CONVERTING DATABASES TO SEARCHABLE FORMATS FOR THE WORLD WIDE WEB

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ABSTRACT: The holdings of the Cadet Hand Library at Bodega Marine Laboratory (University of California, Davis) are maintained in local databases and do not appear on the University’s MELVYL catalog or other publicly accessible databases. The Library’s online catalog, student reports and publications databases, as well as species lists are Inmagic databases running on a variety of PC platforms. We looked for a product that would allow us to convert Library and other BML databases into a format that is searchable via the World Wide Web (WWW).

*BestWebPro*, the “Intelligent Interface Builder,” is a software package that allows you to create a WWW-searchable version of databases that were created in a variety of software packages (Inmagic, Lotus, dBASE, Paradox, etc.). Using simple setup procedures, one can quickly convert from any of four database formats (dBASE, MARC, ASCII label, or ODBC-compliant) into Web-compatible versions that will run on various network platforms (PC, UNIX, SUN, etc.) with most Web server software. *BestWebPro* (TM) creates a fully hot-linked hypermedia version of each database, which can include text, graphics, sound, and even video files. Navigating the resulting HTML databases can be done by browsing, keyword, or partial word searching.

The Cadet Hand Library at Bodega Marine Laboratory (BML), part of the University of California, Davis, maintains a number of local databases that do not appear on the University’s MELVYL catalog or other publicly accessible databases. The Library’s online catalog (4300 records), student reports catalog (2599 records) and publications database (1916 records), as well as species lists are Inmagic databases running on an IBM-compatible personal computer (PC) platform. We looked for a product that would allow us to easily convert both Library and other BML databases into a format that is searchable via the World Wide Web (WWW or Web).

*BestWebPro*, “the Intelligent Interface Builder,” is a software program that creates Web-searchable versions of local databases. With *BestWebPro* you can create Web-searchable, hyperlinked databases from a variety of original sources; select which fields to index, search and display; select which fields will become hypertext links; define the look and feel of the display
(such things as the format for labels, bold vs. italics, etc.); and whether English or French is the primary language. Although BestWebPro must run on an IBM-compatible PC personal computer (minimum requirements: 386 or higher; Windows 3.1x, 95, or NT; 4-8 MB RAM [Windows95 and NT need 16 MB RAM] and 1.4 MB available disk space), the resulting files can be loaded on any number of platforms and served from a variety of http server software. BestWebPro is a ‘multi-media’ software that displays text, numbers, images and audio.

SETTING UP A BESTWEBPRO DATABASE

In less than one hour from receipt of BestWebPro software, we had an experimental database up and searchable on the WWW! Once you have loaded the software from floppy disks onto your PC, there are five easy steps to converting your databases to Web-searchable format. Simple pop-up menus guide you through this process:

1. Define the type of database: BestWebPro allows you to create Web-searchable databases from any of four original database types:
   a). ODBC-compliant
   b). dBASE
   c). MARC
   d). ASCII-label

2. Define the database: This is ‘basic housekeeping’ where you specify names and directory locations for the BestWebPro files; select a language (English or French); define security issues; and define the CGI engine (common gateway interface) which is the actual search engine that will reside on your http server (a number of common CGIs come with the software, others may be downloaded from the company’s Website). This will be done the first time you set up a new database.

3. Define a specific format: Here you define the way your Web-searchable files will look, the order of the fields and how each field is searched and displayed. This will be done the first time you set up a new database.

4. Generate the Web version of your database: With a few simple keystrokes, and a little bit of information, BestWebPro goes to work converting the original files into Web-searchable files. Each time you want to update your Web-searchable files, you must re-generate the database (in other words, you cannot add new records to an existing BestWebPro database, but must regenerate the entire database).

5. Move the Web version of your database to your http server:
   a. Set up the CGI directory on your http server’s configuration (in Netscape Enterprise Server this is done using the Admin Server).
   b. Move the proper CGI search program to the http server ‘s CGI directory that you created in step 5a.
c. Move the *BestWebPro* generated index files, database, and HTML search pages (as well as any custom graphic files) to the proper directory on the http server (that you specified in Step 1.)

d. Restart the http server (you will need to do this each time you add a new database, but not for updating existing databases)

e. Note: Netscape’s http server has problems using relative file references. If you are using a Netscape server program you may need to edit the *BestWebPro* search HTML document. This file will have a name of the form

```
bwdatabase-name
```

where “*database-name*” is the name of the database being generated. In this file you will find a line that looks like this:

```
<ACTION="/bestweb-cgi/bwsearch.exe/library/dbs/bmlcat”>
```

where “/library/dbs/bmlcat” is the partial directory path (from the HTML document directory root to our database files). To have *BestWebPro* work, we needed to add the full path from the Netscape root, so it looks like this:

```
<ACTION="/bestweb-cgi/bwsearch-exe/Netscape/ns-home/HTML-docs/library/dbs/bmlcat”>
```

The search and results screens can be customized to provide the look and feel of your organization. You define how graphics, logos, various backgrounds, etc. are used or not used in search and results screens. The better you understand HTML, the more you can customize the search and results pages.

**SEARCHING THE DATABASE**

Database search screens provide access to the Web-searchable databases. Only one field at a time can be searched in the current version of the software, but multiple-field searching will be possible in a future version. The user types keywords into a Query Box, selects the index to be searched and selects the way in which the search is performed:

a). Any word (OR)
b). All words (AND)
c). Partial words (RIGHT TRUNCATION for at least one word in your query)
d). Begins with (RIGHT TRUNCATION for more exact string searches)
e). Browse the index

The searcher determines the style of the Search Results by selecting Brief or Full displays and the number of records that will be displayed on a search results page (10, 30, etc.). Displays will feature highlighted (i.e., linked) fields with a number (n) that represents the number of times this link occurs in the database.
BESTWEBPRO AT BODEGA MARINE LABORATORY

We are currently using BestWebPro to make a number of different databases, which were created using Inmagic Plus, Microsoft Access (MS-Access), or other software programs, accessible over the WWW. The Web-searchable databases include: library databases (student reports, bibliographies, serials lists, and online catalog), phone/email directories, and even searchable tide tables.

Table 1 gives information about the sizes of our original and BestWebPro-generated databases.

<table>
<thead>
<tr>
<th>Database Name</th>
<th>Original File Size</th>
<th>BestWebPro File Size</th>
<th>Index Size (number of indices)</th>
<th>TOTAL SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog</td>
<td>1.3MB</td>
<td>12MB</td>
<td>3.85MB (10)</td>
<td>15.87MB</td>
</tr>
<tr>
<td>Student Reports</td>
<td>612K</td>
<td>5.1MB</td>
<td>1.9MB (7)</td>
<td>7MB</td>
</tr>
<tr>
<td>GBALC Serials</td>
<td>99K</td>
<td>552K</td>
<td>142K (3)</td>
<td>694K</td>
</tr>
<tr>
<td>Publications</td>
<td>474K</td>
<td>2.6MB</td>
<td>772K (8)</td>
<td>3.4MB</td>
</tr>
<tr>
<td>Phone Directory</td>
<td>131K</td>
<td>101K</td>
<td>22.5K (3)</td>
<td>123.5K</td>
</tr>
<tr>
<td>Tide Tables</td>
<td>98K</td>
<td>509K</td>
<td>71.4K</td>
<td>580K</td>
</tr>
</tbody>
</table>

Each database also carries an overhead of 25.5K.

As you can see from Table 1, not all databases increase by the same amount during their conversion to BestWebPro format. This is due to two factors. First, all BestWebPro databases at Bodega Marine Laboratory carry a 25.5K overhead. This overhead consists of the HTML search and response pages plus BML custom graphics. Second, databases will expand more or less during conversion to Web format according to their "complexity." Databases with large numbers of indices, fields with large amounts of information, and numerous "related" records will have significantly larger index files. This is due to the hyper-textual nature of the BestWebPro database.
Figures in Table 1 were from BestWebPro version 1.0 which is a bit of a memory hog. The newest version of the software (ShowBase), released post-IAMSLIC Conference, claims to generate only one index per database and resulting files should be 50-60 percent smaller than similar files created in version 1.0. (We have not yet tested the upgraded version but will implement it soon).

NEW DEVELOPMENTS SINCE THE IAMSLIC 1996 CONFERENCE

BestSeller Inc., maker of BestWebPro software, recently completed the sale of the software to another company:

ShowBaseMedia Inc.
21A Park Street
Aylmer, Quebec, J9H 4J6
Phone: 1-800-685-9888
URL: http://www.showbase.com
Internet: infobase@showbase.com.

ShowBaseMedia has renamed the product “ShowBase” and will be supporting former customers and developing new markets for the software. I spoke to a ShowBaseMedia representative (who moved from BestSeller Inc. to ShowBaseMedia Inc.) on 15 November 1996. ShowBaseMedia plans to continue to fully support the product and will improve, enhance, and market the software. The representative indicated that ShowBaseMedia “might” discontinue the development of the MARC aspects of the product at some point in the future but he could not comment further at this point about future developments for the software. The ShowBase Website above lists all the demos and clients formerly found on the BestSeller/BestWeb site.

ShowBase retails for $349 US, plus pertinent taxes, and $10.95 for shipping and handling. ShowBase has the following enhancements over the BestWebPro version 1.0 that I demonstrated at the IAMSLIC conference (although I mentioned these would be in the new version):

- files generated by ShowBase are 50-60% smaller
- only one index file is generated for each database
- URL Link and File URL link fields can now be indexed
- field labels in the Web version of the database can be left blank
- record pages now contain HTML 3.0 code
- fields can be indexed up to 8,000 characters
- six new variables have been added to allow customization of your local database
- ShowBase Server has been added to the product to allow you to test your databases locally before moving them onto your http server

The cost to update an existing copy of BestWebPro to ShowBase is $99 US or $130 CANADIAN.