 ,COMMENTS
132 )
133 Values
134 (
135 ' '          ! EMPLID
136 ,' '          ! ABSENCE_TYPE
137 ,<rqrd>       ! BEGIN_DT
138 ,NULL         ! RETURN_DT
139 ,0            ! DURATION_DAYS
140 ,0            ! DURATION_HOURS
141 ,' '          ! REASON
142 ,'U'          ! PAID_UNPAID
143 ,'N'          ! EMPLOYER_APPROVED
144 ,NULL         ! COMMENTS
145 )
146 End-SQL
147
```

Creating a insert statement has never been so easy. But more importantly, you get it right the first time. The "field name comment" for each field means you never have to guess again which line is for which field.

# Using the Fields Button

The Fields Button is a powerful tool that allows you to generate SQR code for each field that is selected. Using text and SQR Express substitution variables, you can quickly and easily generate SQR code to initialize variables, show field values, call functions, and perform other operations. The example below shows how to generate Get_Field_Information code (Get_Field_Information is a PeopleSoft delivered procedure).

| | |
|---|---|
| Click the check boxes for the fields you want. Then click **Fields** | In this situation, a predefined Paste Fields Definition called Get_Field_Information was used. Click **Use Existing Definition…** and open the Get_Field_Information file. Then click **OK** |
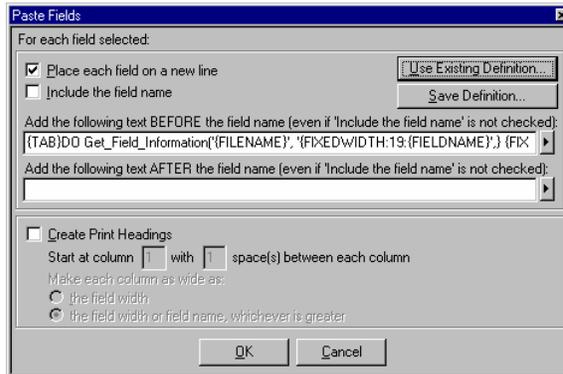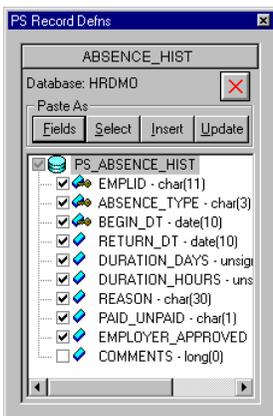


SQR Express allows you to create Paste Field Definitions (PFD) on the fly or you can create and save PFDs that you and other developers can use over and over. SQR Express is delivered with 5 predefined Paste Field Definitions (PFD) to give you a running start:

Get_Field_Information
InitializeSQRVariables
InitializeSQRVariablesToFldDefaults
MoveFieldsToVariables
ShowEachFieldValue

| | |
|---|---|
| A new procedure call was generated for each field that was selected. The results are then inserted directly into SQR Express. | |

```
119    DO Get_Field_Information('GENERIC', 'EMPLID',             $TITLE_EMPLID,             #DW)
120    DO Get_Field_Information('GENERIC', 'ABSENCE_TYPE',       $TITLE_ABSENCE_TYPE,       #DW)
121    DO Get_Field_Information('GENERIC', 'BEGIN_DT',           $TITLE_BEGIN_DT,           #DW)
122    DO Get_Field_Information('GENERIC', 'RETURN_DT',          $TITLE_RETURN_DT,          #DW)
123    DO Get_Field_Information('GENERIC', 'DURATION_DAYS',      $TITLE_DURATION_DAYS,      #DW)
124    DO Get_Field_Information('GENERIC', 'DURATION_HOURS',     $TITLE_DURATION_HOURS,     #DW)
125    DO Get_Field_Information('GENERIC', 'REASON',             $TITLE_REASON,             #DW)
126    DO Get_Field_Information('GENERIC', 'PAID_UNPAID',        $TITLE_PAID_UNPAID,        #DW)
127    DO Get_Field_Information('GENERIC', 'EMPLOYER_APPROVED',  $TITLE_EMPLOYER_APPROVED,  #DW)
```

# Function Dictionary for SQR Commands & Functions and SQC Procedures

What makes SQR so powerful? Its built in commands and functions as well as the ability to create reusable libraries of procedures that perform specific tasks. PeopleSoft has spent thousands of hours creating SQCs and procedures to perform common PeopleSoft SQR tasks. The problem is most developers do not know about them and as a result do not use them. That all changes with SQR Express.

SQR Express includes a Command/Function/Procedure (CFP) dictionary for SQR commands and functions as well as procedures created by PeopleSoft. The CFP dictionary logically groups commands, functions and procedures based on their functionality. For example, all CFPs related to file operations would be grouped into a category called **File Functions**. Using a command, function or procedure is as simple as selecting it from a list and pasting it into your SQR. And when you paste a procedure from a SQC, the **#include '<filename.sqc>'** statement for the SQC is added to the SQR.

Menu:    Edit – Insert SQR Function… or
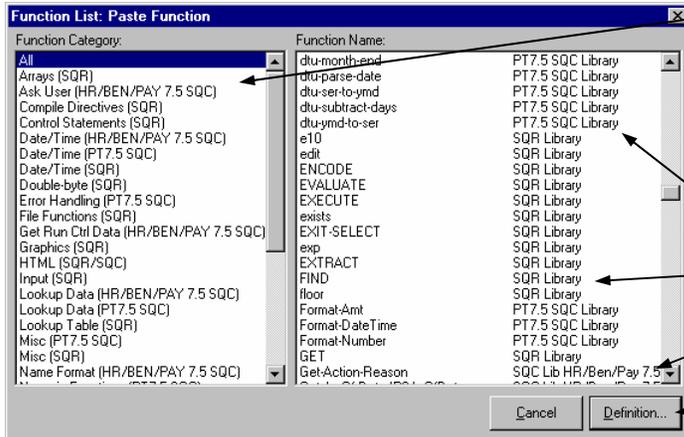
Commands, Functions and Procedures (CFP) List. Clicking on a "Function Category" shows all CFPs related to the function category you selected. Choosing "All" will show you all CFPs in the Function Dictionaries you have available.

PeopleTools SQC Procedures

SQR Commands and Functions

Functional SQC Procedures

Click **Definition…** to see and paste a CFP into an SQR. See examples below.

### SQC Procedure Definition Dialog
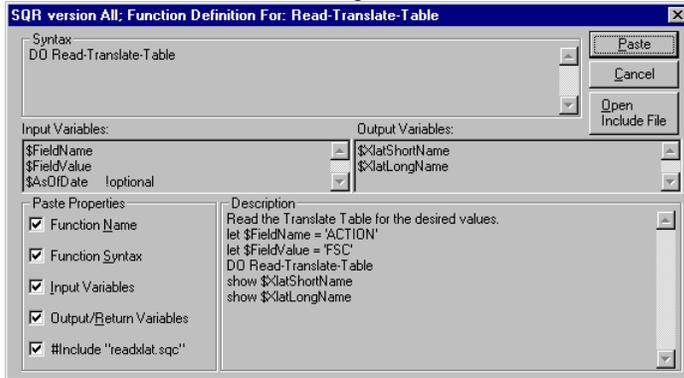
The SQC Procedure Definition dialog allows you see how a specific procedure works, its syntax, globally defined input/output variables, a description and examples of its use.

You can also open the Procedure's include file to see the actual definition.

Lastly, you can paste the procedure directly into the SQR using the Paste button. Paste properties determine what is actually pasted into the SQR.

### SQR Command/Function Definition Dialog
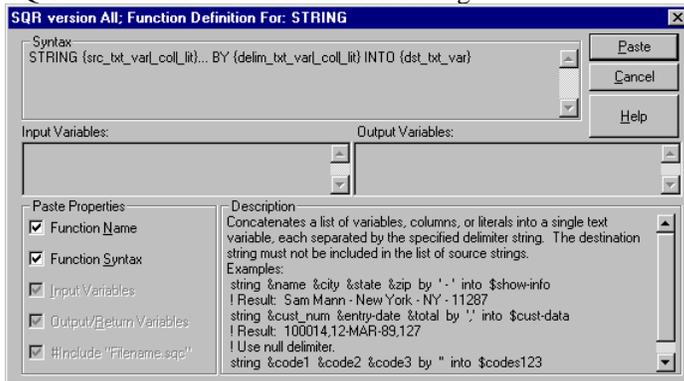
The SQR Command/Function Definition dialog allows you to see how a specific command or functions works, its syntax, input/output variables and a description and examples of its use.

By clicking on the Help button, you can view the SQR help for that command or function.

Lastly, you can paste the command/function directly into the SQR using the Paste button. Paste properties determine what is actually pasted into the SOR.

## Improving SQR Code Reuse

Code reuse is probably the single biggest way to reduce SQR coding time and costs. Making reusable SQR code easily accessible is critical to getting developers to reuse the code. The function dictionary feature of SQR Express greatly improves code reuse by allowing developers to effortlessly use and reuse PeopleSoft delivered SQC functionality. But, that is not enough. Each developer, group or organization may have its own SQC code libraries. As a result, SQR Express has included a Function Dictionary Editor. With the Function Dictionary Editor you can create your own custom function dictionaries that contain your custom procedures or code snippets. These dictionaries can then be easily shared with other developers.
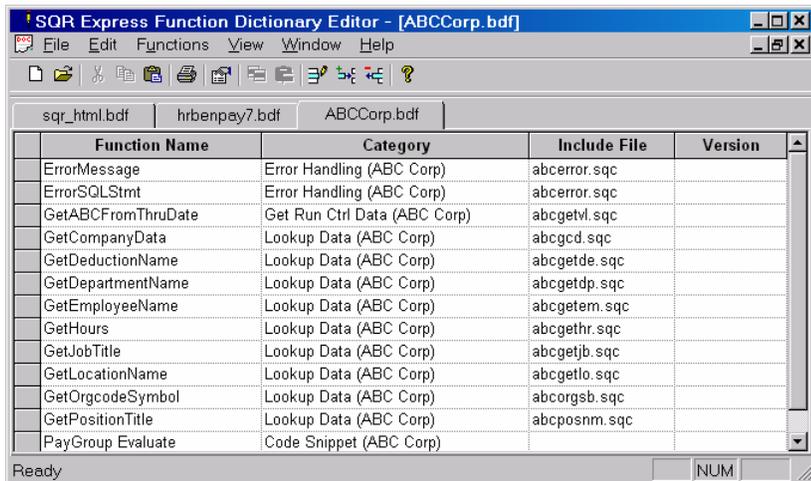


Creating function definitions or code snippets is as easy as providing the information shown in the following dialog:
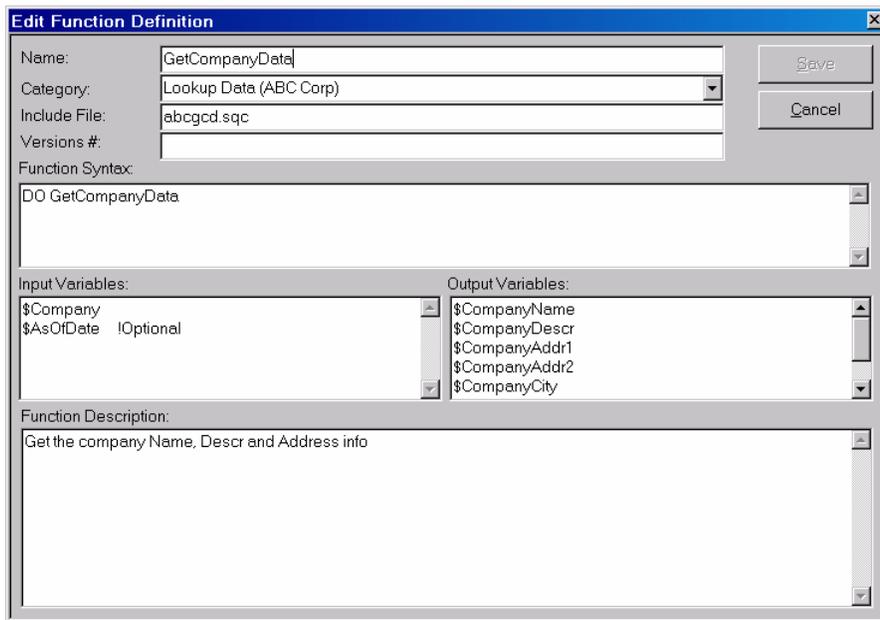


To use your custom function dictionaries, just add the dictionaries to the dictionary list in SQR Express's configuration. It is that easy!

# Now you can interactively debug your SQRs directly from SQR Express with SP Debugger for SQR .

Business Computing Solutions LLC has teamed with
**SparkPath Technologies, Inc.**
to allow you to debug SQRs directly from SQR Express with
**SP Debugger for SQR.**

**It's as simple as:**
1) Install SP Debugger for SQR from SparkPath Technologies , Inc.
2) Restart SQR Express
3) Open the SQR you want to debug and click on the

"Debug SQR using SP Debugger for SQR " toolbar button

For more information or to purchase see SparkPath Technology, Inc:
http://www.sparkpath.com/products.php

**SP Debugger for SQR is a 3rd Party interactive Debugger for SQRs that includes:**

| | Just some of the Features | | | Plus |
|---|---|---|---|---|
| | Step through your SQR program, one statement at a time | | | A clean, GUI-based, easy-to-use interface; no commands to enter |
| | Set and clear breakpoints; run to the next breakpoint | | | View and modify variables, including SQR reserved variables |
| | Step over an entire procedure, or step through it | | | Explore arrays; view and modify individual array cells |
| | Watch the debugger "auto-step" through your program | | | Run until a variable value changes or satisfies a specified condition |
| | Pause program execution at any time | | | Program structure tree, variable list, and other views |
| | Rerun the program from the beginning | | | An integrated profiler identifies long-running program statements |
| | Force a database COMMIT at any time | | | Comprehensive, indexed and searchable help information |

## With SQR Express, Developing SQRs Has Never Been So Easy!

**SQR Express Version 3.4 is available now!**
For More Information: send email to info@BCSTools.com