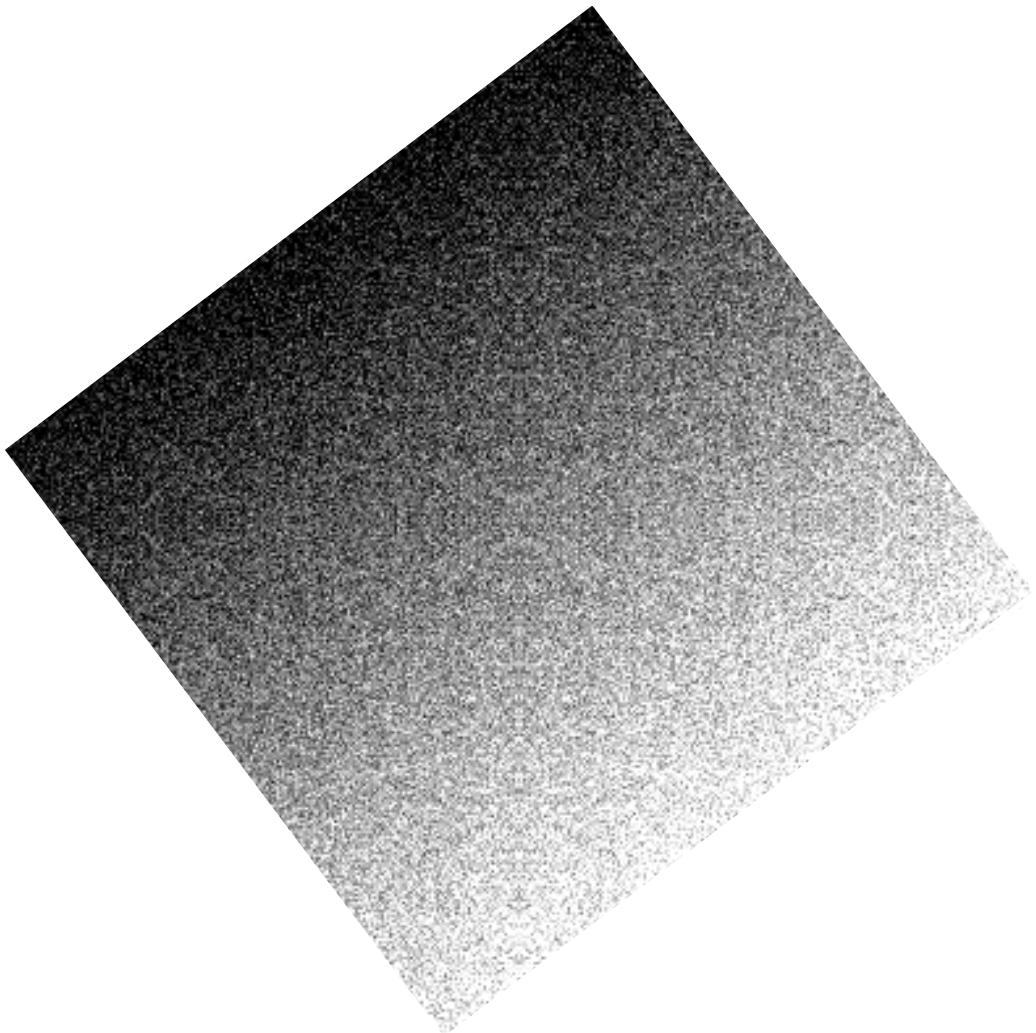
Intelligent Decision Server

IBM

Data Entry User's Guide

Version 1



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Note

Before using this information and the product it supports, be sure to read the general information under “Notices” on page v.

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About This Book

The *Data Entry User's Guide* contains information about the components, features, and functions of the Data Entry tool.

Who Should Read This Book

This guide is intended for the user who is entering information into a database or a Capsule application. It assumes a familiarity with the developer's desktop, and the ability to perform basic functions within the IDS environment. For more information on the developer's desktop, refer to the IBM IDS publication *Working with the Intelligent Decision Server*.

Prerequisite Reading

The following publications are closely related to the Data Entry tool.

Forms Design User's Guide. This guide explains how to design a data entry form to set values inside a Capsule application, or modify data in a database.

Capsule User's Guide. This guide tells you how to build and maintain your own applications.

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Chapter 1. What Is Data Entry?

In general, data entry is the process of entering information into a database, and at some point, retrieving the information. Within IDS, the Data Entry tool is most often used to control a capsule application.

With the Data Entry tool, you enter and retrieve information through a Data Entry form. This chapter provides examples of Data Entry forms, and gives an overview of how Data Entry forms are used within IDS.

Finding Out About Data Entry

The Data Entry tool comprises Data Entry forms that allow you to interact with a database or capsule application. You enter, retrieve, and delete information from within Data Entry forms. For example, suppose you work in Personnel and need to update an employee's records. The Data Entry form for employee records appears similar to the following illustration.

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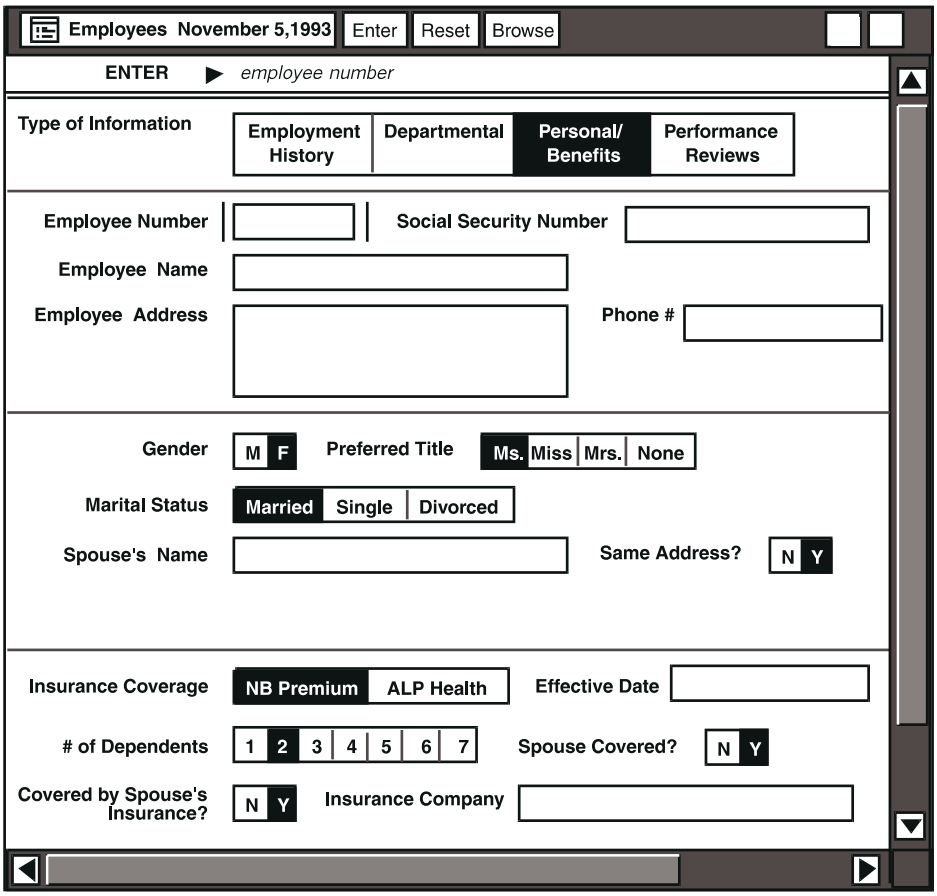
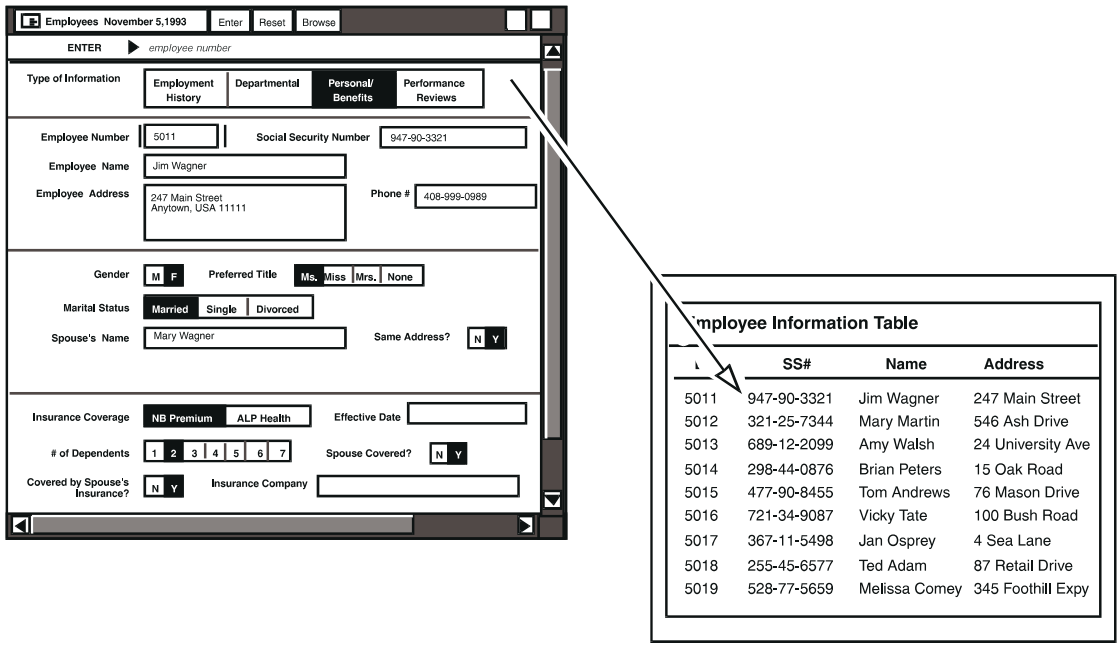


The information you enter in the fields of the Data Entry form is placed in the appropriate place in the database or capsule application.

Entering Information into the Database

Some Data Entry tools are set up to enter information into a database. For example, a Personnel department might use the Data Entry form shown in the previous section to update their employee database.

When you enter information into the fields of such a Data Entry form, the Data Entry tool places that information into the appropriate *table* in the database. A database table is a logical structure that contains related information. The following diagram illustrates the relationship between your entries and the structure of the database.



The illustration above shows only part of what the Employee Information table in the database would contain if the Data Entry form was constructed as illustrated. However, the illustration gives you an idea of how information entered into the Data Entry form is structured for storage in the database. In general, each screen of data entered becomes one record in the database table.

Understanding Data Entry Forms and Capsule Applications

When you enter information into a Data Entry form that interacts with a capsule application, the information is transferred to *@-variables* within the capsule application. An @-variable is a control that passes information to tools within the capsule application.

The contents of the @-variables change based on your entries in the Data Entry form, but the name of the @-variable is constant. Because the name of the @-variable is constant, the contents of the @-variable can be used in other tools within the capsule application.

For example, you want to create a standard report that displays an employee's information. You create the report using a Text tool. You want the information in the report to change based on your entries in the Data Entry form. To do this, place both icons inside a capsule application and define @-variables to use in both tools.

The following diagram shows the transfer of information between the Data Entry form and the Text tool within a capsule application.

How Information Travels

1. Information from the fields of the Data Entry tool is transferred to the capsule application.
2. The capsule application places the information from the Data Entry tool into the appropriate @-variable inside the User Input Control Window.
3. The Text tool reads the information in the @-variables of the User Input Control window and places it in the report.

Chapter 2. Getting Started

With the Data Entry tool, you enter and retrieve information through a Data Entry form. This chapter describes:

Using Data Entry forms

Finding the Data Entry icon

Viewing the Data Entry window

Understanding the features of the Data Entry window

Use the Data Entry tool to enter information into a database or capsule application, retrieve this information, and make changes to the data.

Using Data Entry Forms

The Data Entry tool is used to enter, retrieve, delete, and update information in a database table, or in the User Input Control window of a capsule icon. Some Data Entry tools can be used only to enter information, while others can be used to perform all functions. The Data Entry tool can comprise the following forms:

Entry form

Use this form to enter information into a database table or into the User Input Control window of a capsule icon.

Retrieval form

Use this form to view and to delete specific items.

Update form

Use this form to modify and to delete information.

Your Data Entry icon must be specifically enabled by the forms designer to allow you to delete information from a database.

Data Entry icons can contain one, two, or all three forms, depending on the intended use of the Data Entry icon.

Finding a Data Entry Icon

The forms designer, possibly your database administrator or system administrator, creates Data Entry icons using the Forms Design tool. The forms designer creates each Data Entry icon to be used with a specific table within a given database and category. The Data Entry icon is also often created to set @-variables within a capsule application. In these cases the Data Entry icon might not always access a database.

The Data Entry icon displays a small picture of a form, followed by a name. It is unlikely that any of your Data Entry icons have the name Data Entry. The forms

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designer or system administrator has probably named the Data Entry icons to describe their subject matter.

Data Entry icons do not necessarily exist in a special file drawer in New Icons. If you have trouble locating a Data Entry icon, consult your forms designer, system administrator, or applications developer for assistance.

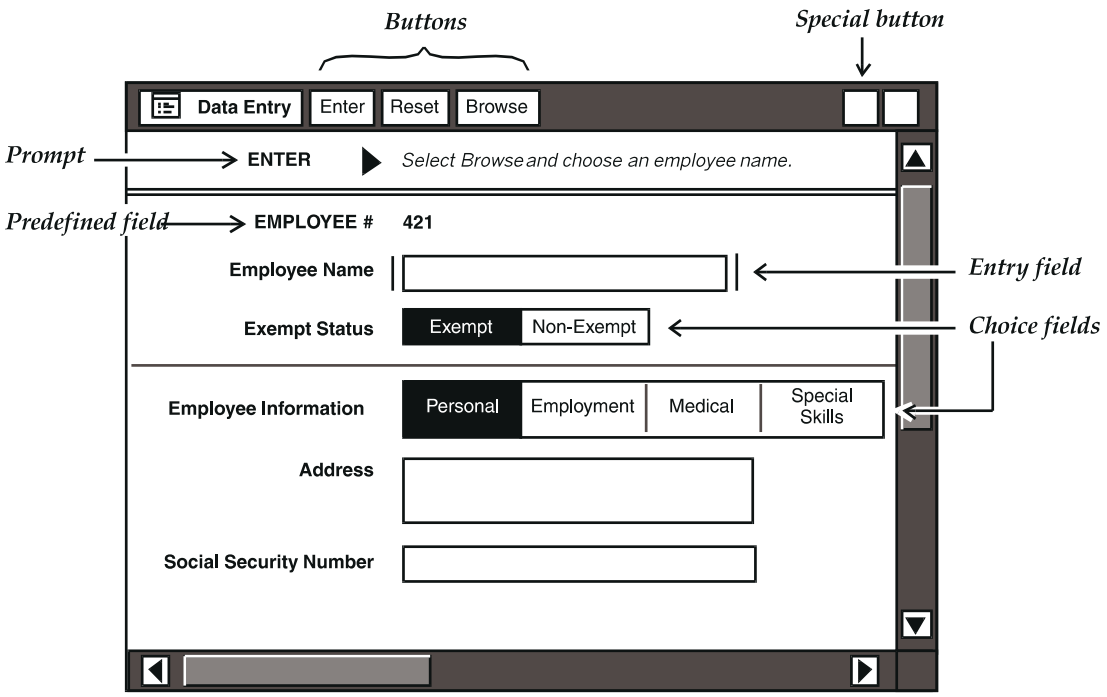
Viewing the Data Entry Window

Each form is displayed individually. View the Data Entry window by opening the Data Entry icon.

When a form is displayed, blinking lines appear at each end of the first field where you can enter or change information.

Learning About the Data Entry Window

There are several parts to the Data Entry form that indicate the type of form, allow you to enter information, or enable you to perform distinct actions. The following illustration shows these parts of the Data Entry form.



The Data Entry form you use might not include the buttons, prompt, and fields shown in the above illustration.

Looking at the Prompt

Determine which form you are in by looking at the prompt. The prompt for an entry form reads **ENTER**, the prompt for a retrieval form reads **RETRIEVE**, and the prompt for an update form reads **UPDATE**.

The prompt might be followed by a field prompt that contains a message or comment provided to help you with entering data for the selected field. The following example shows a prompt for an **Employee Name** field.

```
ENTER>          Select Browse and choose an employee name.
```

Understanding the Data Entry Fields

The lower part of the window contains the form itself, which in this particular example has three basic types of labeled fields:

Predefined field

You cannot edit the information in this type of field. This information can be database information or comments the forms designer has provided to assist you.

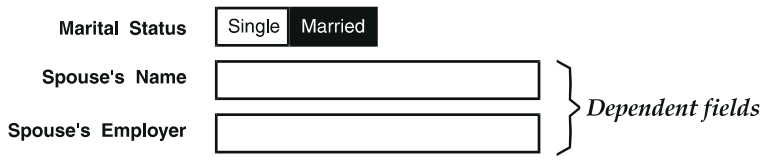
Entry field

Type information into this field by or select an entry from a *browse list*. A browse list contains valid entries for the field from which you can choose. The **Browse** button appears after the field is selected.

Choice field

Select one of several choices from this type of field, rather than enter data. Choices can display *dependent fields*, or fields that appear only when a particular choice is selected. For example, the **Marital Status** field has two choices.

When **Single** is chosen, there are no dependent fields. However, when **Married** is chosen, more fields appear as shown in the following illustration.

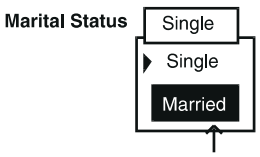


The **Spouse's Name** and **Spouse's Employer** fields are dependent fields. These fields only appear if **Married** is chosen from the **Marital Status** field. If you enter information into these fields, you must click on the **Enter** button to verify the entries while the **Married** choice is selected.

Some fields also have a symbol (§) in front of them. These fields are known as *section fields*.

This symbol signifies that you can enter information into every dependent field of the section field, click on the **Enter** button, and verify all entries after regardless of which choice is currently selected.

Some choice and section fields are displayed as pull-down menus. In other words, when you select the visible choice, a menu appears from which you can select another choice.



The arrow to the left of the **Single** choice points to whichever choice is the current visible selection within the field. When a different selection is made, the field reappears showing only the new choice. Highlight the choice you want with the pointer and release the mouse button.

Using the Window Header Buttons

The window header buttons change depending upon the Data Entry form you are using. Table 1 gives a description of the buttons for each form.

Table 1. Window header buttons

Form	Buttons	Description
Entry	Enter	Records your entries.
	Reset	Erases all entries from the Data Entry form.
	Browse	Appears when you select a field that has a browse list associated with it. Displays a browse window when selected.
Retrieval	Retrieve	Finds the information that you requested.
	Reset	Erases all entries from the Data Entry form.
	Browse	Appears when you select a field that has a browse list associated with it. Displays a browse window when selected.
Update	Enter	Records your entries.
	Reset	Erases all entries from the Data Entry form.
	Cancel	Closes the window without performing any changes.

Examining the Special Menu

Your Data Entry icon might contain one, two, or all three of the forms. Select and hold the **Special** button in the window header to see what other forms are currently available.

When you select and hold this button, a menu appears.

The Special menu offers the following items:

Enter Data

Select **Enter Data** to display an entry form. For further instructions on entering data, see Chapter 4, “Entering Information” on page 21.

Retrieve Data

Select **Retrieve Data** to display a retrieval form. See Chapter 5, “Retrieving and Deleting Information” on page 26.

You also select **Retrieve Data** to access the update form because you must first retrieve data before updating it. For further information on updating information, see Chapter 6, “Updating Information” on page 30 for more information.

Generate Log

Select **Generate Log** to record all entries made in the Data Entry form. See Chapter 4, “Entering Information” on page 21, for more information.

Update Browse Lists

Update Browse Lists appears only when a form accesses a browse list. See Chapter 3, “Working Within a Data Entry Form” on page 10, for more information on selecting entries from a browse list and updating browse lists.

Show Data Entry Options

Select **Show Data Entry Options** to change options for the Data Entry tool. See Chapter 3, “Working Within a Data Entry Form” on page 10, for more information.

Create Forms Design Icon and Capture SQL

The last two menu items, **Create Forms Design Icon** and **Capture SQL**, are reserved for use by the forms designer and appear only when the form is used on the desktop on which it was created. These items are described in Chapter 8, “Using Restricted Functions” on page 37.

Chapter 3. Working Within a Data Entry Form

This chapter provides you with general information about how to make simple changes to and move around in the data entry form. It includes instructions for:

Moving around in a form

Removing field entries

Browsing an field

Changing how a field resets

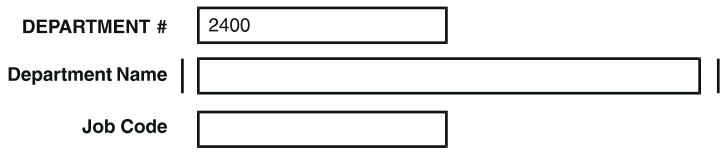
Setting data entry options

Moving Around in a Form

When you open a form, you can randomly select any field. When working within a form, you can move back and forth between fields to change previously entered information.

Moving Between Fields

To enter information into a form, you must be able to move between fields. Suppose you want to move between the fields depicted in the following illustration.



The blinking lines outside the field mark the field in which you are currently entering information. For this example, you are entering information into the **Department Name** field.

To move between the **Department Name** and **Job Code** fields:

1. Select inside the desired field.
2. Press the Tab key to advance to the next field.
3. Press Enter to validate the entries and move the cursor to the next open field.

   Consider the following when pressing Enter to move between fields:

   If input is required in a field, pressing Enter does not advance you to the next field within a form. Instead, the following message appears in the message area.

   Input is required for this field.

   If there is a section field in the form, pressing Enter validates the entire section, which includes all dependent fields, and moves to the next open field.

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Moving Within Fields

To make a selection from a field, you must be able to move within the field. Suppose your form offers choices similar to these:

To move within a field:

1. Select one of the available choices.
2. Press the spacebar to advance to the next choice. If the far-right choice is highlighted and you press the spacebar, the far-left choice is highlighted.

Removing Entries

You can remove information from a single field or from an entire form.

To remove information from a field:

1. Press Backspace to remove the last letter of an entry in an field.
2. Select the text by clicking in the field three times (or four, if the text surrounds a period) to highlight the entire text, and then press Backspace to delete the contents of the field.

To remove information from a form:

1. Click on the **Reset** button in the form window header to remove information from the entire form. This action removes all entries you have made. Field entries in the entry and retrieval forms are removed, with the exception of predefined default entries. In the entry and update forms, the original information reappears in all fields.

Browsing an Entry Field

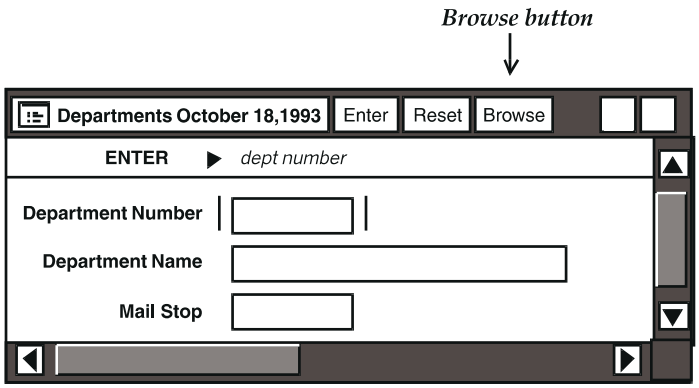
When you select a field to enter information, you might be given the option to choose information from a browse list. If a field allows you to choose your entry from a browse list, either the **Browse** button appears in the form window header or a browse list automatically appears when you select in the field, depending on how the form was created by the forms designer.

If the browse list does not automatically appear, you can click on the **Browse** button to display a browse list for that field, or you can manually enter the data into the field.

The browse list function associated with the Data Entry tool appears similar to the independent Browser tool, but is not related. For more information on the Browser tool, refer to *Browser User's Guide*.

To display a browse list for a field:

1. Select a field in your form. In the following illustration, the **Department Number** field was selected. The **Browse** button appears in the window header.



2. Click on the **Browse** button.

   A browse list, labeled with the name of the selected field, displays a list of all acceptable entries for that field.

   When a browse list contains several columns, a heading appears for each column of items. Within each column, the items are listed in alphabetic or numeric order. Items in one column do not necessarily correspond to those items in the same row in another column. You must select values from the column that relates to the field.

3. Select one or more values from the browse list. See the following section, “Selecting Browse List Constraints,” for information on constraining the browse list.
4. Click on the **Apply** button in the window header, or close the browse window. Your selection appears in the appropriate entry field. In this example, the value from the browse list appears in the **Department Number** field.

   Closing the browse window enters the selected list item automatically into the current field. Clicking on the **Apply** button adds the item to the field, and keeps the browse window open while you select more items.

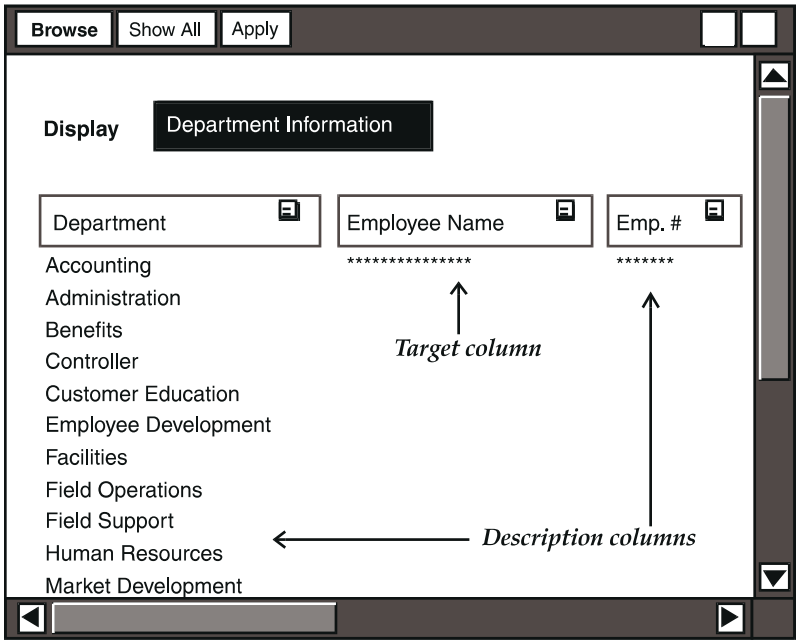
5. Enter information into the other fields within the form.
6. Click on the **Enter** button in the window header, or press Enter on your keyboard to enter the information into the database or capsule application.

Selecting Browse List Constraints

Constraining values with a browse list allows you to further define the type of field entry you want to make. When you select a field that has a browse list, you can **constrain**, or limit, the values.

To constrain browse list values:

1. Click on the **Browse** button in the window header if the browse list is not displayed when you select in the field. The browse window appears as shown in the following illustration.

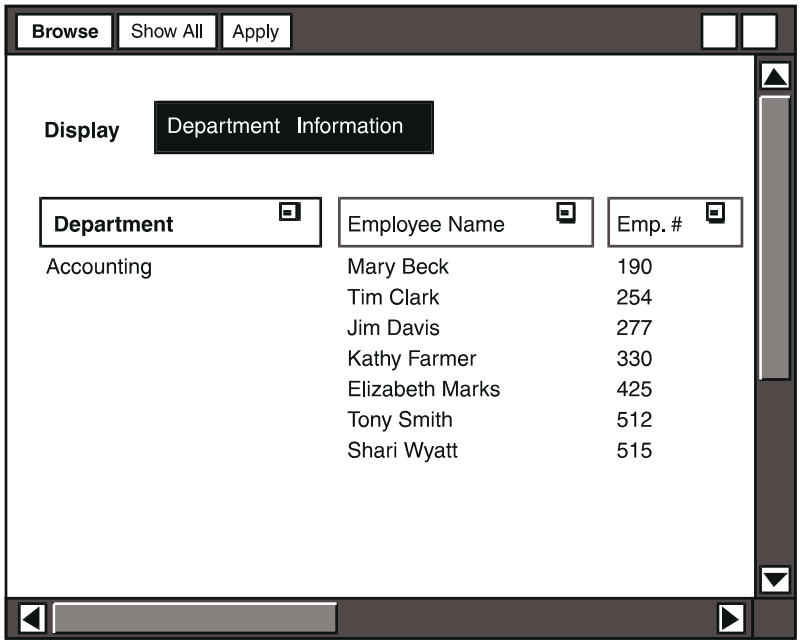


In this example, the Employee Name column is the target column. The target column contains the values that are entered into the field after a selection has been made. The other columns are *description* columns. Description columns are used to limit the values in the target column.

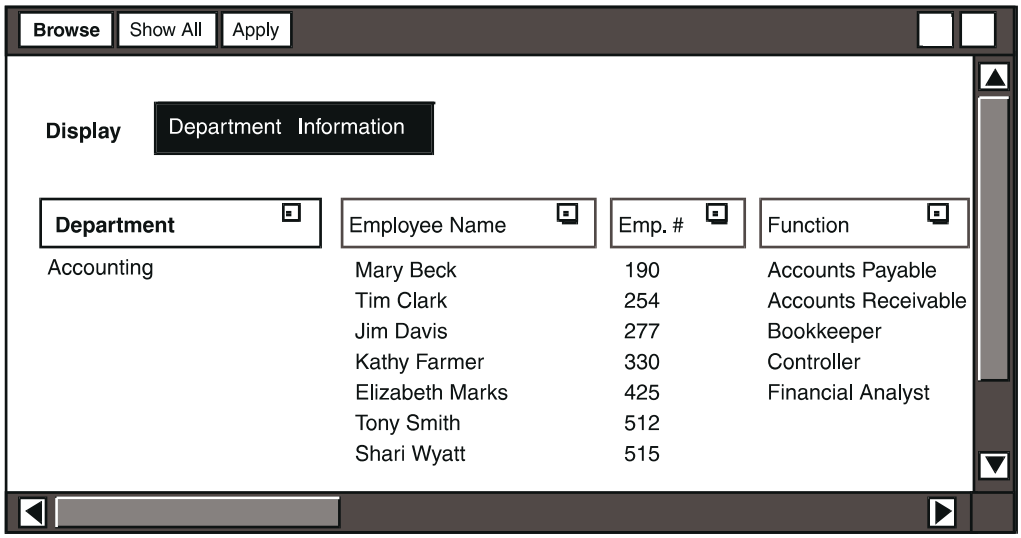
Notice that there are no values in the Emp. # or Employee Name columns. The asterisks (*) mean that there is too much information in these columns to be displayed within the browse window. You must constrain the other columns until you reduce the data enough for these values to be displayed.

2. Select an entry from one of the columns if the browse window contains more than one column. All other choices collapse and disappear from the column, and the item and the heading that you selected appear in bold italics. The other browse window columns also collapse to correspond to the selected choice.

   For example, select **Accounting** from the Department column to view values for only the Accounting department**.** The browse list now contains information about only the Accounting department, as shown in the following illustration.



Notice that the Emp. # and Employee Name columns now contain values. Suppose the browse window also contains a column that identifies employee functions as shown in the following illustration.



3. Select another entry from one of the remaining columns to further constrain the choices.

For example, choose **Financial Analyst** from the Function column. The browse list now shows information only about the financial analysts in the Accounting department.

If you select and extend on both names and click on the **Apply** button, both names in the Employee Name column are entered into the field. Otherwise, you can constrain the Employee Name column down to one name.

4. Click on the **Apply** button. Your selection appears in the field.

   If you already have values in the selected field, your new selection appends to the original one, separated by a comma and a space. As a rule, the Data Entry tool always reads a comma and a space as the end of an entry, so any information following a comma and a space is considered to be another entry. For example, the following illustration shows two entries separated by a comma and a space: Controller and Field Operations.

   If you wish to separate items that include a comma, such as a date, be sure not to include a space following a comma within the date. For example, in the entry March 15,1991, March 21,1991, there is no space before the year, but there is a comma and a space between entries.

   If you need to include a comma and a space within an individual entry, such as with IBM, Inc., simply enclose the entry within double quotes. For example, "IBM, Inc.", IBM is read as two separate entries.

Setting Constraints by Selecting an Operator

You can set constraints on a browse list by selecting an operator from the **Constraint Operator** menu. To constrain a column by using an operator:

1. Select an item in a column.
2. Select the **Constraint Operator** button in the column heading. The **Constraint Operator** menu appears, as shown in Figure 1 on page 16.

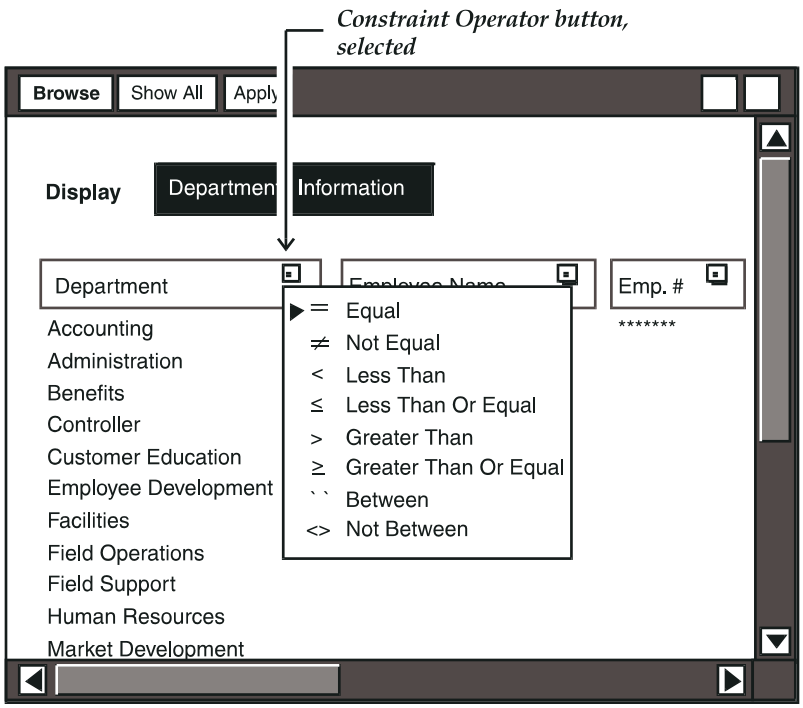


Figure 1. Constraint Operator menu

3. Select an operator in the **Constraint Operator** menu, and the graphic for the **Constraint Operator** button changes (the operator you selected is displayed in the button). The selected column is constrained according to the operator.

For example, suppose you want to view only the departments that are before, or alphabetically less than, F. To display the departments, you select the first department before F, select the **Constraint Operator** button for that column, and then select ≤ **Less Than Or Equal** in the button menu.

The main browse window now appears as shown in Figure 2 on page 17. Note the ≤ sign in the Department column's **Constraint Operator** button.

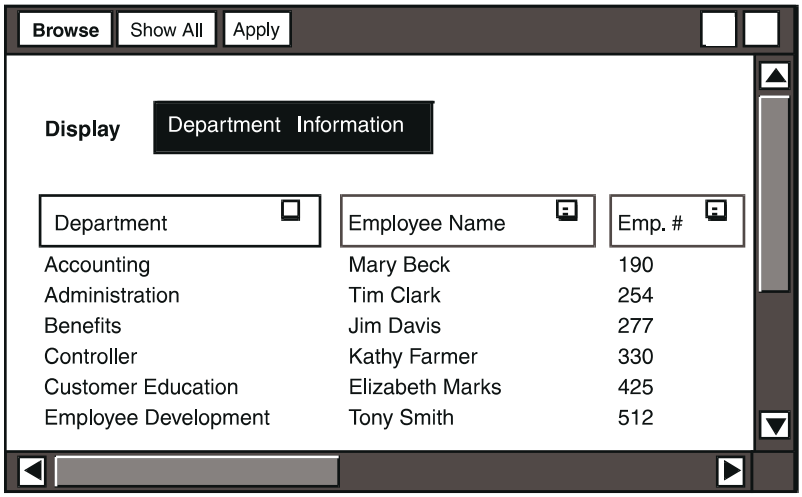


Figure 2. A column constrained by an operator

In Figure 2, you see that:

The Department column displays only the departments alphabetically less than F.

The Employee Name and Emp. # columns display all items that appear before (that is, alphabetically “less than”) the F departments in the Department column.

Selecting an operator gives you a wider range of choices for constraining data. You can further refine your data by constraining the rest of the columns.

Unconstraining a Browse List Selection

If you want to change a constraint to the browse list, you can unconstrain the browse list selection.

To unconstrain a browse list selection:

1. Select the bold italicized column item you want to unconstrain. The unconstrained column then reappears.

Canceling Browse List Constraints

You can decide you do not want to use any of the items you have just constrained. To redisplay all columns, click on the **Show All** button in the browse window header. All columns reappear, and you can select another entry to re-constrain the column.You can decide not to make any entries in the form. Close the browse window and delete any entry made in the entry field.

Updating Browse Lists

If information is missing from a browse list, you might need to update the browse list. You can update a browse list from the Special menu.

To update a browse list:

1. Select **Update Browse Lists** from the Special menu.

Changing Field Reset Options

You can set each entry or field of the entry and update forms so they reset in the following ways:

Automatically

Whenever you click on the **Enter** button in the window header, or press Enter, to add new information to the database or capsule application, the field automatically resets.

Manually

Whenever you click on the **Reset** button in the window header, the form resets.

You cannot change field reset options for a retrieval form. For entry and update forms, you can select the method in which a field is cleared through the Field Options window.

To set the field reset option:

1. Select a field in the entry or update form.
2. Open the Field Options window.
3. Select one of the following choices in the **When Entered** field:

   Reset Field

   This choice clears the field or displays the default value every time you press Enter on your keyboard, or click on the **Enter** button in the form window header.

   Retain Field

   This choice resets the field only when you click on the **Reset** button in the form window header. This feature is useful if you are entering several records in which one field is the same or similar for all records.

Some fields already contain information when you first display the form. These entries are called defaults and were included by the forms designer when that Data Entry tool was designed. You cannot permanently change these entries, and if you try to do so they reappear whenever you click on the **Enter** button or the **Reset** button in the window header of the form.

Setting the Data Entry Options

The Data Entry tool provides options you can set for the Data Entry icon. You can set these options in the Data Entry Options window.

To access the Data Entry Options window:

1. Select **Show Data Entry Options** from the form's Special menu.

The Data Entry Options window.

You can set the following options in the Data Entry Options window:

Error Signal

Choose the type of signal you want to warn you about incorrect entries.

Update Browse List

Choose a method of updating the browse lists.

Selecting an Error Signal

Your Data Entry icon might have been designed to validate your entries against database tables before changing the database. If the Data Entry tool encounters incorrect information as you work — for example, an invalid field entry — it sends an error signal to notify you about the error. You can specify what type of signal you want to receive.

To set the error signal:

1. Select one of the choices in the **Error Signal** field.

   Flash

   The window flashes when an error occurs.

   Beep

   A beep sounds when an error occurs. There are three lengths of sound from which you can choose. When an error occurs you hear a short, medium, or long beeping noise, depending on the selection you made.

Updating the Browse List

Select a choice in the **Update Browse List** field to control when a browse list is updated. Depending upon how often the database changes, you can specify that the browse list be updated:

When Icon Is Opened

The browse list is updated every time the Data Entry icon is opened.

Upon Request

The browse list is updated when **Update Browse Lists** is selected from the Data Entry icon Special menu.

Upon Validation

The browse list is updated when it is used for validation.

Based on SQL

The browse list is updated according to the SQL statements specified in the **SQL for Update Value** field.

When you select **Based on SQL**, an **SQL for Update Value** field appears. You enter an SQL statement into this field that gives the Data Entry tool a way to automatically determine when a browse list needs to be updated.

When the database is queried and returns a value, that value is compared against the value that was returned the last time the tool was opened and the SQL statement was issued. If the values are different, the Data Entry tool clears all the values in the browse list. The browse list is then updated when the user clicks on the **Browse** button. You should use any measure appropriate to your browse lists when creating this SQL statement.

If the database changes frequently, then the browse list should be updated frequently. However, updating the browse list is time-consuming, so only update as necessary. Refer to *Forms Design User's Guide* for more information on performance issues related to browse lists.

Consult your forms designer or system administrator for more information about this feature of the Data Entry tool.

Chapter 4. Entering Information

There are three basic ways you can enter information into a form. You can enter information manually, select a choice from a browse list, or select one of several predefined choices. The field types are determined by the forms designer, and are discussed in Chapter 2, “Getting Started” on page 5.

This chapter describes how to:

Display the entry form

Enter information

Record your entries

Displaying the Entry Form

You use the entry form to enter information into the database or a capsule icon. The entry form is usually the first form that is displayed when you select and open a Data Entry icon. If that particular Data Entry icon was not designed with an entry form, the retrieval form is displayed instead. Figure 3 shows an example of an entry form.

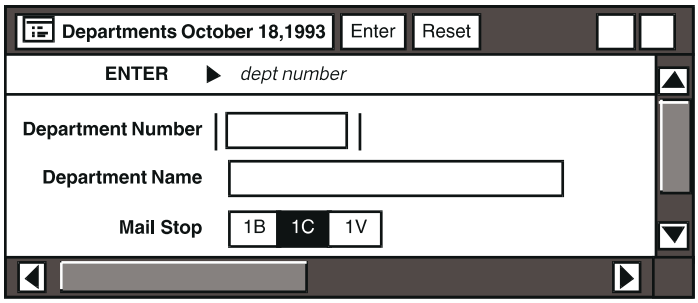


Figure 3. Entry form

To redisplay an entry form after retrieving or updating information in the database or capsule icon, select **Enter Data** in the Special menu of the retrieval form or update form, as shown in the following illustration.

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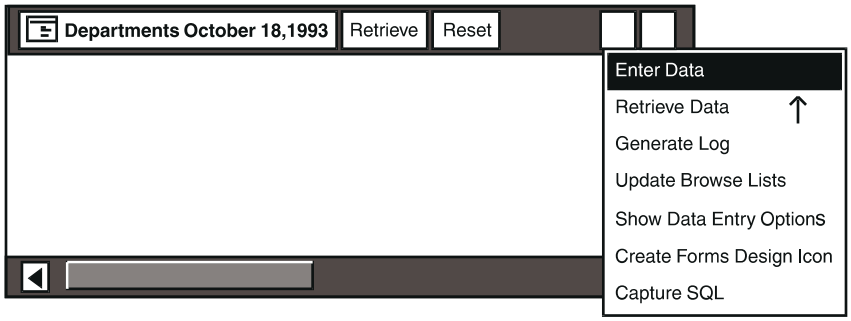


Entering Information

Each field type is clearly indicated in the entry form. The form itself prompts you for the information you need to enter, and the message area on your desktop displays warnings that indicate any incorrect procedures.

As an example, if you use an entry form similar to the one in Figure 3 on page 21, you use two fields and a field to enter a Department Name, Department Number, and Mail Stop into a Departments table in the database.

To enter information:

1. Open the Data Entry icon. An entry form appears.

   Select the first blank field in the form. In Figure 3 on page 21, the first field is the **Department Name** field, which is already selected. The **Department Name** field is an field with a browse list. In cases like this one, you can use a browse list or manually enter information into the field. Sometimes, the browse list appears automatically when you select a field.

2. Click on the **Browse** button to display the browse list for the **Department Name** field.

3. Select one or more items from the browse list. See Chapter 3, “Working Within a Data Entry Form” on page 10, for more information about using browse lists.

   If the browse list is missing a selection, you need to update the browse list. See “Updating Browse Lists” on page 17 for more information.

4. Close the browse window.

5. Enter and validate the data using one of the following methods:

   Press Enter on the keyboard.

   Click on the **Enter** button in the window header.

   The data is validated and the pointer automatically moves to the next field that requires data.

6. Make selections or enter data for the rest of the fields in the form.

7. Click on the **Enter** button in the window header to add the information to your database. If you are working in a capsule icon, and @-variables have been used in the Data Entry icon, then some of the new information may be added to the User Input Control window. See Chapter 7, “Using Data Entry in a Capsule Application” on page 34, for more information on using the Data Entry tool with capsule applications.

   If you receive an error signal, some necessary data is either missing or incorrectly entered. The field pointer returns to the incorrect field.

   If you receive a message in the message area of your desktop stating that you have not entered a valid value, you can use the **Browse** button, when available, to verify the entry. If you do not find your entry in the browse list, update the browse list. See “Updating Browse Lists” on page 17 for more information.
8. Make the necessary changes, and press Enter or click on the **Enter** button in the window header.
9. Click on the **Reset** or **Enter** buttons in the window header before closing the form. You must select one of these buttons any time you make changes or the Data Entry tool will not close the form.

Entering Acceptable Dates

When you have an field that asks you to enter a date, you must enter the date in one of the acceptable formats shown in Table 2 on page 24.

You can also enter Today in a date field, and it will enter today's date.

Table 2. Acceptable date formats for direct entry

Date type	Correct formats	Incorrect formats
Day	January 15, 1994	Jan. 15, 1994 1-15-94
	January, 15, 1994	
	January.15.94	
	Jan 15, 1994	
	jan 15, 94	
	jan 5 94	
	Jan/15/94	
	15/January/94	
	94.January.15	
	1/15/94	
	15.1.94	
	94-1-15	
	this day	
	today	
	Jan 15, 94 + 2 days	
Week	jan 15, 94 - 2 weeks	
	this week	
	week of Jan 15, 94	
	15 w 94	
	week of 1/15/94	
Quad Week	quad week of Jan 15, 94	
Month	January, 1994 Jan, 1994	Jan., 1994 jan, 1994 January
	january, 94 jan, 94 jan 94 this	1-94
	month 1/94 + 2 months	
Odd BiMonth	JF, 1994 jf 94 1994 JF	Jan-Feb, 1994
Even BiMonth	JF, 94 jf 1994 1994 JF	Jan-Feb, 94
Quarter	1q94 1Q94 this quarter	First Quarter of 1994
Year	1994 94 this year	94

Recording Your Entries

You can keep a record of the information you are entering or updating in the database. Keeping a record is helpful if you need to know what changes were made and when they were made. You can record entries for only one session at a time. Each time you open a Data Entry icon, you have to begin a new record. Later entries are not added to previous transcripts. If you are working in a capsule application, any changes made to the User Input Control window are not recorded.

To record entries from an entry form or update form:

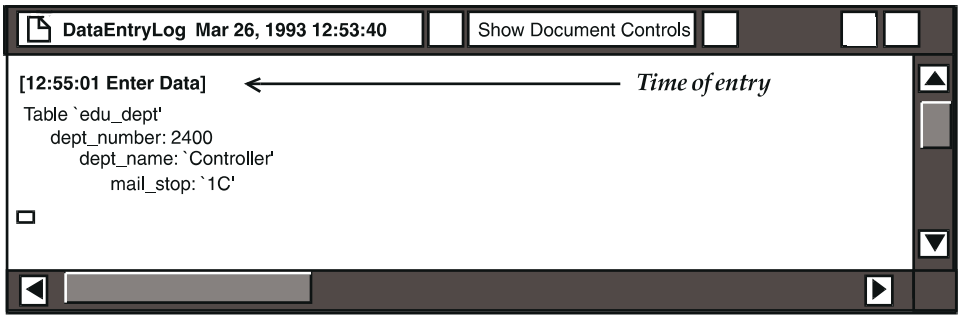
1. Select **Generate Log** in the Special menu of your form.

   The Data Entry Log icon appears on your desktop and opens to display the Data Entry Log window.

   Both the icon and the window display the date and time at which they were created. The Data Entry Log window records all the information as you enter it into the database as long as the window remains open. The window must remain open on your desktop to continue recording information.

2. Type new data into your form.

3. Click on the **Enter** button, or press Enter. The information is sent to the database, and the entry appears in the Data Entry Log window.



   The Data Entry Log window records each entry in a separate block of text. The time of the entry precedes the text.

4. Close the Data Entry Log window when you have finished entering information into the entry form. The Data Entry Log window closes automatically when you close the form window you are using.

The Data Entry Log icon now contains a record of all entries made for that specific time period. The Data Entry tool creates a new Data Entry Log icon each time you select **Generate Log**. The Data Entry tool does not overwrite existing Data Entry Log icons.

You can save each Data Entry Log icon and use the contents for proofreading your entries. Each log has a unique date and time, reflecting the date and time you created it. However, you may want to rename each icon to better suit your own records.

See Chapter 8, “Using Restricted Functions” on page 37, for more information on capturing the SQL activity generated by the Data Entry tool.

Chapter 5. Retrieving and Deleting Information

In addition to entering data into the database, most Data Entry icons also allow you to retrieve and update information. This chapter explains how to access information currently in the database. It describes how to:

Display the retrieval form

Access information in a database

Retrieve information

Delete information

Stop information retrieval

Displaying the Retrieval Form

Use the retrieval form to get specific information from a database and display it on your screen. After you retrieve the information, you can then update or delete it if you have the appropriate privileges. See Chapter 6, “Updating Information” on page 30, for more information about updating entries in the database.

To display the retrieval form:

1. Open a Data Entry icon.
2. Select **Retrieve Data** in the Special menu of the form window header.

Notice the window header button is labeled **Retrieve** rather than **Enter**, and the prompt is labeled **RETRIEVE** rather than **ENTER**. However, you can still press Enter on the keyboard to retrieve data.

Retrieving Information

You can choose what information to access and retrieve by using the appropriate fields in the retrieval form. You can access and retrieve the following information:

All data

To access all data in the database table without any constraints on the data, leave the fields blank. If you have a large database, it can take several minutes to retrieve data that is not constrained. In practice, you usually constrain one or more fields to reduce the amount of data retrieved.

The Data Entry tool can retrieve up to 200 rows from the database. Any rows exceeding the 200-row limit are not displayed.

A specific row

To access a specific row of data in the database, enter all the fields necessary to make the row of data unique. In the next example, the database returns the row of data where the Department Number is equal to 2400, and the Department Name is Controller.

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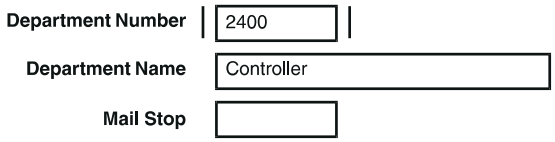
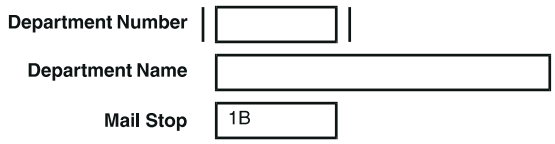


Several specific rows

To access several specific rows of data in the database table, enter field data associated with more than one row. In the next example, the database returns multiple rows of data where the Mail Stop is equal to 1B.



You can also retrieve data using one of the symbols shown in Table 3 as a prefix for your entry.

Table 3. Retrieval form symbols

Symbol	Returns data that is:
>	greater than the value entered
<	less than the value entered
>=	greater than or equal to the value entered
<=	less than or equal to the value entered
not=	not equal to the value entered
=	equal to the value entered

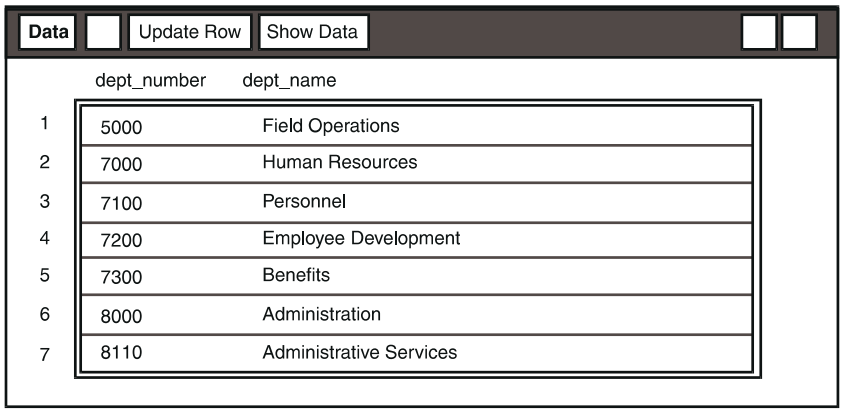
You can only enter one value when retrieving data. For example, you cannot retrieve data with the expression = 5 , 6 .You can only retrieve data equal to 5000 or 6000. To work around this situation, retrieve data <= 6 , and ignore any data retrieved that is less than 5000.

To retrieve information:

1. Select **Retrieve Data** in the Special menu of the window header. The retrieval form appears.
2. Select a field and enter the data value to retrieve. You do not have to enter data into every field when retrieving information. However, if you only specify data in one field, you could retrieve more data than you need. You can enter data into every field if you want to further constrain the data to be retrieved.

For example, if you select the **Department Number** field and enter >=5000, it indicates that you want to constrain the retrieved information to all department numbers that are greater than or equal to the number 5000.

3. Click on the **Retrieve** button in the Data Entry window header. This action causes the Data Entry tool to query the database for information, and the Data window appears displaying a list of all of the information you requested.



In this example, you receive a list of all department numbers greater than or equal to 5000, along with their corresponding department names.The retrieval data appears as ##### if the numeric precision of the entered data does not match that which was set by the forms designer. In this case, consult the forms designer or system administrator.

Only data for the fields shown in the retrieval form appears in the Data window, which can not be the entire contents of the row. For example, the database might contain a Mail Stop for each item shown in the Data window in the previous illustration. However, the retrieval form shows only the **Department Number** and the **Department Name** fields. Consequently, the Data window lists only that data.

If multiple rows are returned, then the following prompt appears in the message area of your desktop:

Select desired row, then delete or update row.

If only one row is returned, it is entered automatically into the update form. For a description of how to update information, see Chapter 6, “Updating Information” on page 30.

4. Make any necessary changes to the information that appears, close the Data window, and click on the **Reset** button in the retrieval form window header after you have viewed or updated the information.

Deleting Information

You can only delete information from the database if the forms designer has set up your Data Entry icon to allow you to do so. If you want to delete information, but your Data Entry icon does not permit you to do so, consult your system administrator.

To remove information from a database:

1. In the Data window, select the rows of information you want to remove from the database.
2. Delete the rows. A Confirmation window appears.

   This window acts as a safeguard against accidentally deleting information by giving you another chance to cancel or proceed with the deletion.
3. Select **Proceed** to confirm the deletion. The Confirmation window closes automatically after the data is deleted.

   You can cancel the delete request by clicking on the **Cancel** button in the Confirmation window header, or by closing the Confirmation window before selecting **Proceed**.

If your Data Entry icon does not allow you to delete information from the database, the following message appears in the message area of your desktop:

You do not have permission to delete rows.

Stopping Data Retrieval

You can stop the retrieval process at any time if you decide to retrieve different data, or to be more specific in what you are retrieving.

To stop the retrieval process:

1. Press Stop on your keyboard.

   The Important Message window opens.
2. The Important Message window contains one of the following messages, depending on when you pressed Stop:

   Database request was stopped. -- Data can not be complete.

   Database request was cancelled.
3. Close the Important Message window by clicking on the **OK** button.

Chapter 6. Updating Information

This chapter tells you how to update existing information. It describes how to:

Display the update form

Change a single row

Duplicate row changes

Duplicate field data

Enter new data into specific fields

Change all field data

Displaying the Update Form

You access the update form and make changes to the database information by first displaying the retrieval form. Remember, your Data Entry icon must be set up to allow you to make changes. Consult your system administrator if you need assistance. For information about retrieving data, and for an illustration of a retrieval form, see Chapter 5, “Retrieving and Deleting Information” on page 26.

To display the update form:

1. Open a Data Entry icon.
2. Select **Retrieve Data** in the Special menu. The retrieval form appears.
3. Select a field, and enter a constraint indicating the data to be retrieved.

   For example, with fields for Department Number and Department Name, select the **Department Number** field and enter >=5 . This setting indicates that you want to retrieve information for all department numbers that are greater than or equal to the number 5000.
4. Click on the **Retrieve** button in the window header after entering your constraints. The Data Entry tool queries the database, and the Data window appears as shown in Figure 4 on page 31.

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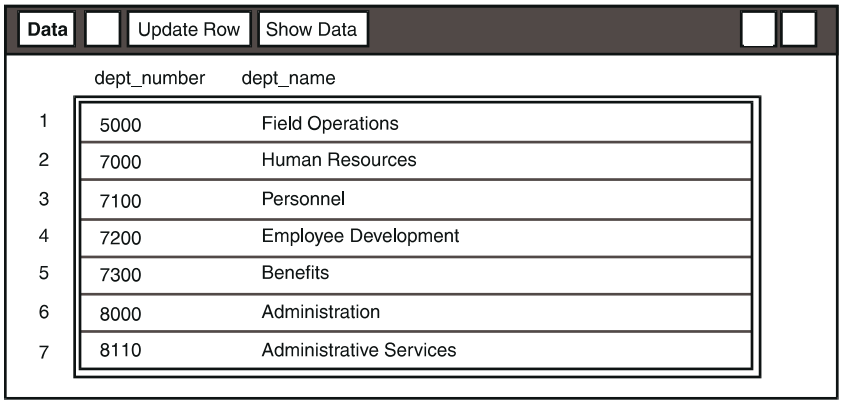

Figure 4. Data window

The Data window lists all department numbers greater than or equal to 5000 along with their corresponding department names. The following prompt then appears in the message area of your desktop:

Select desired row, then delete or update row.

5. Select the row in the Data window that you want to update. For example, suppose you select the first row in Figure 4.
6. Click on the **Update Row** button in the Data window header.
7. The retrieval form becomes an update form and each field displays the information you selected in the first row of the Data window.

   You can also click twice on a row to display the data in the update form instead of clicking on the **Update Row** button.

Changing a Single Row of Information

To change a single row of information:

1. Select a row in the Data window. For example, suppose you select the first row of data in Figure 4.
2. Click on the **Update Row** button in the Data window header. The update form appears and displays the fields that can be updated.
3. Change the field you want to update. For example, change the **Department Number** from 5 to 5 1 in the update form.

   At this point, if you decide not to update the selected row, click on the **Cancel** button in the form window header. When you cancel a change, the update form again becomes a retrieval form. The Data window remains open and you can then select another row if you want to make any further changes.
4. Click on the **Enter** button in the form window header or press Enter on your keyboard to update the database with your changes.

If you entered the data and it is not valid, you receive a warning and a message to correct the invalid data. When the data is valid, the database is updated and the update form becomes a retrieval form.

After you have updated the database, the selected row in the Data window displays an asterisk (*) in place of the original data in each column, indicating that the information was.

5. Enter a constraint in the retrieval form indicating the data to be retrieved.

   In the current example, you could select the **Department Number** field, then enter >=5000. This expression ensures that only those department numbers greater than or equal to 5000 are retrieved when you select the **Show Data** button, rather than all department numbers.

6. Click on the Data window header to redisplay the updated information. Using the **Department Number** example, the new data appears with the **Department Number** as 5010.
7. Close the Data window.
8. Click on the **Reset** button in the form window header if you did not enter any changes.

   You cannot close the retrieval form window until you have either entered information or reset the fields.

Duplicating Row Changes

You can make the same changes to several rows of database information using a quick duplication method.

To duplicate row changes:

1. Select a row in the Data window.
2. Click on the **Update Row** button in the Data window header. The update form appears, displaying the fields that can be updated.
3. Select a field in the update form and change the field entry. For example, you could change the department name from Field Operations to Field Operations (HQ).
4. Open the Field Options window.
5. Select Field Options window.

   When you select **Retain Field**, the data that you enter into the update form is retained for duplication, until you click on the **Reset** button in the form window header.

6. Close the Field Options window.

   See Chapter 3, “Working Within a Data Entry Form” on page 10, for more information about the Field Options window.

7. Click on the **Enter** button in the window header or press Enter on your keyboard to update the database.

   The selected row in the Data window changes to asterisks. The update form again becomes a retrieval form.

8. Select another row in the Data window twice, assuming you want to make the same change to this row.

   The update form displays data for the selected row. Each field already contains the updated information and is ready to be entered into the database.

9. Click on the **Enter** button in the window header or press Enter on your keyboard. The information is cleared from the fields in the update form, and the second row in the Data window is changed to asterisks.

   The update form again becomes a retrieval form.

10. Repeat steps 8 and 9 for each additional row in which you want to duplicate the change.

11. Enter a constraint in the retrieval form indicating the data to be retrieved.

    In the previous example, you could select the **Department Number** field, then enter >=5 . This expression ensures that only those department numbers greater than or equal to 5000 are retrieved when you select the **Show Data** button, rather than all department numbers.

12. Click on the Data window header after you have made all your changes.

    The updated data then appears in the Data window.

13. Close the Data window.

14. Click on the **Reset** button in the form window header if you did not enter any changes.

Chapter 7. Using Data Entry in a Capsule Application

You can use a Data Entry icon to set @-variables inside a capsule application. The Data Entry icon must be customized for a specific application to function in this way. The forms designer must customize the icon for specific field data, and prepare to store that data in @-variables.

This chapter describes how to use a Data Entry icon to set and change @-variables inside a capsule application.

See *CapsuleUser's Guide* if you need more detailed information on working with the capsule tool.

Determining Data Storage

Unless you are the forms designer, it is not immediately apparent to you that an icon has been set to store data in @-variables. You may want to know where data is stored to simplify data entry.

To find out if an icon is set to store data in @-variables, consult with your system administrator or forms designer.

Using @-Variables for Data Entry

You can set @-variables inside a capsule application by clicking on the **Show Controls** button in the capsule window header to display the User Input Control window. However, the Data Entry icon you are using may have fields already set to specific @-variables, in which case the Data Entry tool automatically enters current input into those User Input Control window.

The following steps explain how to enter values into the @-variables of a capsule application with a Data Entry tool, and view the updated @-variables in the User Input Control window.

If you are using a capsule icon that already contains a Data Entry icon, ignore steps 1 and 2, and begin with step 3. Most of the time you use a customized capsule application, where the Data Entry icon was created inside the capsule icon.

1. Open a capsule icon. The capsule window appears.
2. Select a Data Entry icon that has @-variables defined in it, and move it into the capsule window. The capsule window opens.
3. Open the Data Entry icon.

   The capsule tool has a special feature that automatically opens a Data Entry icon as soon as a capsule icon opens. Name the Data Entry icon Auto Open. For more information on this feature, refer to *Capsule User's Guide*.

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4. Enter the particular information for each field in the form. In this case, enter information into the **Department Number**, **Department Name**, and **Mail Stop** fields.

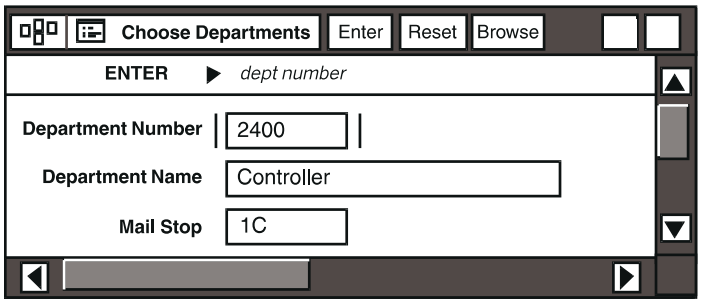

Figure 5. Entry form set to @-variables

When you click on the **Enter** button, the data in the fields is entered into the @-variable fields in the User Input Control window of the capsule application, as shown in Figure 6. Other tools within the capsule application then use those values in the @-variable fields for calculations and data retrieval.

5. Enter new data into the current form if you want to run the capsule application using different values. The @-variables are then reset to the new data specifications. In the current example you could enter different department information into the entry form to run the capsule application for another department.
6. Click on the **Show Controls** button in the capsule window header.

   If you want, you can verify in the User Input Control window that the data you entered is reflected in the @-variable fields.

   The User Input Control window appears.

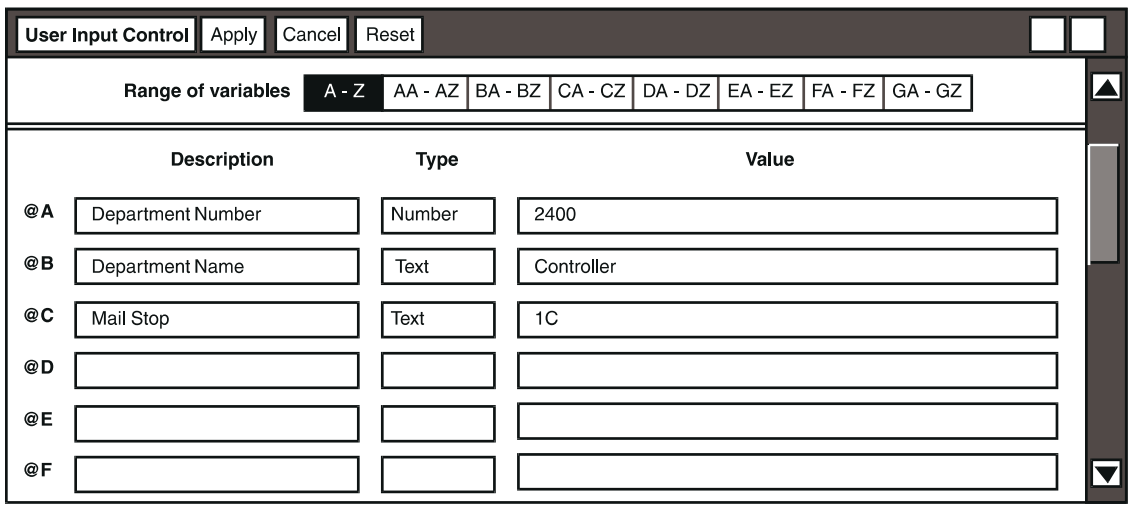

Figure 6. User Input Control window

The forms designer has already entered information into the **Description** field for each @-variable. The **Value** fields reflect the data you entered into the entry form.

7. Close the User Input Control window. You can now continue working within the capsule application.

   Because the purpose of this Data Entry icon is to set values @-variables in the capsule application, you have no need to reopen the User Input Control window.

   If you are a forms designer, you can refer to *Forms Design User's Guide* for more information on creating a Data Entry icon to set @-variables inside a capsule application.

Chapter 8. Using Restricted Functions

The forms designer has access to two additional items in the Special menu. These Special menu items let the forms designer:

Change the design of the form

Store the SQL code generated when the Data Entry tool is used

These items are restricted, and do not appear unless you are using the desktop where the form was created.

Recreating a Forms Design Icon

Only someone using the same desktop where the form was created can recreate the Forms Design icon that was used to create a particular Data Entry icon.

To recreate the Forms Design icon:

1. Open a Data Entry icon.
2. Select **Create Forms Design Icon** in the Special menu of the window header.

   Selecting this item creates a new Forms Design icon. The cursor changes to a Forms Design icon symbol, and the following prompt appears in the message area of your desktop:

   Select location of new Forms Design icon.
3. Select a location on your desktop, in a capsule window, or in a container such as a Folder icon. The Forms Design icon appears as shown to the left.
4. Open the icon. With the new Forms Design icon, you can:

   Replace the original Forms Design icon, if it was lost

   Modify the Forms Design icon and create a replacement Data Entry icon

Refer to *Forms DesignUser's Guide* for instructions for using the Forms Design tool.

Capturing SQL

The forms designer can view and store the SQL activity generated when the Data Entry icon is used. Capturing the SQL activity is especially useful for troubleshooting problems in the Data Entry icon.

The Data Entry SQL Log window, discussed in this chapter, and the Data Entry Log window that appears when you select **Generate Log** in the Special menu are different. The Data Entry SQL Log window records the actual SQL statements used to change the database tables currently being used in any form. The Data Entry Log window only records actual data entered in an entry form or update form. See “Recording Your Entries” on page 24 for more information on the Data Entry Log window.

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To capture the SQL activity:

1. Select **Capture SQL** in the Special menu of the window header.

   The Data Entry SQL Log icon appears on your desktop as shown to the left, and opens.

   When the Data Entry SQL Log icon opens, the date and time appear in the window header. The date and time in each icon name allow you to differentiate between logs.

   You must leave this window open to record the SQL activity. If you close the window, you have to repeat step 2 to begin capturing SQL activity again.

   You now have two windows open on your desktop, the Data Entry window and the Data Entry SQL Log window captures all SQL activity generated in the entry form.

2. Enter information into the Data Entry form.

   The Data Entry SQL Log window reflects your entries, and appears similar to the following illustration.

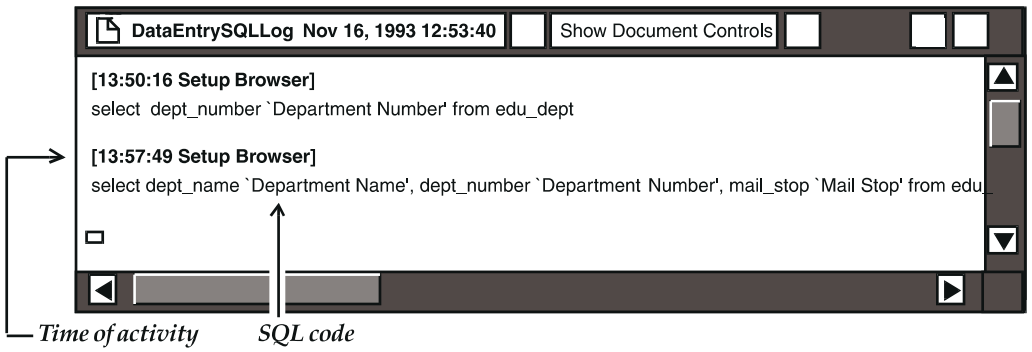

Figure 7. SQL record

   The SQL code in the Data Entry SQL Log window is preceded by the time of the activity, and each SQL activity is recorded in a separate block of text. The SQL code generated from the browse list and captured in the Data Entry SQL Log window is the same code that you entered when you created each field in the Forms Design icon.

3. Close the Data Entry SQL Log window when you have finished using the entry form. This icon now contains a record of all SQL activity for that specific time period.

Glossary

@-variable. A control used to represent a value in any tool that can run inside a capsule application. The Data Entry tool can be used to set @-variables inside a capsule application, if the forms designer designed it in that way.

Browse button. A button that appears in the window header of a form when a particular field is selected. When the Browse button is selected, a window appears displaying a list of valid field entries.

browse list. A list that appears when you select the Browse button. The browse list contains valid entries for the particular field associated with the Browse button.

button. A small area within a window that provides other options or causes an action to occur. Many workstation activities are directed by using the mouse to click on software buttons.

Capsule tool. A tool in which you combine the functions of several tools to build applications.

Capture SQL item. A restricted item within the Data Entry window's Special menu. This item captures all SQL activity generated by the form.

field. A field in a form from which you can select one of several choices, rather than entering text.

Confirmation window. The window in which you confirm or cancel a request to delete data from the database.

constraint. A value specifying the amount and type of data being requested from the database.

Create Forms Design Icon item. A restricted item within the Data Entry window's Special menu. This item recreates the Forms Design icon used to create the current Data Entry icon.

database administrator. The person who issues administrative instructions to a database service. The DBA is responsible for defining the data tables that all data access tools use, as well as for monitoring database performance and assigning user access.

DBA. Database administrator.

Data Entry Log window. A window that records all the information you enter into the database while the main window of the form is open.

Data Entry SQL Log window. A window that records all SQL activity generated by the Data Entry icon.

Data window. The window that shows all the data you requested from the database, and allows you to delete information from the database.

dependent field. A field that displays only when a particular choice in a field is selected.

Enter Data item. A Special menu item in the Data Entry window that displays the entry form.

field. A field in a form in which you can add, retrieve, or update information in a database or capsule icon.

entry form. The form used to enter information into a database table.

error signal. A beep or screen flash warning you that you have made an incorrect field entry.

form. A component of the Data Entry tool used to enter, retrieve, delete, or update information in a database; or supply values to the User Input Controls window of a capsule application.

forms designer. The person who uses the Forms Design tool to create Data Entry icons.

Icon Options window. A window in which you can reset values or display information about an icon.

insertion point. A symbol (I) indicating the point at which text can be inserted in a field.

predefined field. A field in a form that contains information you cannot change.

retrieval form. The form used to retrieve information from a database table.

Retrieve Data item. A Special menu item in the Data Entry window that displays the retrieval form.

section field. A field in a form that displays several choices from which the user can make a selection. Each choice displays a section that contains dependent fields.

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All fields within each section are active and, consequently, can be entered after the user clicks on the **Enter** button.

select. Press the Select key (the left mouse button) while the cursor is on an object.

Show All button. A browse window button that redisplays a browse list after you have specified constraints.

Show Controls button. A button in the window header of a capsule icon that opens the User Input Control window, where @-variables are stored.

Show Data button. A button in the Data window header that displays the updated data.

Show Data Entry Options item. A Special menu item in the Data Entry window that opens the Data Entry Options window.

SQL. Structured Query Language.

Start Transcript item. A Special menu item in the Data Entry window that opens a Data Entry Log window and records the user's entries.

Structured Query Language (SQL). A command language for use with relational databases. The language consists of statements to insert, update, delete, query, and protect data.

tool. A workstation program, such as Text, Reporter, or Query.

Update Browse Lists item. A Special menu item in the Data Entry window that updates the browse lists.

update form. The form used to modify information in a database table.

IDS Publications

This section lists IDS publications, including order numbers. To order copies of the books listed here, or to get more information about a book, see your IBM representative.

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Getting Started with the Intelligent Decision Server (SC26-8892)

Working with the Intelligent Decision Server (SC26-8893)

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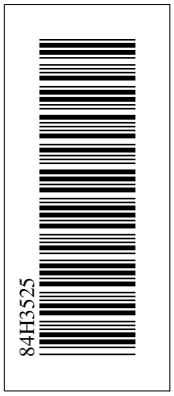

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