Home Librarian
A Computerized Librarian System
User Manual

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This documentation was prepared with LaTeX.
This document describes version 3.0 of the Home Librarian package.

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Preface

The *Home Librarian* system maintains a database of "cards", which describe books, magazines, video and audio tapes, CDs, record albums, laser disks, and other similar items. Version 3 of the system uses a relational database back-end (such as PostgreSQL, MySQL, SQL Server, or SQLite). It connects to the back-end database via a ODBC driver library, so any back-end database system that has a ODBC driver library can be used. The system uses two database tables, a table of cards and a table of keywords. The system also hooks into Amazon's database using Amazon Web Services.

This version of the *Home Librarian* system is written entirely in Tcl[1] and there is no longer any C or C++ code. The system is also built using Starpacks, so there is no need to install any system support software either, since the executable program is completely self contained.

If you have *any* comments about this package, please let me know. My contact information is shown on the back side of the title page. I would be very interested in any comments users of the *Home Librarian* package might have.

Robert Heller
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June, 2010

[1] It does use some standard C coded extensions.

Chapter 1

Introduction

1.1 What Is the *Home Librarian System*?

1.1.1 Basic Terminology

The *Home Librarian* package uses a database of "cards" that concisely describe items in your library, such as books, magazines, records, and tapes. The cards contain information such as the title of the item, the author (or performer) of the material, the publisher, the date of publication, and so on. The cards can be search by their unique keys, or by title, author, or subject. There is also a keyword table that associates keywords with cards.

1.2 How this Manual Is Organized

There are two main chapters, the Chapter /refchpt:Reference is the Reference Manual and Chapter /refchpt:Tutorial is the Tutorial.

Chapter 2

Reference Manual

2.1 Database Structure

Each card uses string of up to 36 characters as a unique key. Cards are indexed by key, title, author, and subject. The keys, titles, authors, and subjects are always compared in a case-insensitive fashion. That is, `"The Door Into Summer"` is the same as `"THE DOOR INTO SUMMER"`. Internally, the keys, titles, authors, and subjects are converted to all uppercase letters. There is also a keyword table that associates keywords (search terms) with each card.

Each card contains thirteen (13) pieces of data as shown in Table 2.1. The keyword table consists of two data fields, a 64 character keyword and a 36 character card key.

2.2 Main GUI Window

The main window of the Home Librarian application, as shown in Figure 2.1, has a progress and status section at the top of the GUI[1], consisting of a "face" area and a progress and status area. The face area holds either a forward facing librarian image, when the GUI is idle and waiting for user input or a right profile when the application is working and not accepting input from the user. The status and progress either holds the message "How May I Help You?" or some sort of status message, usually detailing the number of matches found when searching, when the application is idle. When the application is working an animation of a

[1] Below the attached menu bar.

Name	Type	Description
Key	CHAR(36)	Unique key identifying the item. This is an arbitrary identifier and could be a LC catalog code or some other user-defined identifier. Each card has a unique value for this field.
Title	CHAR(128)	The title or name of the item.
Author	CHAR(64)	The author of the item. This could be the name of the performer for audio CDs.
Subject	CHAR(128)	The subject of the item. What this item is generally about.
Description	TEXT	The description of the item. This is unstructured text and can be whatever you want.
Location	CHAR(36)	The location of the item. This is generally used to note the physical location of the item, such as a particular book self or the fact that it is out on loan, etc.
Category	CHAR(36)	The category of the item. Some user defined category.
Media	CHAR(36)	The media the item is on. The type of media of the item, such as hardbound book, or audio CD.
Publisher	CHAR(36)	The publisher of the item. The publisher or producer of the item.
PubLocation	CHAR(36)	The location of the publisher. The publisher's location (usually just the city).
PubDate	DATE	The date the item was published. The publication date.
Edition	CHAR(36)	The edition of the item. Whether this is a first edition or a second edition, etc.
ISBN	CHAR(20)	The ISBN of the item. If the item has one.

Table 2.1: Data fields in the "Card" table.

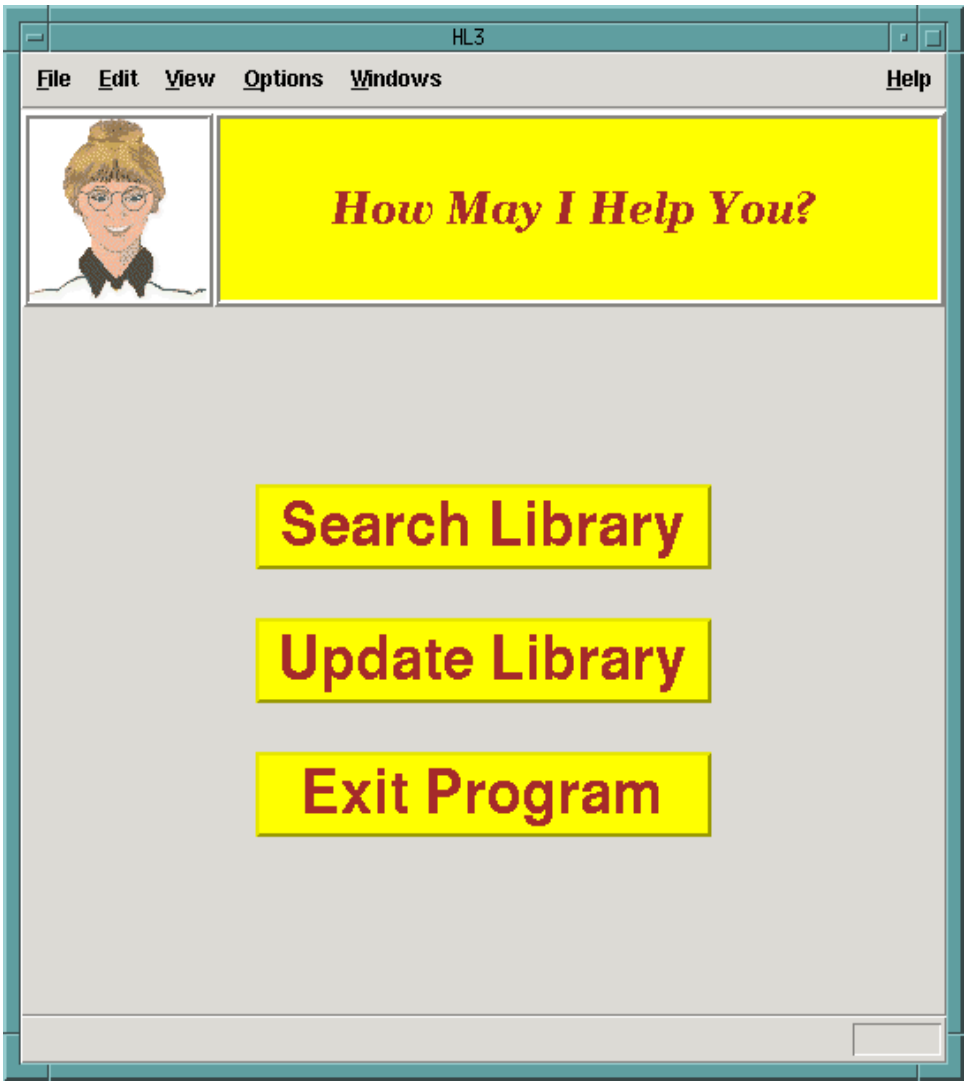

Figure 2.1: The main window of the Home Librarian application

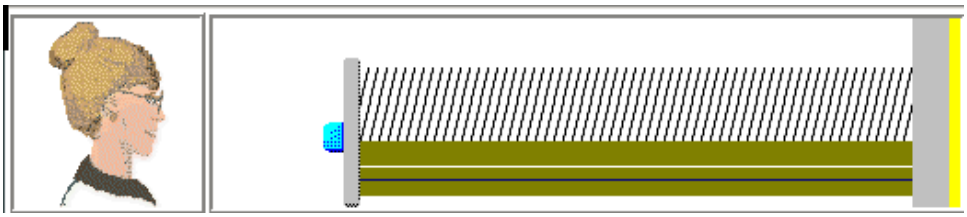

Figure 2.2: Card Catelog Drawer

card catalog drawer being opened and flipped through is displayed, as shown in Figure 2.2.

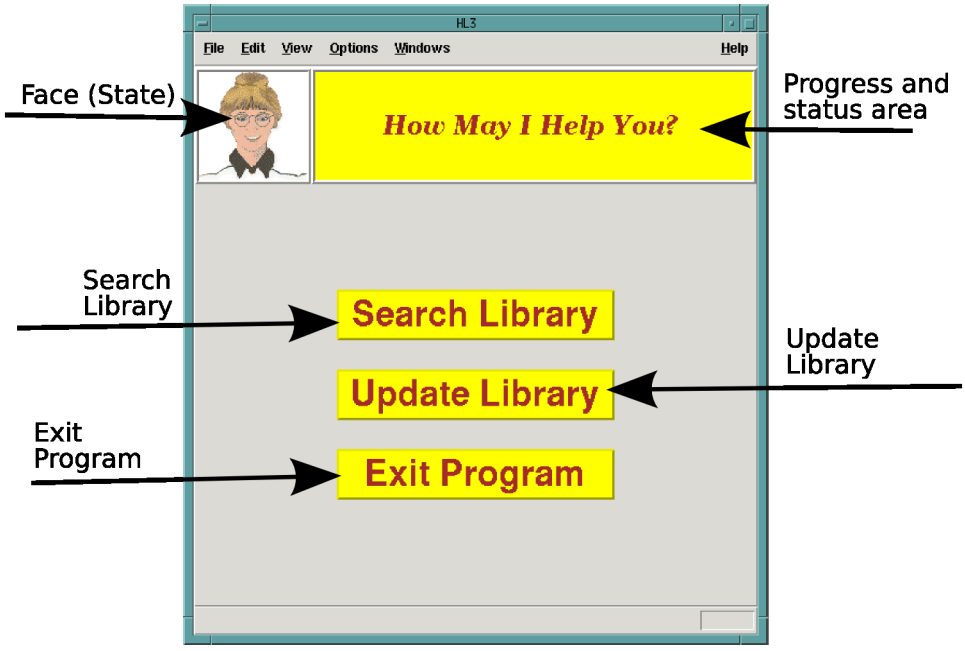

Figure 2.3: Main Window, annotated.

Below the progress and status section is the main interaction area. Initialially, this contains three big buttons giving access to the major functions of the application, as shown in Figure 2.3.

2.2.1 Buttons on the main window

There are two main functions supplied by the application: searching a card catalog database, described in Section 2.3 and editing a card catalog database, described in Section 2.4. The top most button in the initial (and idle) state of the main GUI selects the searching function. The next button selects the editing (update) function. The bottom button exits the application. All of these operations are available from the File menu item as well, along with some additional operations.

Figure 2.4: Search Window, annotated.

2.3 Searching a database (card catalog)

The Search function version of the Main GUI Window is shown in Figure 2.4. This version of the main window has a dropdown menu to select the search mode, a place for entering a search string, a search results list box, a set of search results disposition buttons, a notepad (text) area for making notes, and a set of buttons to manage the notepad area.

2.3.1 Types of searches

There are four types of searches, by title, by author, by subject, and by keyword. The search strings are considered SQL "LIKE" patterns. Like patterns use two wildcard characters: "%", which matches any zero or more characters and "_" which matches exactly one character. The four search fields are stored in the database as all uppercase and the search string is itself converted to upper case, so the search is always performed in a case insensitive manor.

2.3.2 Search results and what to do with them

The search results are displayed as a list below the search string. These list elements can be selected and either added to the notepad area (and then printed or saved as a text file) or more information (the complete card record) can be requested.

2.3.3 The notepad area

The notepad area below the search results can be used to save selected result items and its contents can be printed, saved as a text file, or cleared.

2.4 Updating a database (card catelog)

The Update function version of the Main GUI Window is shown in Figure 2.5. This version of the main window has a place to enter a card key to edit, a dropdown menu to select the search mode, a place for entering a search string, a search results list box, a set of search results disposition buttons, and an Amazon search pane to get Amazon information about items in your library.

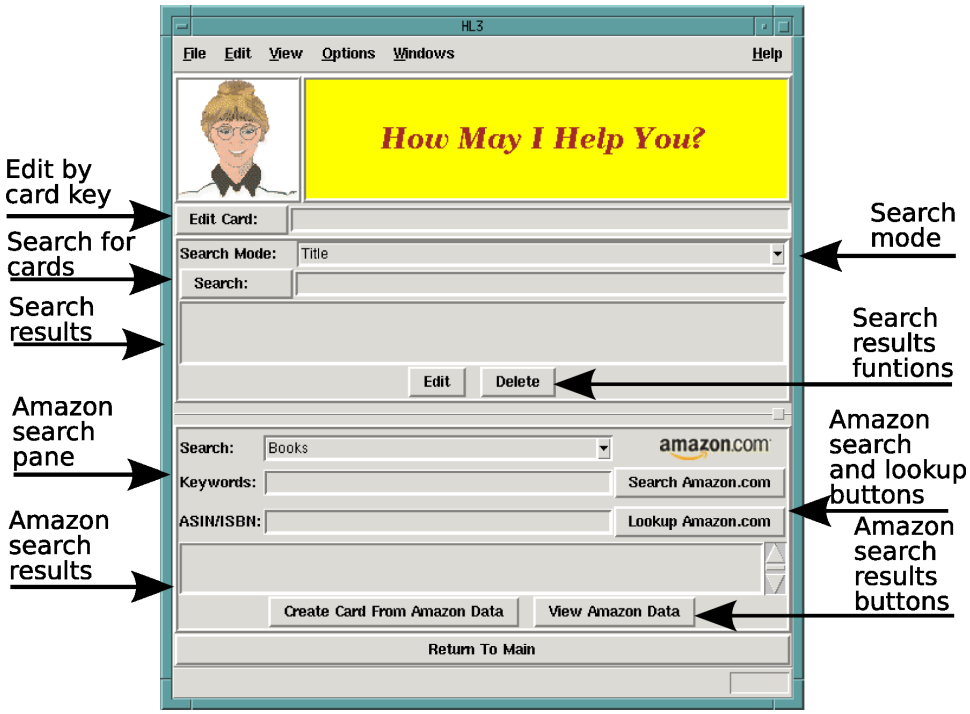

Figure 2.5: Update Window, annotated.

2.4.1 Editing a card by its key

Entering a card key and clicking on `Edit Card` will edit either an existing card (if the key is in use) or create a new card (if the key is not in use). The card editor window is shown in Figure 2.6. If this is a new card, the "Get New Card Template Or Amazon URL Dialog", described in Section 2.5.6 is displayed. See Section 2.5.4 for more information about the card editor window.

2.4.2 Editing a card by searching for it

A search can be performed to find a card to edit. The searching is much the same as described in Section 2.3.1. Cards found by searching can be either edited or deleted.

2.4.3 Searching Amazon's database

Amazon's huge database of books, audio tapes, CDs, video tapes, and DVDs can be searched with the lower half of the update window. Result elements can be used to create new cards or used to provide information for existing cards. Amazon's database can be searched entering search terms and selecting what type of items to look for, this includes books, music, video, CDs, and DVDs. It is also possible to use an ISBN or ASIN to look up a specific item. The search results are listed below the search entries and these items can be selected and used to create a new card or to just view the information in a new window (see Section 2.5.18).

2.5 Dialog Boxes

2.5.1 Get Connection String Dialog

This dialog box creates the connection string needed to connect to the database via the ODBC API. The dialog shows lists of the available drivers and available datasources. Either a datasource can be used directly or a connection string can be created from an available driver. One of the possible configuration files can be used to store the connection string for future invocations of the Home Librarian program.

2.5.2 Select A Template Dialog

This dialog box selects a template card.

2.5.3 Edit Template

This window edits a template card.

2.5.4 Edit Card

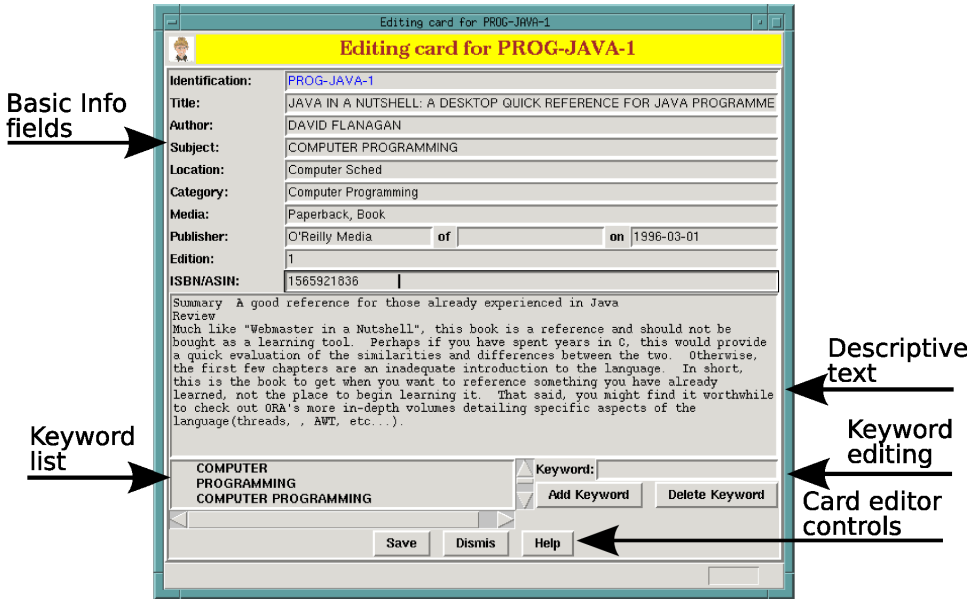

Figure 2.6: Edit Card Window, annotated.

The card editor window, shown in Figure 2.6, contains a collection of basic informational fields in its upper section, with a field containing descriptive text. Near the bottom is a section containing the keywords associated with this card, along with a set of controls for adding and deleting keywords. At the very bottom are buttons for saving the card, dismissing the card editor, and for getting help.

The short fields in the upper section are a standard collection of information fields, including the card identifcation (its unique key), title, the author, the subject, the location, the category, the media, the publisher, the edition, and the ISBN or ASIN of the item. Except for the identifcation field, all of the fields can be

edited. The title, author, and subject fields are converted to all upper case letters for easy searching. The descriptive text is free form text that describes the item. The keywords can be any usefull search terms of your choosing. Keywords can be added or deleted. The keywords are converted to all uppercase letters for easy searching.

2.5.5 Get New Key Dialog

This dialog box gets a new key.

2.5.6 Get New Card Template Or Amazon URL Dialog

This dialog selects either a template or gets data from Amazon to initialize a new card.

2.5.7 Import Dialog

This dialog box selects a file and mode for data import.

2.5.8 Select Printer Dialog

This dialog box is used to select a printer or Postscript output file. The print format and other output details are also selected with this dialog box.

2.5.9 Select A Layout Dialog

This dialog box selects a print layout, either from the layout cache or from a disk file.

2.5.10 Edit Layout Text Tool Dialog

This tool dialog box is used to create a text item in a card layout.

2.5.11 Edit Layout Line Tool Dialog

This tool dialog box is used to create a line item in a card layout.

2.5.12 Edit Layout Rect Disk Tool Dialog

This tool dialog box is used to create a rectangle or disk item in a card layout.

2.5.13 Edit Layout Bitmap Tool Dialog

This tool dialog box is used to create a bitmap item in a card layout.

2.5.14 Edit Layout Resize Tool Dialog

This tool dialog box is used to resize an existing item in a card layout.

2.5.15 Edit Layout

This window provides for editing a card layout.

2.5.16 Print Progress

This window shows the print progress of either text output or cards.

2.5.17 More Info Window

This window shows more information about a selected card.

2.5.18 View Amazon Data

Chapter 3

Tutorial

3.1 Connecting to a database

The Home Librarian uses a database "back end" to store the card records. It is possible to use one of several different database systems, including PostgreSQL, MySQL, Sqlite, SQL Server, and others. All you need is a ODBC driver library installed. The Home Librarian attempts to connect to a database on startup. It reads in one of a set of configuration files for a connection string. If it does not find either the configuration files or if there isn't a valid connection string in these files, it will prompt for a connection string using a "Get Connection String Dialog" (described in Section 2.5.1). A typical "Get Connection String Dialog" box is shown in Figure 3.1. In Figure 3.2 is a "Get Connection String Dialog" with a connection string filled in. Selecting "OK" will connect to the database.

When you connect to a new database or a database never before used with the Home Librarian program, a dialog box prompting confirmation to (re-)create the database is displayed, as shown in Figure 3.3.

Once connected to a database, it is now possible to add cards to the database, using the "Update Library" function. One way to add cards is to search on Amazon for information about items in your library. For example if the book "Java in a Nutshell" with ISBN number 1-56592-183-6, you can perform the search shown in Figure 3.4. We can now hightlight the search result and create a card from it. We are prompted for a new key to uniquely identify this item, as shown in Figure 3.5. We now have a new card record with most of its fields filled out from the Amazon data, shown in Figure 3.6. After a bit of editing, the card editor looks like Figure **??**. The Subject, Location, and Category fields have been filled in.

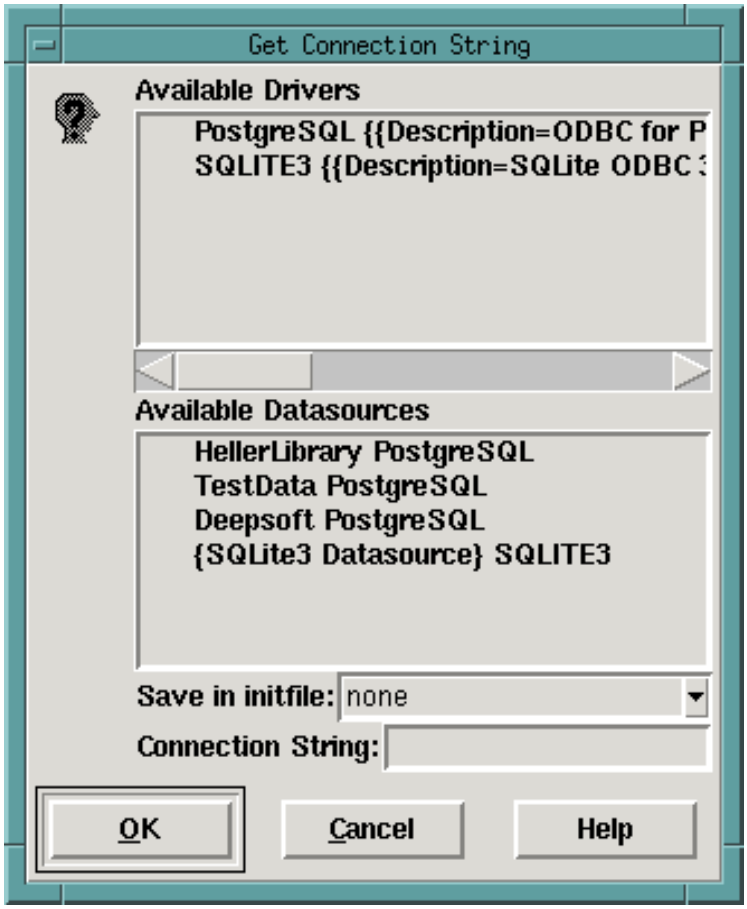

Figure 3.1: Get Connection String Dialog box

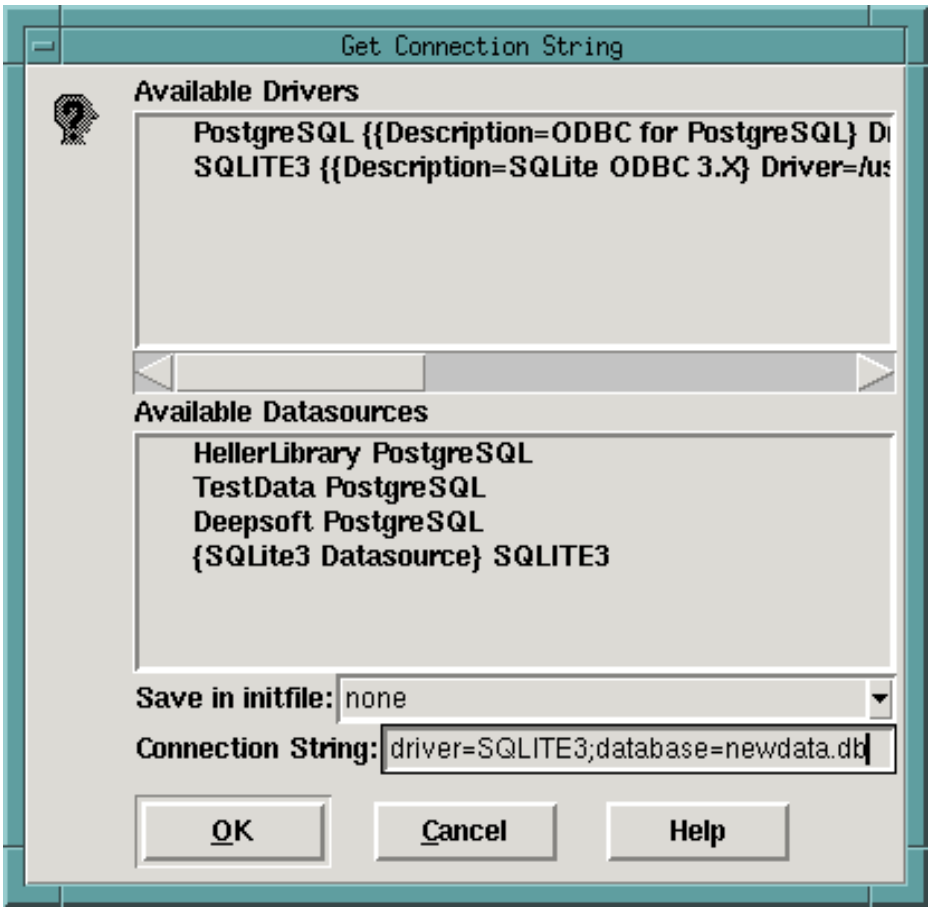

Figure 3.2: Get Connection String Dialog box, with connection string filled in

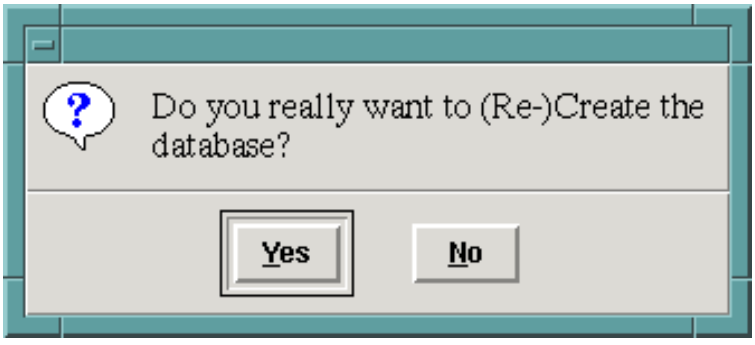

Figure 3.3: (Re-)Create the database question box

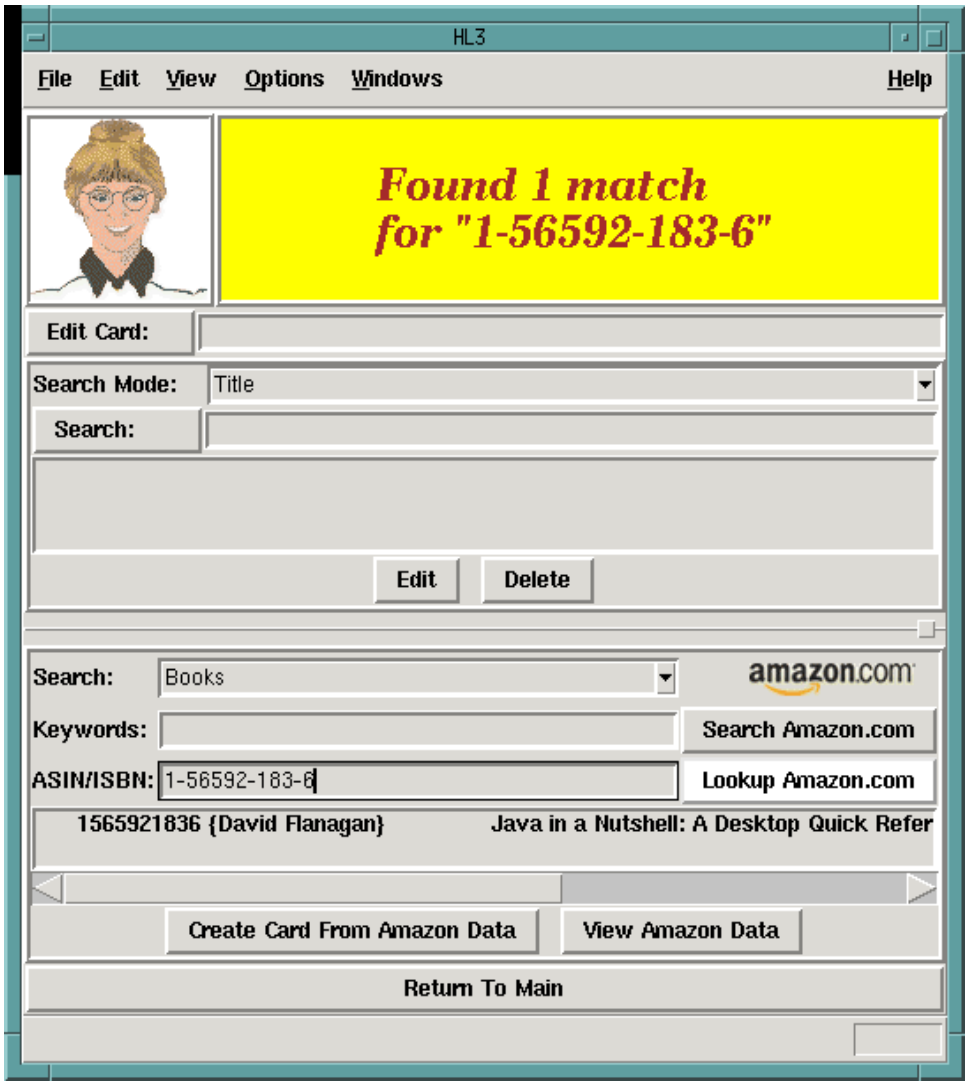

Figure 3.4: Amazon search results for 1-56592-183-6

Figure 3.5: Entering a new key

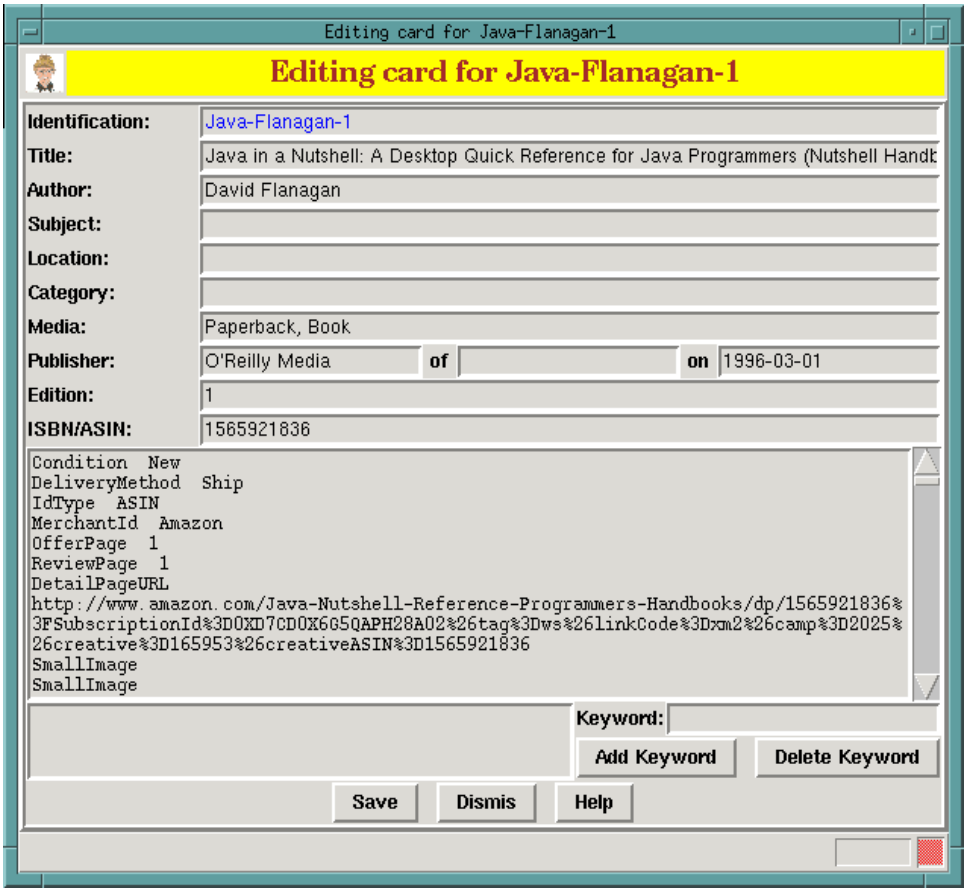

Figure 3.6: Initialized card for Java in a Nutshell

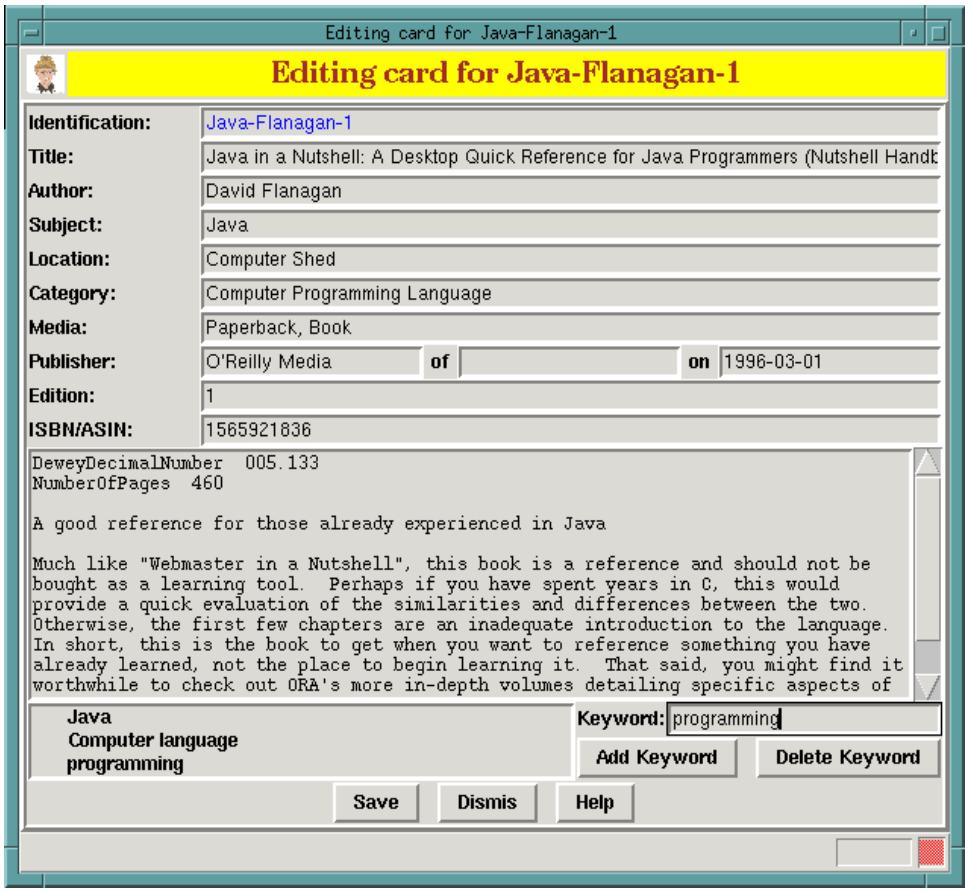

Figure 3.7: edited card for Java in a Nutshell

The Descriptive text has been trimmed, and a collection of keywords added.

We can now save this card in the database by clicking on the “Save” button. We now have a database with this card in it. We can now perform some searches using the search screen.

A card database can be searched in several ways. Figure 3.8 shows a search by keyword using the keyword “java”. And Figure 3.9 shows what is displayed when the search result is highlighted and the “Display More Information” button is clicked.

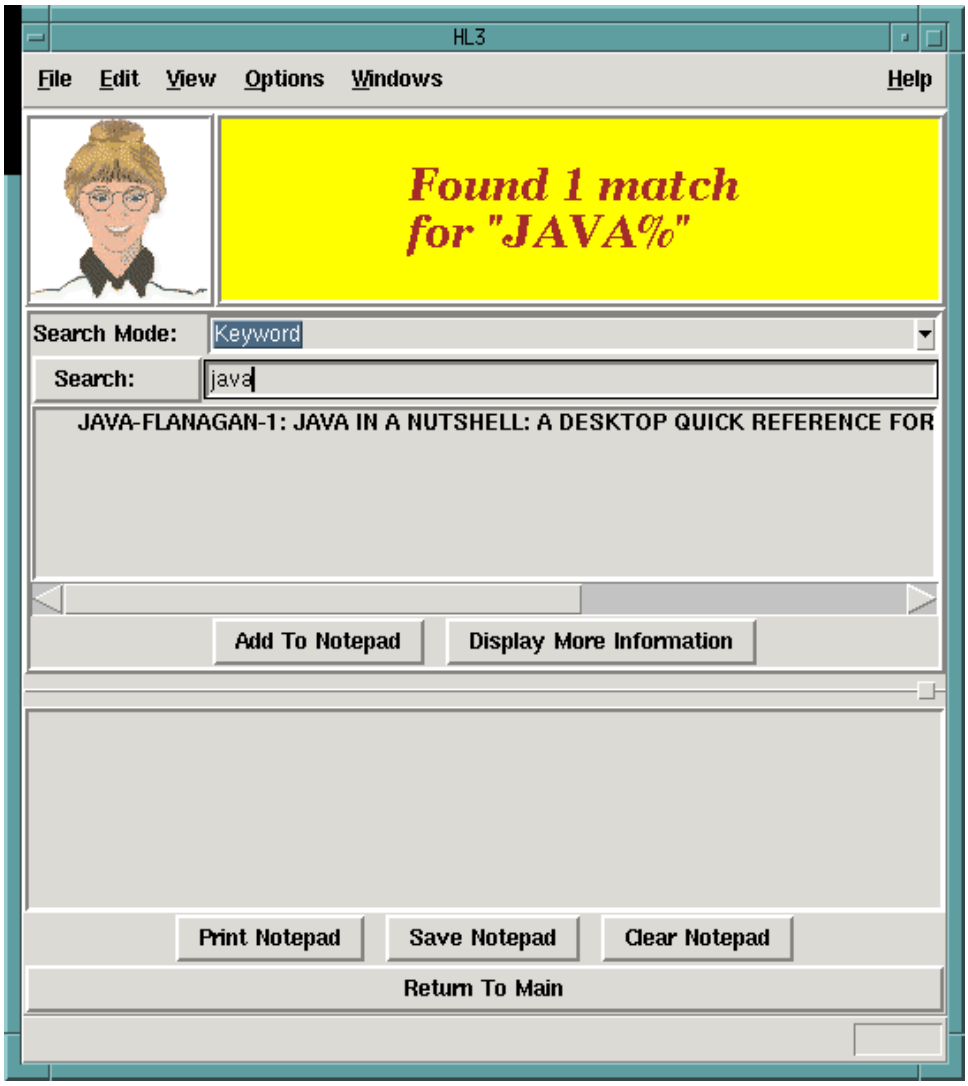

Figure 3.8: Searching for keyword “java”

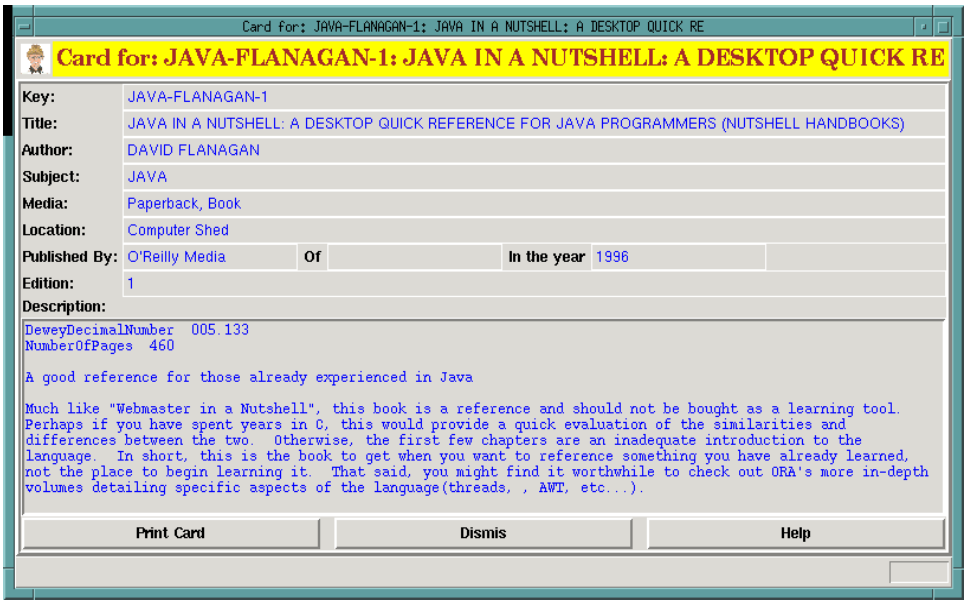

Figure 3.9: More information about Java-Flanagan-1

Chapter 4

Help

This is the on-line help system. It provides access to the complete reference manual and the program tutorial. The left sidebar contains a complete table of contents, with links to all of the main sections of the on-line documentation.

This help window contains some basic navigation features. There are buttons for traversing the history stack and searching the text in the help window itself. There are also key bindings within the help window itself:

s Search forward. Searches forward in the text for the next occurrence of the specified text.

r Search backward. Searches backward in the text for the next occurrence of the specified text.

f History forward. Goes to the next page in the history stack.

b History backward. Goes to the previous page in the history stack.

Tab Next link. Goes to the next hyper link.

Control-Tab Previous link. Goes to the previous hyper link.

Version

System version is 3.0b3.

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```
when run, you must cause it, when started running for such
interactive use in the most ordinary way, to print or display an
announcement including an appropriate copyright notice and a
notice that there is no warranty (or else, saying that you provide
a warranty) and that users may redistribute the program under
these conditions, and telling the user how to view a copy of this
License.  (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)
```

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