

What's New for the Database Development Edition of Visual Cafe for Java

The 2.1 release adds the power of JDBC and other enhancements to the functionality and usability of Visual Cafe for Java Database Development Edition. This document describes these features.

The first section, "Support for JDBC," describes enhancements related to JDBC support. The following section, "New features and enhancements," outlines other enhancements that assist you in building Java applets and applications.

Support for JDBC

This version of the Visual Cafe for Java Database Development Edition adds support for data access through JDBC. You can take advantage of JDBC through the following features:

- JDBC Data Access Components

- Mediators
- Editing tools for URL, column, filter, and sort order

To support these JDBC features, some minor changes have been made to the functionality of Visual Cafe.

- dbANYWHERE server requirement

dbANYWHERE is a tool that manages connections between a Java applet or application and one or more databases. It enables you to write database-independent Java applets and applications. Although you can run database-aware Java applets and applications with or without dbANYWHERE, Visual Cafe requires dbANYWHERE at development time for database-aware applets and applications.

- dbANYWHERE upgrade

The dbANYWHERE server and the Java classes used by dbANYWHERE are upgraded in this release. The new server and classes are required by Visual Cafe. You must install the dbANYWHERE upgrade on your dbANYWHERE server machine.

- Legacy support

The open databinding architecture implemented for JDBC is also used for applications and applets that use the dbANYWHERE API. For this reason, some dbAWARE component properties have changed.

However, applications and applets created with previous versions of Visual Cafe that contain dbAWARE components are editable and compilable in this release. When you open an “old” project,

the code is automatically converted to the new dbANYWHERE API implementation.

Code Generation environment setting

You have the option of generating code for the dbANYWHERE API or for the JDBC API. To specify the type of database connection code to generate:

- 1 Select **Environment Options** from the **Tools** menu to display the Environment Options dialog box.
- 2 Select the **Database** tab.
- 3 Specify the type of code to generate by selecting the corresponding radio button in the **Code Generation** group.

The database-aware project wizards and dbNAVIGATOR generate code for the API you select. Please note that the Add Table Wizard does not generate master-detail code for JDBC. You can, however, use the Add Table Wizard to create tables and then implement a JDBC master-detail relationship programmatically.

JDBC Components

The component palette has a new tab entitled JDBC. This tab contains JDBC-based connection components. When you use the JDBC components to setup a database connection for a form, you can use the visual components on the dbAWARE tab to add database-aware fields to the forms. (The dbAWARE visual components can be used with both the JDBC API and the dbANYWHERE API.) For more information on the new JDBC components, see the online help.

ConnectionManager

The ConnectionManager component contains and manages the JdbcConnection objects for a project.

JdbcConnection

The JdbcConnection component represents a connection to a specific data source.

Mediator

The Mediator component allows you to connect a non-dbAWARE component to a database column.

RecordDefinition

The RecordDefinition is a new component that defines the table and columns for a set of records. The RecordDefinition is not contained by a specific form or applet, rather it is contained by the project. Therefore, it can be used by multiple forms.

QueryNavigator

The QueryNavigator component stores the set of records retrieved from the database.

Mediators

In addition to the database-aware components on the dbAWARE tab, you can attach other components to a database column using a mediator. A mediator is a non-visual component that manages communication between a component on a form (typically a visual component) and the JDBC connection components.

For information on using a mediator to connect a non-dbAWARE component to a database column, see the online help.

Editing Tools

Visual Cafe now provides the following graphical tools for editing properties of the JDBC components.

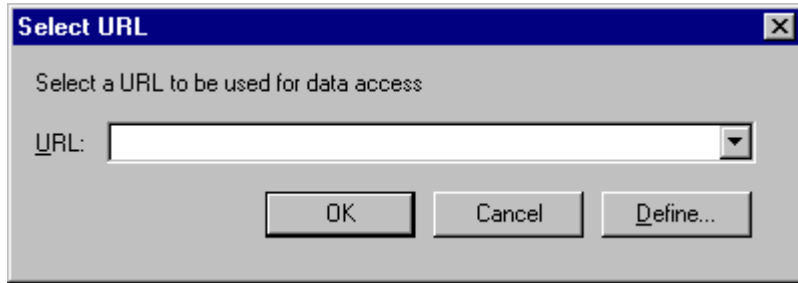
- URL Selection Dialog Box
- URL Editor Dialog Box
- Columns Property Editor
- Sort Order Property Editor
- Filter Property Editor

Visual Cafe has also added functionality to the Create dbAWARE Project Wizard and the Add Table Wizard.

Select URL Dialog Box

The Select URL dialog box enables you to specify the URL for the JDBC Connection object. It is displayed when you click the ellipsis

button in the value cell for the URL property of the jdbcConnection component in the Property List.

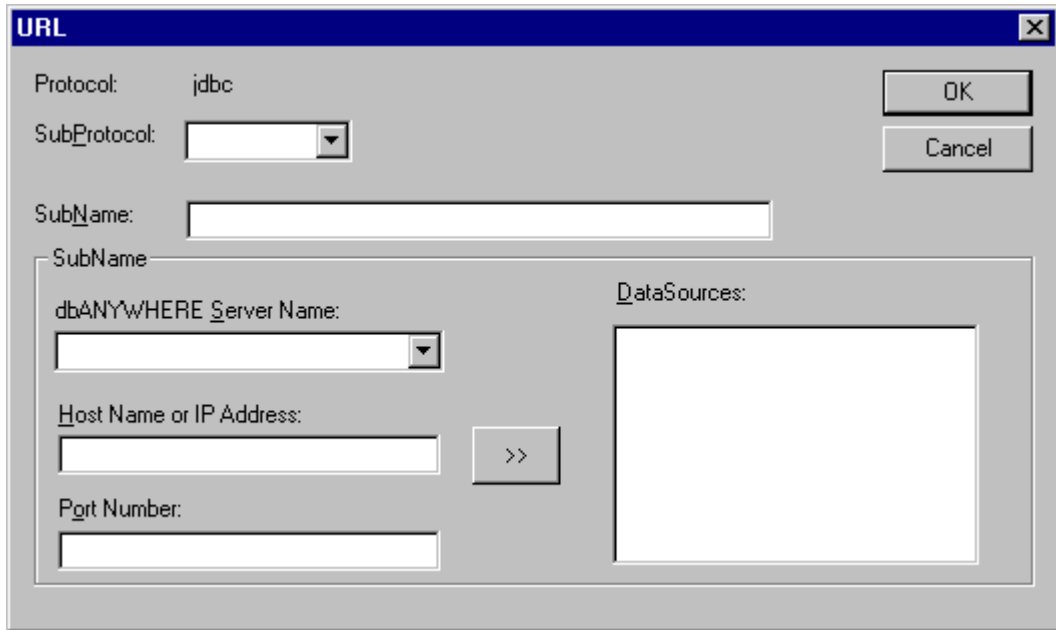


URL dropdown list: You can either type in the URL or select from a list of previously constructed URLs.

Define button: Displays the URL Editor.

URL Editor

The URL Editor assists you in constructing the URL string. It is displayed when you click **Define** in the Select URL dialog box.



The screenshot shows a dialog box titled "URL" with a standard Windows-style title bar (blue with a close button). The dialog has a light gray background. At the top left, there are three labels: "Protocol:", "SubProtocol:", and "SubName:". The "Protocol:" field contains the text "jdbc". The "SubProtocol:" field is a dropdown menu. The "SubName:" field is a text box. To the right of these fields are two buttons: "OK" and "Cancel". Below the "SubName:" field is a section titled "SubName" in a smaller font. This section contains three labels: "dbANYWHERE Server Name:", "Host Name or IP Address:", and "Port Number:". The "dbANYWHERE Server Name:" field is a dropdown menu. The "Host Name or IP Address:" field is a text box. The "Port Number:" field is a text box. To the right of the "Host Name or IP Address:" field is a button labeled ">>". To the right of the "SubName" section is a large empty rectangular box labeled "DataSources:".

Protocol: This field displays the protocol that is used in the URL.

SubProtocol: This dropdown list enables you to select a subprotocol. By default two subprotocols are available, **dbaw** and **odbc**. You can also specify a 3rd-party subprotocol by typing it in.

SubName: This field allows you to specify the remaining substring of the URL. This field is enabled when the **odbc** subprotocol is selected.

When you select the **dbaw** subprotocol, the SubName field is disabled and the SubName group is enabled. This group enables you to construct the URL without having to type it in.

dbANYWHERE Server Name: Use this dropdown list to select a dbANYWHERE server.

Host Name: This field enables you to specify the host name or IP Address of the dbANYWHERE server you want to use.

Port Number: This field allows you to specify the port number of the dbANYWHERE server.

Data Sources: You can select from a list of data sources for the currently selected dbANYWHERE server.

The >> button enables you to populate the Data Sources list from the specified dbANYWHERE server.

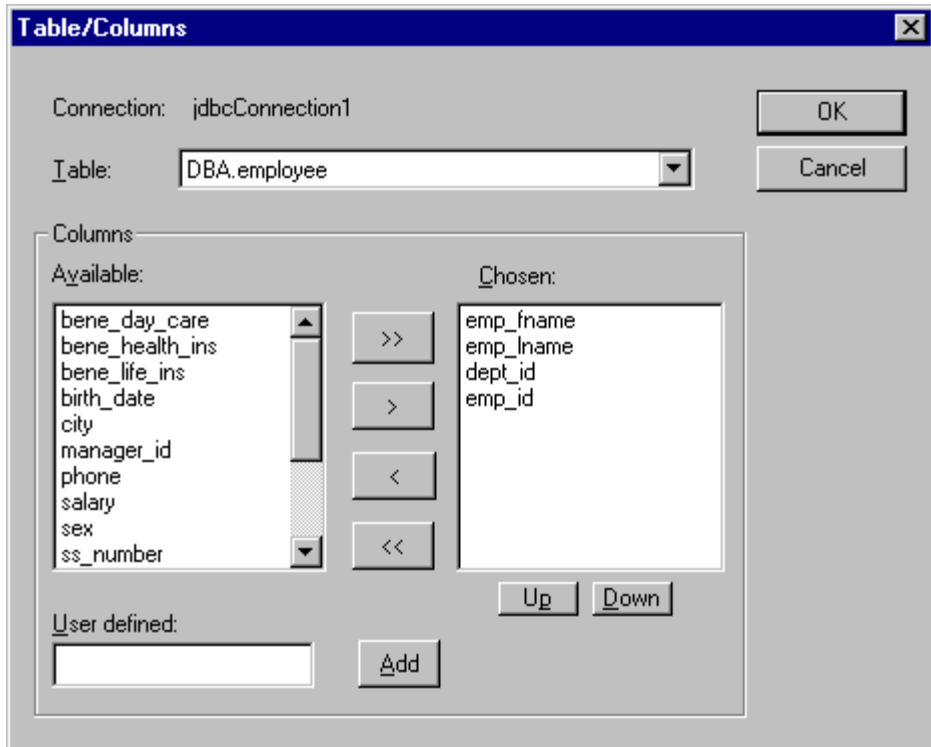
SQL Property Editors

Visual Cafe has added editors that enable you to graphically build the SQL statements that define the set of data used in your Java applet or application.

Table/Columns Property Editor

The Table/Columns Property Editor assists you in specifying the tables and columns you want to use. It is displayed when you click the

ellipsis button in the value cell for the Table property of the RecordDefinition component in the Property List.



Connection: This field shows the name of the jdbcConnection object.

Table: This dropdown list enables you to select the table to use.

Available: This list shows the columns available in the selected table.

Chosen: This list shows the columns you have selected to include in the query.

- To add a column to the Chosen list, select the column in the Available list and click the > button. To add all columns in the selected table, click the >> button.
- To remove a column from the Chosen list, select the column and click the < button. To remove all columns from the Chosen list, click the << button.
- You can also use the Up and Down buttons to specify the column order.

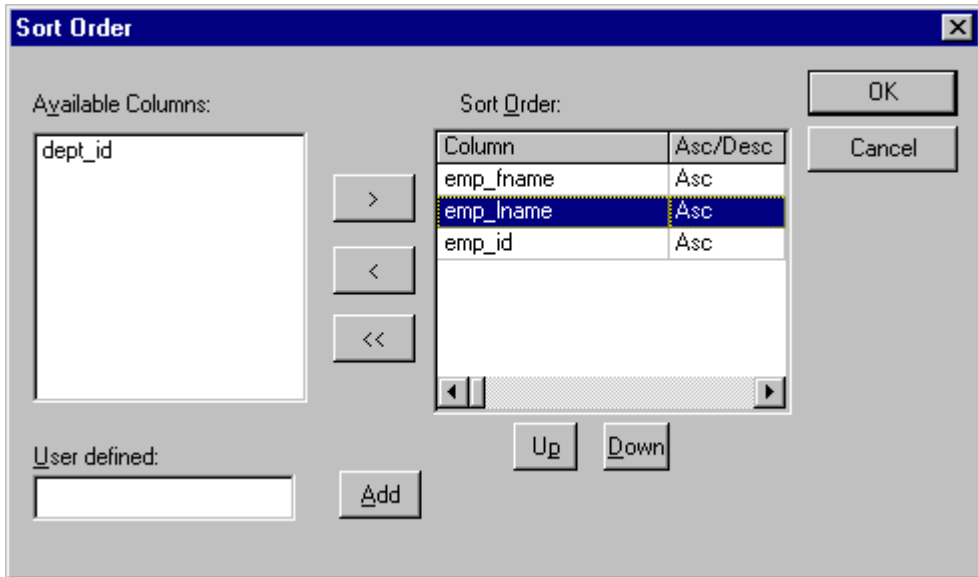
User-defined: This field allows you to add a non-database column.

- To add a non-database column, enter a name in the User-defined field and click **Add**.

Sort Order Property Editor

The Sort Order Property Editor enables you to specify the sort order for database records. It is displayed when you click the ellipsis button

in the value cell for the Sort Order property of the QueryNavigator component in the Property List.



Available: This list shows the columns available in the selected table.

Sort Order: This area shows the specified sort order.

- To specify the column precedence, use the **Up** and **Down** buttons.
- To toggle ascending and descending, click the Asc/Desc cell for the column.
- To add a column to the Sort Order list, select the column in the Available list and click the > button.

- To remove a column from the Sort Order list, select the column and click the < button. To remove all columns from the Sort Order list, click the << button.

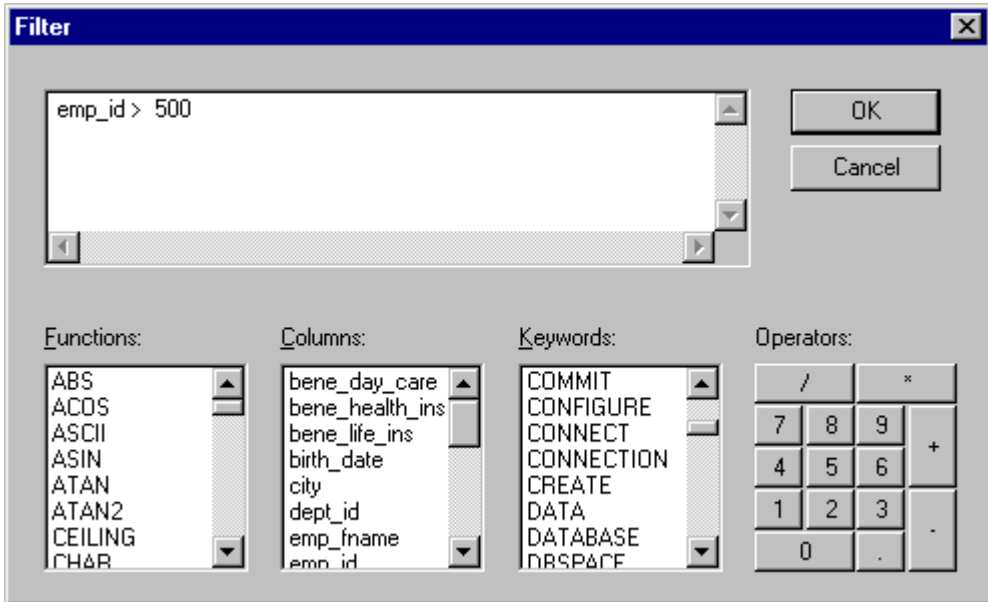
User-defined: This field enables you to add a non-database column.

- To add a non-database column, enter a name in the User-defined field and click **Add**.

Filter Property Editor

The Filter Property Editor enables you to specify a filter for database records. It is displayed when you click the ellipsis button in the value

cell for the Filter property of the QueryNavigator component in the Property List.



The main text area in the Filter Property Editor displays the filter string. You can type the entire string or use the predefined functions, keywords & operators to construct the string.

Functions: This list displays the function names which can be applied to the columns.

Columns: This list shows the columns of the table specified in the RecordDefinition object.

Keywords: This list displays SQL keywords for you to add to the filter string.

Operators: This set of buttons enables you to add operators to the filter string.

dbAWARE Wizards

The Create dbAWARE Project Wizard and the Add Table Wizard now enable you to create a form that displays your table as a grid or as individual field components.

New features and enhancements

This section contains a brief overview of each of the following features.

- Dynamic development of JavaBeans
- Just-in-Time Compiler 3.0
- Browser debugging
- JavaBeans Creator Wizard
- JAR Packager
- Wizard component
- Bean customizer support
- Conversion from no layout to GridBagLayout
- JAR Viewer
- JDK 1.1.4 support

- Java virtual font classes support

For more information on these features, please see the online help. Discussion of JDK 1.1.4 support is not mentioned in the online help, however, since it is not a part of the user interface.

Dynamic development of JavaBeans

Use Visual Cafe to make modifications to a JavaBean and see the results of those modifications in real time. When you're creating or updating a bean, simply select AutoJAR from the Project menu to put your bean (and associated files) into a JAR. Visual Cafe then automatically adds this JAR to the Component Library. Any open projects that use that bean will be automatically updated as well.

Just-in-Time Compiler 3.0

Projects now run even faster than before with the 3.0 version of the Just-in-Time Compiler (JIT). When you deploy your applets and applications, your programs will run up to three times faster than before—faster than any other available JIT.

Browser debugging

Applets and applications may run differently in different Web browser's Virtual Machines (VMs), so you can save time and effort by debugging in a browser to preview these differences. Debug your applets and applications while running them in either Internet Explorer or Netscape Navigator. Another advantage of running your programs in the debugger is that you can make use of classes that are

only supported by that particular web browser's VM. For browser debugging to work, you must have either version 4.04 of Netscape Navigator (with the JDK 1.1 PR3 patch), or Internet Explorer 4.0 or higher.

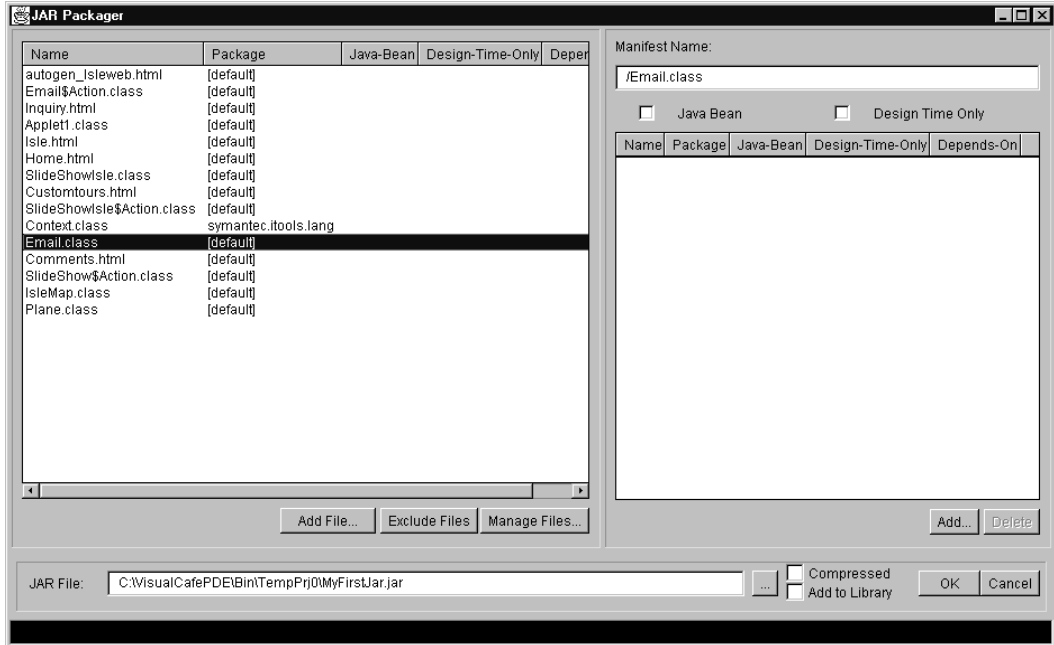
JavaBeans Creator Wizard

Use the JavaBean™ Creator Wizard to help you create new JavaBeans. It steps you through a series of questions and then generates the class and BeanInfo source files for you.

JAR Packager

Use the JAR Packager to create a Java Archive (JAR) from a currently open project. You can select multiple files at a time, and you can

specify whether a file within a JAR is a bean or used at design-time only. Here's an example of what the JAR Packager looks like:



You can specify dependencies, such as resource files. If you're already shipping one set of resource files in another JAR, you can exclude those duplicate files from the current JAR. The JAR Packager can also figure out the real path of a class file on your computer and put it into the JAR with its package name, even though the location on your computer might not correspond.

Wizard component

Use the Wizard component to help you create a Wizard in your applet or application. A Wizard prompts a user for information using a series of pages, helping the user to perform an otherwise complex operation in simple steps. Drop any type of component on each page of the Wizard.

Bean customizer support

Some JavaBeans developers create customizers for their beans. Use a customizer to set the state of a bean from within a wizard-like interface. You can invoke available customizers from within the Form Designer. Once the customization is completed, the corresponding property changes will be generated in the code.

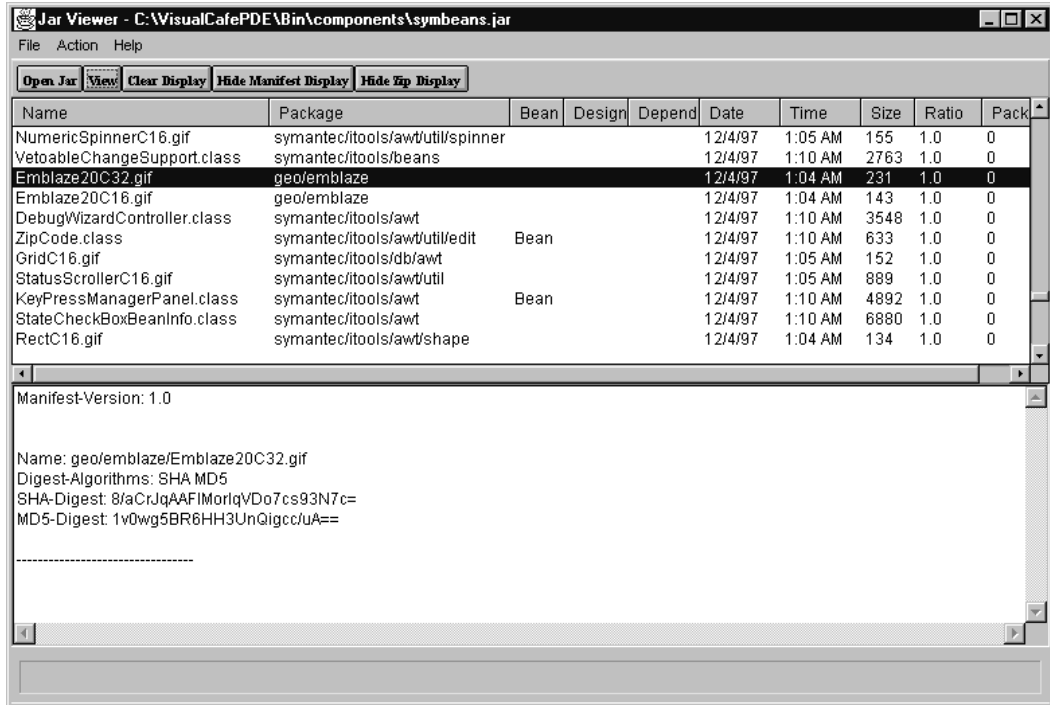
Conversion from no layout to GridBagLayout

When you change from using no layout in the Form Designer to using the the GridBagLayout, your components will retain their positions. The GridBagLayout puts your components into a grid structure, separating areas of the layout into cells of a grid. When you convert to GridBagLayout, you don't need to manually reset the individual component properties. GridBagLayout supports proportional resizing at both design- and run-time.

JAR Viewer

View JAR files just as you would a ZIP file. You can sort by date, type, and filename. Use the JAR viewer to open an existing JAR or ZIP file,

or to select a file in a JAR or ZIP file and launch the appropriate application to display it. You can also use the JAR Viewer to view the JAR's manifest file. Here's an example of what the JAR Viewer looks like:



JDK 1.1.4 support

Visual Cafe supports JDK 1.1.4, which means that our compiler, parser, editor, debugger and other tools understand JDK 1.1.4 code. See the Java API reference and Java Language reference in the online

help, and the Sun Microsystems website (<http://java.sun.com>) for more information.

Java virtual font classes support

Visual Cafe supports the Java virtual font classes. Use these font classes to ensure cross-platform compatibility. Use Serif, Sans-serif, Monospaced, Dialog, and DialogInput in your programs, rather than a particular typeface such as Times or Helvetica. Virtual font classes are no longer mapped to non-Latin1 classes of fonts.