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School Data Collection on the Web: An example with discussion

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Introduction

As the number of schools connected by the Internet continues to grow, there is a growing interest, on the part of State Education Departments in the NetTech region, in using the World Wide Web (WWW) as a data collection tool. This report was inspired by, and was made possible with the kind cooperation of, Dr. Judith Fillion and Sallie Fellows of the New Hampshire Department of Education, who asked for a demonstration of how HTML forms and Common Gateway Interface (CGI) scripts could offer state education departments an opportunity to collect school data over the Web, without relying on traditional paper or floppy disk exchange methods.

Using a paper copy of a personnel form that New Hampshire routinely requires from each of its districts twice each year, we present here an equivalent electronic HTML form through which each school or school district could submit its data over the Web and, without human intervention:

1. Enter the data directly into a small, efficient centralized database,
2. Receive immediate confirmation that the data has been successfully received and entered,
3. Receive comparisons of entered statistics with those of previous years, and
4. Allow districts to quickly retrieve statistics from past years.

We begin with a discussion of networked models for data collection that do not use the Web (i.e., that do not make use of the Internet Hypertext Transfer Protocol, HTTP) in order to motivate the use of the Web in our example. We then explain how the New Hampshire example was implemented, and discuss some of the critical issues involved in planning a Web-based data collection system at the State level. Although our choice of personnel data is admittedly banal, our discussion is meant to stimulate ideas about collecting and sharing a variety of school data (e.g., statistics about student work, school health statistics, lesson plans and syllabi, or budget information) using the Web.

Internet and Intranet Approaches

Perhaps the most elementary use of a state-wide computer network for the collection of school data, would involve the use of a central file transfer protocol (FTP) server, located in the state's department of education, to receive uploaded files from individual school districts, and provide files for those districts to download. Such a system would provide a low-bandwidth, low-maintainence solution and is especially useful in cases where: schools and school districts use different computing platforms; connections to the Internet are slow; Internet services are restricted and variable from district to district; and the cost of Internet service or software is an issue [1].

An FTP server used for data collection or retrieval allows files in various formats to be uploaded and downloaded quickly and easily; but, this may be a regarded as a disadvantage when states cannot control the brands and versions of software used by schools and school districts [2]. Further disadvantages of the FTP server solution for school data collection are:

- The need for an external notification mechanism so that school districts and state administrators are made aware that materials have been uploaded or have been made available for downloading.
- The need to inspect uploaded files to see if they have been prepared properly and have not been corrupted during the transfer process. Although this inspection might be automated in large part, it would require considerable programming expertise, and at least some human intervention, if files were submitted in a changing variety of formats.
- Data from files properly prepared and uploaded need to to be entered into the central database in a separate step. Here too automation would be possible, but would be made difficult by data submitted in a changing variety of formats.
- The lack of synchronous methods of confirmation and feedback, and of secure methods for sharing data between schools [3].

At the other extreme is the construction of a state-wide computer network for school data collection that could be run as an *Intranet*, using sophisticated software that allows for controlled data transfer, collaborative work, and group communication [4]. Although such a system would provide great functionality and security, as well as creative possibilities for data collection, dissemination and analysis on the network, the bandwidth requirements, as well as the hardware, software and staff training costs, are likely to remain beyond the means of most schools and school districts in the near future.

A Web-based approach, then, may provide states and schools with a practical, and desirable middle ground. One of the most promising features of Web-based data collection systems is their ability to address the shortcomings of the FTP server system, using resources far less sophisticated and expensive than those required by groupware applications built upon proprietary protocols. Users of the Web-based system described and demonstrated in this report can submit data from virtually any machine connected to the Internet, and that data can be stored that on any machine capable of housing a Web server and a PERL interpreter -- computers running Windows, MacOS, Unix, and Linux, for example, can all currently do this.

Another promising feature of a Web-based system is that, because HTML forms can be made visually equivalent to the original paper forms, the only training required for people who would like to enter data would be their learning how to use a Web browser. We believe most school employees, in a few years at most, will already be familiar with such technology [5].

The New Hampshire Example

Twice each year, the New Hampshire Department of Education requires school districts to complete the personnel form featured in this report. Thus the task of our Web-based example is to illustrate how the data could be gathered from different locations, collected and stored centrally, made available to users with appropriate permissions at different locations, and made unavailable to users not possessing these permissions. In presenting the example in the form of an electronic report, we include not only an explanation of the data collection system, but an opportunity for

readers to actually use the system: by clicking on appropriate links and buttons the reader will be able to interact with the software and the sample database located on the STG Web server.

The system explained and demonstrated here consists, on the server side, of several specialized CGI scripts and a simple, generic DBM database. The system encountered by the user, however, consists only of HTML pages and forms. This makes it possible for users to intract with the system from any computer capable of running a Web browser (e.g., Netscape, Internet Explorer or Lynx).

The programs facilitating the interactive forms are all implemented as CGI scripts, written in the popular programming language called PERL. [6] These scripts are small and easily produced, and the system is generic in the sense that it can be easily customized to suit the individual data collection, authentication, and reporting needs of any school department in the NetTech region.

The data collection system based on the New Hampshire personnel form can be demonstrated in two parts:

1. As an HTML equivalent of the paper personnel form that allows you to view and enter data, and submit it either as a new entry or as an updated entry. The numbers you will see in the fields on the form are for convenience only, and anyone may change the numbers in the data fields. In order to successfully submit the data, however, you must choose a school district and identify the Superintendent of that district successfully. Therefore, you may wish to consult the District/Superintendent Validation database first, to find out the appropriate assignments.

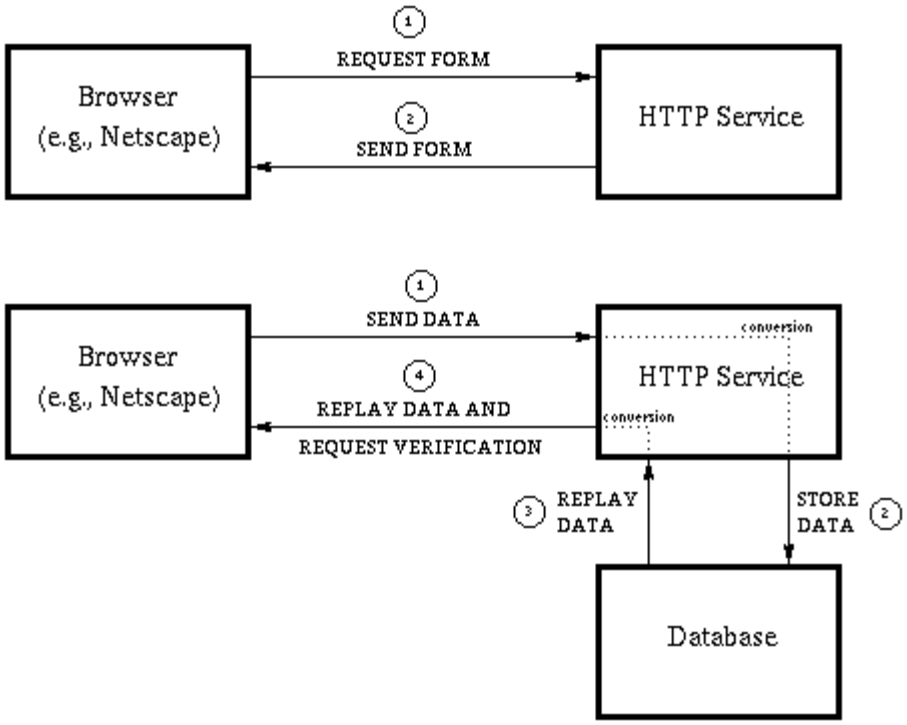
   We will say more about authentication and security below, but here we note that the electronic form has Username and Password fields at the bottom of the page that could be used for authentication in addition to the District/Superintendent identification method. (For the purposes of this example, we do not require either a username or password, and we allow users to create new associations between districts and superintendents.)

   Finally, we have configured the system to confirm and display the data you enter, and to return 1996 data from the district you claim to represent, coloring red those fields that show increases or decreases of more than 25% in the two-year period. This is meant to demonstrate the automatic confirmation system, and to suggest ways that a state department could use the system to call attention to statistics it thinks particularly important.

   You may wish to enter or update data in the Personnel Form, to see how the interactive system works (If you have questions about, or find errors in, this or any part of this report, please let us know by sending e-mail to the authors or simply to nhdata@brown.edu).

2. As a short form to Retrieve Personnel Data from Previous Years, by district. Here we have disabled the authentication methods, and you will notice error messages should you request data from a year prior to 1996 (i.e., there are currently two years worth of data for each district in our database). Here too the scripts are easily modified to provide authentication and customize the nature of the feedback and error messages.

The way the CGI scripts work can be illustrated as follows:



The top portion of the diagram shows what happens when a user requests the data collection form from the Web server (e.g., when the user clicks on enter or update data in the Personnel Form [http://cds.library.brown.edu/cgi-bin/edu/input_data-demo], here or above). The Web server calls a CGI script (input_data-demo) that, after identifying the browser, sends out an appropriately formatted data entry form.

The lower portion of the diagram shows what happens when the user fills out the form, and submits the data to the Web server. The Web server calls CGI scripts that validate the data, convert it, then enter it into the database. (Each entry in this particular database associates a key consisting of 1) the year, 2) the name of the district submitting the form, and 3) a label indicating the source field in the input form, with the data the user entered into that field.) The CGI scripts then re-fetch the data that was entered, along with the data from the preceding year, highlighting any significant changes. Finally, the Web server sends this data back to the user, and requests verification.

Security and User Authentication

A Web server holding files containing fundamentally private information should raise serious questions about security. In essence, the operation of a Web server opens the computer on which it is running to millions of potential users. Although Web servers allow administrators to limit outside access in various ways, combinations of oversights, on the part of system administrators and software designers, continually expose security "holes" that can be exploited by expert users.

This said, it might easily be argued that the level of security offered by a competently administered Web server is considerably greater than in an average office, where forms are collected, copied, collated, and sent out to various people who may or may not have any concern for the security of the data represented. Unless the data requires considerably greater protection than one would normally find in such an office, we believe a well-administered Web server will provide more than adequate security.

Perhaps the most critical security measures for school districts using the computer for data collection and storage are the performance of regular backups for computer data, and the enforcement of some sort of user authentication. In the system demonstrated in this report, the only authentication used involved the identification of superintendents. A password facility is built into the scripts, but has not been used in this demonstration. States and districts that consider making use of some variant of this system should feel free to add server-enforced password protection, (e.g., htaccess

files) as well, or, if the security of the data is an overwhelming concern, end-to-end encryption. These protections can be combined with restrictions based on IP address and/or machine name (allowing districts to require that data be input from specific machines or domains).

Obviously, state departments should make sure to instruct the person ultimately responsible for the configuration of the Web server to provide whatever forms of authentication are necessary. As not all Web servers can perform all of the forms of authentication mentioned here, before purchasing a piece of hardware or software we advise that you look into whether it supports the desired features [7].

The DBM "Database"

Although it would have been possible to use a large, commercial database package to house data from our forms, we felt it was important to show this was unnecessary. All that is required here is the ability to associate keys with values; in our example the keys were a combination of the year, the district, and a location in the input form. The values were just that: *values* typed into the input form at the given locations by a user. For example, key = "1997:District-10:f1a", value = "145", means "for the year 1997 in district 10, the value given for field 1a in the input form was 145".

Normally, a set of key-value associations are implemented by programmers using objects called *hash tables*. Hash tables, however, only stay in memory as long at a program is running. Our system clearly required something that would hold our data on disk for subsequent program runs. What we needed, in other words, was a persistent hash table.

Fortunately, most PERL installations have a set of simple, fast, hash-like routines known as DBM routines. These are elementary, generic database routines capable of storing key/value combinations in the manner of a hash table, and of doing it on-disk, rather than in volatile memory, so that the data could be accessed and modified on subsequent runs.

Similarly, the functions of DBM routines can be duplicated by any commercial database. As a result, if a district wants to import its data at the end of a given recording period into a larger commercial database, or into desktop spreadsheet programs, all it requires is a few lines of additional PERL code. PERL, fortunately, has modules for outputting files in most major database formats. It can also easily produce tab-delineated files suitable for import into, say, Excel [8].

Further technical documentation about our choice of scripting language, server recommendations, and porting scripts between operating platforms is available on a separate page.

Conclusion

The example of a Web-based school data collection system demonstrated here is fast, simple, flexible, and inexpensive. It shows how basic Web technology can be used now to improve communication and information sharing between schools, school districts and the state administration. We hope state departments of education in the NetTech region, and elsewhere, will benefit from this example and discussion, and will make use of our findings in their planning processes. Finally, anyone may use and modify any of the forms, scripts or documents available here, provided that all copyright information is left intact.

Notes

[1] FTP clients (e.g., Dartmouth University's Fetch) have been and are likely to remain free, and can be used successfully with a variety of Internet connections. They do not require access to the Web, or even electronic mail capabilities.

[2] Although interoperability and platform independence have long been mentioned as goals in software design, an inability to share documents created with different *versions* of a particular software package (e.g., Microsoft Word), much less those created by different software packages, remains a common and thoroughly frustrating experience.

[3] By "synchronous" here we do not mean instantaneous, but basically within the same temporal frame. This is opposed to asynchronous methods, in which the sender and receiver are not necessarily in the same temporal frame (e.g., communication by surface or electronic mail).

[4] Probably the most well-known of the these systems, or environments, is Lotus Notes; but it is significant that most "groupware" producers (including Lotus) are turning to the Web as a primary medium for development.

[5] Not everyone would agree with this assessment, of course, and it is an open question whether the Web browser will be a long-lived interface. Indeed, in his recent novel *Infinite Jest* (Little, Brown and Company, 1996), a story set in the first decade of the 21st century, David Foster Wallace alludes to the Web itself as having been a short-lived phenomenon (see especially p. 620).

[6] For more on the Practical Extraction and Report Language (PERL), see the searchable manual page at Carnegie Mellon University (http://www-cgi.cs.cmu.edu/cgi-bin/perl-man).

[7] For an example of this kind of information, see the WebCompare site at http://webcompare.internet.com/.

[8] For a list of publically available PERL modules, see http://www.metronet.com/perlinfo/modules/ .

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PART B. PROFESSIONAL, NON-PROFESSIONAL PERSONNEL BY SCHOOL

See Accompanying Instructions for Definitions

Teaching Personnel
Round all FTE's to the nearest tenth

	Elementary		Secondary	
	Male	Female	Male	Female
1a. Number of pre-school teachers in **full-time equivalents**				
1b. Number of kindergarten teachers in **full-time equivalents**				
2. Number of full-time classroom teachers				
3. Number of part-time classroom teachers in **full-time equivalents**				
4. Number of instructional Aides in **full-time equivalents**				

5. Average salary of all **FULL-TIME** teachers in the district $ _____

Other Professional Personnel and Support Staff
Round all FTE's to the nearest tenth

	Elementary		Secondary	
	Male	Female	Male	Female
6. Number of principals in **full-time equivalents**				
7. Number of assistant principals in **full-time equivalents**				
8. Number of guidance counselors/directors in **full-time equivalents**				
9. Number of librarians/media specialists in **full-time equivalents**				
10. Number of library/media support staff in **full-time equivalents**				
11. Number of non-teaching Special Education professionals not included above in **full-time equivalents**				
12. Number of clerical support staff in **full-time equivalents**				
13. Number of other support service staff in **full-time equivalents**				

_____ Date

_____ Superintendent of Schools

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District/Superintendent Validation Database

- View District-Superintendent Associations
- Change a District-Superintendent Association

[Back to the first page]

Current Superintendent-District Associations

District	Superintendent

[Validation Database] [Home]

Change a Superintendent-District Association

District: [ ] Superintendent: [ ]

["Change Superintendent button" disabled, project archived]

[Validation Database] [Home]

Retrieve Data

District:

Year:

Submit

[Home]

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Technical Documentation

Contents

Overview

The system documented here consists, internally, of several specialized CGI scripts and a simple, generic DBM database. Externally, however, it consists of HTML pages and forms - making it possible for users to interact with the system from any computer with a Web browser such as Netscape, Internet Explorer, or Lynx.

Java Experiments

In efforts to make the system totally platform-independent, we began implementing its internal CGI modules in Java. Java was to provide us with simple, consistent, platform-independent means of coding our CGI scripts. Java, however, turned out to be less than adequate to the task, mainly because of its isolation from the user's *environment* (which is fundamental to all CGI programming), and because of difficulties we encountered running interpreted Java CGI scripts via our Web server.

Although we found programs at San Diego State University that enabled us to do CGI in Java, we decided against them because they required a platform-specific work-around in C. Although Java is steadily becoming more useful for CGI scripts, it was, and still is not (Jan 1997), a complete and well-developed resource.

Porting from Unix to Macintosh

Initially, we got the data collection scripts up and running under Unix. In efforts to demonstrate the transportability of the system, we decided to port it the Macintosh. Though not difficult in theory, this port was not without a few practical glitches. These include:

File names:
Unix file names, with the components separated by slashes, (e.g., /usr/bin) had to be converted to filenames with the components separated by colons. Also, we found it necessary to turn relative paths (e.g., etc/) into absolute ones.

CGI file types:
CGI scripts had to be saved as MacHTTP CGI Scripts. An extension for MacPerl 4.1.4+ is currently available at ftp://err.ethz.ch/pub/neeri/MacPerl/.

Failure of MacPerl CGI Library
We had to use the Unix CGI library for PERL, since we could not get the then-current (July 1996) version of MacPerl CGI library to function properly. See also our comments below on server platform recommendations.

File extension:
We had to ensure that all scripts had the .cgi extension, to prevent people's browsers from downloading the scripts instead of executing them.

The scripts ran fine under two different Mac-based Web servers, MacHTTPd and WebStar.

Porting from Unix to Windows 95

Porting from Unix to Windows was a lot more straightforward than porting to the Mac. Windows 95's long-filename capability allowed us to use the name filenames we had used under Unix. And Windows had no trouble using relative paths. Essentially, all we had to do with the paths and filenames was change the Unix slashes into DOS/Windows backslashes.

The only real difficulty we encountered was in getting the data-filing subroutine to work properly under PERL 5. PERL version 5 no longer has built-in support for DBM database files. To make them work, we simply added `require SDBM_File; require TieHash;` directives to our code, which linked in the necessary PERL 5 DBM routines.

Important to note in this connection is that DBM files are platform-dependent. That is, one must generate them on the server where they will be used, or else on an architecturally similar server. To eliminate any possibility of problems here, we recommend that people never copy the database from one machine to another, but rather generate on the machine where it will be used.

To run our PERL scripts from a browser, using a PC-based Web server, one must:

1. Download and install PC PERL on the server.
2. Make sure all scripts have a "pl" extension, i.e., that all script names end in ".pl".
3. Associate the "pl" extension with the PERL interpreter. In other words, one has to make sure Windows knows that files with "pl" endings are PERL scripts. This can be done in many ways; consult the Windows manual if in doubt.

Please note that without a pl->PERL association, the scripts will not run as CGI applications.

Another (minor) difficulty we encountered in porting the Unix scripts to Windows involved server-side includes. Server-side includes (SSIs) are commands in HTML files that tell the server to include other HTML files. It's kind of like mail merge with an office word processor. You can tell the server to merge in data from other files before "printing" out the text of the requested document for the user.

By default, all HTTP servers we are aware of (in particular, the PC-based ones we tried) don't enable SSIs by default. This is partly for security reasons, and partly because, in order for the inclusion mechanism to work, the server has to read through every file it vends looking for SSI directives. If it finds any, it must then find and merge in the specified files. This takes time. To eliminate hassles and overhead setting up SSIs, as well as the inherent security problems involved in their use, we removed some functionality from the PC version, supplanting the SSI's with straight HTML code. Continuing the metaphor used above: We shelved the merging, and just typed in the text verbatim.

One excellent piece of news is that the Windows 95 scripts that arose out of this conversion process were found to run, nearly unaltered, under Windows NT. We have done the port. The system, though, has not been sufficiently tested under NT for us to formally certify it.

Server Recommendations

The question of authentication and server setup raises another issue: What platforms and/or operating systems should be used to run the CGI scripts?

In general, we recommend that our CGI scripts be run on a multi-user Unix or NT machine, rather than on a Windows 95 machine or a Macintosh. There are certain disadvantages to doing things this way. Unix and NT are more complex than MacOS or Windows, and therefore potentially less secure and more difficult to administer. The advantage, though, is that Unix and NT were coded, from the ground up, for efficient, reliable, networked use.

Currently, the strongest reasons for using NT are the relative ease of use and compatibility with other versions of Windows. The main reason for using Unix, on the other hand, is that it is an open-specification system, not owned by a particular individual or corporation. PERL is also best supported under UNIX.

A final recommendation we would make is that districts give serious consideration to buying space on an existing server rather than setting up one themselves. Most Internet service providers offer such space as part of a package deal, and will, at the customers request, install CGI scripts that they can comb and verify as secure. In many cases, they will even customize CGI scripts for a reasonable fee. All that would be required of the district, in this case, would be to provide what little training was required for data entry, and to appoint a technical liaison with the Internet service provider.

The Scripts

Source code for the scripts discussed here is available for all three platforms discussed here, Windows, Macintosh, and Unix, subject to the terms outlined in the Technical Report.

Please send questions and comments to nhdata@brown.edu

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CGI Scripts (in PERL): Source Code for Three Common Platforms

- Unix: nh.cgi, nh.lib
- Windows: nh.pl, nh.lib
- Macintosh: nh.cgi, nh.lib

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```
#!/usr/local/bin/perl

#-----------------------------------------------------------------
# Personnel: main script
#-----------------------------------------------------------------

# Use sub library
do 'nh.lib';

# Read CGI parameters with standard PERL library
require 'cgi-lib.pl';
&ReadParse();

# Get the Browser type:
$browser = $ENV{HTTP_USER_AGENT};
$district = $in{district};

# Specify whether user is inputting or updating the data.
# If for some reason the radio button input does not have a value of
# "replace" or "update", the script will by default only update the data.
# This measure is to prevent script malfunctions from zeroing out
# previous data.
if ($in{update} eq "replace") {
        $update_bit = 0;
} else {
        $update_bit = -1;
}

# Print MIME-type header so output is recognizable as HTML by the browser
print "Content-type:text/html\n\n";

# Password, if implemented, could be checked for here
# &check_password; (or whatever you want to call the subroutine in nh.lib)

# Validate superintendent
&validate_superintendent;

# If superintendent is valid, go ahead and file and display the data
unless ($super_validity != 1) {
    &print_header;
    &get_date;
    &file_data($update_bit);

    unless ($non_numeric_flag == 1) {
        &load_data($year);
        &whatbrowser;
    }     # end unless
} else {
        print "<p><h2>The superintendent's name you submitted is not ";
        print "associated with $district.</h2></p>\n";
        print "<p>Please <a href=\"$in{last_page}\">";
        print "return</a>.</p>\n";
}
```

```
#---------------------------------------------------------------------
#Print header
#---------------------------------------------------------------------
sub print_header {

print "<p><H1>Thank you, district of $district </h1></p>";
print "<p>You have submitted the following data from $ENV{REMOTE_HOST}.<br>";
print "You are using a \"$browser\" browser.</p>\n";
print "<p><hr size=3></p>";

}

#---------------------------------------------------------------------
#Determine browser
#---------------------------------------------------------------------
sub whatbrowser {
$nocomp = $_[0];

#set scratch variable equal to browser type
$_ = $browser;

#scan scratch variable for HTML info type
if (/Mozilla\/[2-3]/) {
      $tables = 1;
   } elsif (/Mozilla\/1\.1/) {
      $tables = 1;
   } elsif (/MSIE [2-]/) {
      $tables = 1;
   } elsif (/NCSA Mosaic\/[1-2]/) {
      $tables = 1;
   } elsif (/NCSA Mosaic\/[3-]/) {
      $tables = 1;
   } elsif (/Lynx/) {
      $tables = 0;
   } elsif (/Mozilla\/1\.0/) {
      $tables = 0;
   } else { # Table support assumed if browser is not recognizable.
      $tables = 1;
}

if ($tables == 1) {
      &with_tables($nocomp);
   } else {
      &no_tables;
   }

#---------------------------------------------------------------------
# With tables
#---------------------------------------------------------------------
sub with_tables {
$nocomp = $_[0];
$two_nocomp = 2-$nocomp;
$four_2nocomp = 4-2*$nocomp;
```

```
print "<table width=\"100%\" border=1>";
print "<tr>";
print "  <td width=\"40%\"><p><strong>Teaching Personnel</strong></p></td>\n";
print "  <td colspan=$four_2nocomp><p><center>Elementary</center></p></td>\n";
print "  <td colspan=$four_2nocomp><p><center>Secondary</center></p></td>\n";
print "</tr>";

print "<tr>";
print "  <td><p><em>FTE's rounded to the nearest tenth</em></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Male</center></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Female</center></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Male</center></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Female</center></p></td>\n";
print "</tr>";

print "<tr>";
print "  <td></td>\n";
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>1a. Number of pre-school teachers in <strong>full-time equivalents</strong></td>\n";
print "  <td><p><center>$thisyear{f1aa}</center></p></td>\n";
print "  <td><p><center>$lastyear{f1aa}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f1ab}</center></p></td>\n";
print "  <td><p><center>$lastyear{f1ab}</center></p></td>\n" if (!$nocomp);

print "</tr>";
print "<tr>";
print "  <td><p>1b. Number of kindergarten teachers in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f1ba}</center></p></td>\n";
print "  <td><p><center>$lastyear{f1ba}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f1bb}</center></p></td>\n";
print "  <td><p><center>$lastyear{f1bb}</center></p></td>\n" if (!$nocomp);
print "</tr>";
print "<tr>";
print "<td><p>2. Number of full-time classroom teachers</p></td>\n";
print "  <td><p><center>$thisyear{f2a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f2a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f2b}</center></p></td>\n";
print "  <td><p><center>$lastyear{f2b}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f2c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f2c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f2d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f2d}</center></p></td>\n" if (!$nocomp);
print "</tr>";
```

```
print "<tr>";
print "<td><p>3. Number of part-time classroom teachers in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f3a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f3a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f3b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f3b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f3c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f3c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f3d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f3d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "<td><p>4. Number of instructional Aides in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f4a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f4a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f4b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f4b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f4c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f4c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f4d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f4d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td colspan=9><p>5. Average salary of all
<strong>FULL-TIME</strong> teachers in the district \$$thisyear{f5}
($year)";
print ", \$$lastyear{f5} ($lyear)\.</td>\n" if (!$nocomp);
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "<table width=\"100%\" border=1>";
print "<tr>";
print "  <td width=\"40%\"><p><strong>Other Professional Personnel and Support Staff</strong></p></td>\n";
print "  <td colspan=$four_2nocomp><p><center>Elementary</center></p></td>\n";
print "  <td colspan=$four_2nocomp><p><center>Secondary</center></p></td>\n";
print "</tr>";

print "<tr>";
print "  <td><p><em>FTE\'s rounded to the nearest tenth</em></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Male</center></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Female</center></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Male</center></p></td>\n";
print "  <td colspan=$two_nocomp><p><center>Female</center></p></td>\n";
print "</tr>";

print "<tr>";
print "  <td></td>\n";
```

```
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$year</center></p></td>\n";
print "  <td><p><center>$lyear</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>6. Number of principals in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f6a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f6a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f6b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f6b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f6c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f6c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f6d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f6d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>7. Number of assistant principals in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f7a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f7a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f7b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f7b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f7c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f7c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f7d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f7d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>8. Number of guidance couselors/directors in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f8a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f8a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f8b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f8b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f8c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f8c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f8d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f8d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>9. Number of librarians / media specialists in <strong>full-time";
print "equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f9a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f9a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f9b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f9b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f9c}</center></p></td>\n";
```

```
print "  <td><p><center>$lastyear{f9c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f9d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f9d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>10. Number of library / media support staff in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f10a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f10a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f10b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f10b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f10c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f10c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f10d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f10d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>11. Number of non-teaching Special Education professionals not included above in <strong>full-time
equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f11a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f11a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f11b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f11b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f11c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f11c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f11d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f11d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>12. Number of clerical support staff in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f12a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f12a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f12b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f12b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f12c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f12c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f12d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f12d}</center></p></td>\n" if (!$nocomp);
print "</tr>";

print "<tr>";
print "  <td><p>13. Number of other support service staff in <strong>full-time equivalents</strong></p></td>\n";
print "  <td><p><center>$thisyear{f13a}</center></p></td>\n";
print "  <td><p><center>$lastyear{f13a}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f13b}</center></p></td>\n ";
print "  <td><p><center>$lastyear{f13b}</center></p></td>\n " if (!$nocomp);
print "  <td><p><center>$thisyear{f13c}</center></p></td>\n";
print "  <td><p><center>$lastyear{f13c}</center></p></td>\n" if (!$nocomp);
print "  <td><p><center>$thisyear{f13d}</center></p></td>\n";
print "  <td><p><center>$lastyear{f13d}</center></p></td>\n" if (!$nocomp);
print "</tr>";
print "</table>";
```

```
print "<br>";
print "<hr size=3>";
print "<br>";

print "Submission Date: $thisyear{date}</p>";

if ($in{last_page} !~ m/retrievedata/)
{
print "<p><center>Please verify the data. If you wish to reenter
data you can <a href=\"$in{last_page}\">clear the fields</a> or
use the browser's Back button to return to
the form you were working with.</center></p>";
}
}

#---------------------------------------------------------------------
# No tables
#---------------------------------------------------------------------
sub no_tables {
$nocomp = $_[0];

print "<table width=\"100%\" border=0>";
print "<tr>";
print "  <td width=\"70%\"><p><strong>Teaching Personnel</strong></p></td>";
print "  <td colspan=2><p><center>Elementary</center></p></td>";
print "  <td colspan=2><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>Round all FTE's to the nearest tenth</em></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>1a. Numer of pre-school teachers in <strong>full-time equivalents</strong></td>";
print "  <td><p><center>$thisyear{f1aa}</center></p></td>";
print "  <td><p><center>$thisyear{f1ab}</center></p></td>";
print "</tr>";
print "<tr>";
print "  <td><p>1b. Numer of kindergarten teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f1ba}</center></p></td>";
print "  <td><p><center>$thisyear{f1bb}</center></p></td>";
print "</tr>";
print "<tr>";
print "<td><p>2. Numer of full-time classroom teachers</p></td>";
print "  <td><p><center>$thisyear{f2a}</center></p></td>";
print "  <td><p><center>$thisyear{f2b}</center></p></td> ";
print "  <td><p><center>$thisyear{f2c}</center></p></td>";
print "  <td><p><center>$thisyear{f2d}</center></p></td>";
print "</tr>";
```

```
print "<tr>";
print "<td><p>3. Numer of part-time classroom teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f3a}</center></p></td>";
print "  <td><p><center>$thisyear{f3b}</center></p></td>";
print "  <td><p><center>$thisyear{f3c}</center></p></td>";
print "  <td><p><center>$thisyear{f3d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>4. Numer of instructional Aides in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f4a}</center></p></td>";
print "  <td><p><center>$thisyear{f4b}</center></p></td>";
print "  <td><p><center>$thisyear{f4c}</center></p></td>";
print "  <td><p><center>$thisyear{f4d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td colspan=5><p>5. Average salary of all
<strong>FULL-TIME</strong> teachers in the district \$$in{f5}</td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "<table width=\"100%\" border=0>";
print "<tr>";
print "  <td width=\"70%\"><p><strong>Other Professional Personnel and Support Staff</strong></p></td>";
print "  <td colspan=2><p><center>Elementary</center></p></td>";
print "  <td colspan=2><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>Round all FTE\'s to the nearest tenth</em></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>6. Numer of principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f6a}</center></p></td>";
print "  <td><p><center>$thisyear{f6b}</center></p></td>";
print "  <td><p><center>$thisyear{f6c}</center></p></td>";
print "  <td><p><center>$thisyear{f6d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>7. Numer of assistant principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f7a}</center></p></td>";
print "  <td><p><center>$thisyear{f7b}</center></p></td>";
```

```
print "  <td><p><center>$thisyear{f7c}</center></p></td>";
print "  <td><p><center>$thisyear{f7d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>8. Numer of guidance couselors/directors in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f8a}</center></p></td>";
print "  <td><p><center>$thisyear{f8b}</center></p></td>";
print "  <td><p><center>$thisyear{f8c}</center></p></td>";
print "  <td><p><center>$thisyear{f8d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>9. Numer of librarians / media specialists in <strong>full-timev";
print "equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f9a}</center></p></td>";
print "  <td><p><center>$thisyear{f9b}</center></p></td>";
print "  <td><p><center>$thisyear{f9c}</center></p></td>";
print "  <td><p><center>$thisyear{f9d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>10. Numer of library / media support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f10a}</center></p></td>";
print "  <td><p><center>$thisyear{f10b}</center></p></td>";
print "  <td><p><center>$thisyear{f10c}</center></p></td>";
print "  <td><p><center>$thisyear{f10d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>11. Numer of non-teaching Special Education professionals not included above in <strong>full-time
equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f11a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td>";
print "  <td><p><center>$thisyear{f11c}</center></p></td>";
print "  <td><p><center>$thisyear{f11d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>12. Numer of clerical support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f12a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td>";
print "  <td><p><center>$thisyear{f12c}</center></p></td>";
print "  <td><p><center>$thisyear{f12d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>13. Numer of other support service staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f13a}</center></p></td>";
print "  <td><p><center>$thisyear{f13b}</center></p></td>";
print "  <td><p><center>$thisyear{f13c}</center></p></td>";
print "  <td><p><center>$thisyear{f13d}</center></p></td>";
print "</tr>";
print "</table>";
```

```
print "<br>";
print "<hr size=3>";
print "<br>";

print "Submission Date: $thisyear{date}</p>";

if ($in{last_page} !~ m/retrievedata/)
{
print "<p><center>Please verify the data. If you wish to reenter
data you can <a href=\"$in{last_page}\">clear the fields</a> or
use the browser's Back button to return to
the form you were working with.</center></p>";
}
}
}

#---------------------------------------------------------------------
# File data: store the data in a DBM file.
# This module receives a parameter from the main program.
# This parameter may be either the default value to be stored for
# empty fields, or a special code to signal an update of only a few
# values.
#---------------------------------------------------------------------
sub file_data {

local($separator, $error_value);
$separator=":"; # Separator for fieldnames, not URL paths!
$error_value = "Init value--if you see this, contact your sysadmin!";
$non_numeric_flag = 0; # Initialization

# open DBM file
# Any changes to associative array filehandle automatically get written to disk
$dbmfile = "/www/cgi-bin/edu/pub/data";
dbmopen(%DATA, $dbmfile, 0644);


$in{date} = localtime;  # Submission date. This can be changed to be
                # inputted in the HTML form.

# Check data for non-numeric characters
while ( ($fieldname, $value) = each(%in) ) {
   if ($value eq "") {              # If field is left blank.
      $in{$fieldname} = $_[0];       # Set the value to passed parameter.
      } # end if
      # \D stands for non-numeric characters.
   elsif (($value =~ m!\D!) && (($fieldname ne "district") &&
      ($fieldname ne "date") && ($fieldname ne "super") &&
      ($fieldname ne "last_page") && ($fieldname ne "update"))) {
      $non_numeric_flag = 1;
      $error_value = "\'$value\'";
   } # end if-elsif
} # end while
```

```
#transfer  data from associative array %in to filehandle %DATA
unless ($non_numeric_flag == 1) {
   while ( ($fieldname, $value) = each(%in) ) {
     unless ($value == -1) {   # A negative number signals an update,
                         # which implies not filing any blank fields.
                         # The -1 was chosen as an arbitrary numeric
                         # signal--any other special number could be used.
       # Fieldnames are something like 1996:Manchester:f2b
       $fieldname = $year . $separator .  $in{district} . $separator . $fieldname;
       $DATA{$fieldname} = $value;
     } # end unless
   } # end while
} else {
       print "<h1>Error</h1><p>Your entry \'$error_value\' is not valid.\n";
       print "Only numeric data is acceptable. In other words, the form ";
       print "will accept only numbers and decimals. If commas, letters, ";
       print "and/or any other characters that are not numbers (or the ";
       print "decimal point) are present in even a single field, the data ";
       print "will all be rejected. In this specific case, ";
       print "you submitted \'$error_value\', which is why your data is ";
       print "being rejected.</p>\n";
} # end unless-else

dbmclose(DATA);
} # end sub

#---------------------------------------------------------------------
#Get date
#
#Get's date using "localtime". This date can then be used to write
#the data files.
#---------------------------------------------------------------------
sub get_date {
       $date = localtime;
       $date =~ s!  ! !g;      # Eliminate double spaces, which can wreak havoc at the beginning of the month.
       local (@date_fields);

       # $date is now something like "Mon Jul 15 15:15:01 1996"
       # We only want the year, therefore we split up the string
       @date_fields = split(/\s/,$date);

       # The year is the fifth element. Since array starts at 0,
       # $date_fields[4] is equal to the year.
       $year = $date_fields[4];
       $lyear = $year;
       --$lyear;
}


#---------------------------------------------------------------------
# Load data
#
# Puts the year's data into %thisyear
# Puts last year's data into %lastyear
```

```
#
# Assumes filed data is valid.
#--------------------------------------------------------------------
sub load_data {

local($separator, $maxvalue);
$separator=":";
$maxvalue=0.25; # Set alert threshold to a difference of 25%.

#open DBM file
$dbmfile = "pub/data";
dbmopen(%DATA, $dbmfile, 0644);

#load %DATA into %thisyear and %lastyear
print "Year: $year<br> District: $district <br>\n";
print "<hr size=3>";
while ( ($fieldname, $value) = each(%DATA) ) {
   ($y, $d, $f) = split(/$separator/,$fieldname);
   if (($y == $year) && ($d eq $district)) {
            $thisyear{$f} = $value;
   } elsif (($y == $lyear) && ($d eq $district)) {
            $lastyear{$f} = $value;
     } #end elsif
} #end while
dbmclose(DATA);

#Check values for large discrepancies (determined by $maxvalue)
while ( ($f, $value) = each(%thisyear) ) {
      unless ( $lastyear{$f} <= 0) {
            local($diff, $alert, $endalert);
            $diff = ($value - $lastyear{$f}) / $lastyear{$f};
            if ($diff >= $maxvalue) {
                  $alert = "<font color=\"FF0000\">";
                  $endalert = "</font>*";
            } else {
                  $alert = "";
                  $endalert = "";
            } #end if-else
      $thisyear{$f} = $alert . $thisyear{$f} . $endalert;
      } # end unless
} #end while
} #end sub

#--------------------------------------------------------------------
# Validate superintendent
#
# Checks superintendent against a file of valid names
#--------------------------------------------------------------------
sub validate_superintendent {

local($super, $district);
$super=$in{super};
$district=$in{district};
```

```
$assoc_file = 'pub/associations';

#initialize $super_validity
$super_validity = 0;

dbmopen(%SUPER_OF, $assoc_file, 0644);
if ($super eq $SUPER_OF{$district}) {
   $super_validity = 1;
} # end if
dbmclose(SUPER_OF);

} # end sub

#---------------------------------------------------------------------
# check_password
#
# This subroutine is not actually implemented. However, if password-
# checking is desirable, one way of implementing it would be
# something like the (commented out) lines below.
#---------------------------------------------------------------------

#sub check_password {
#[define password file]
#[open password file and check password-user matches]
#[set a password bit to 1 or 0]
#[close passoword file]
#} end sub
```

```
#!/usr/local/bin/perl

#-----------------------------------------------------------------
# Personnel: main script
#-----------------------------------------------------------------

# Use sub library
do 'nh.lib';

# Read CGI parameters with standard PERL library
require 'cgi-lib.pl';
&ReadParse();

# Get the Browser type:
$browser = $ENV{HTTP_USER_AGENT};
$district = $in{district};
$super = $in{super};

# Print MIME-type header so output is recognizable as HTML by the browser
print "Content-type:text/html\n\n";

# Validate superintendent
&validate_superintendent;

# If superintendent is valid, go ahead and file and display the data
unless ($super_validity != 1) {
   &print_header;
   &get_date;
   &file_data;
   &load_data($year);
   &whatbrowser;            # Determines appropriate way to display data
} else {
      print "<p><h2>The superintendent's name you submitted is not ";
      print "associated with $district.</h2></p>\n";
      print "<p>Please <a href=\"$in{last_page}\">";
      print "return</a>.</p>\n";
}
```

```
#-----------------------------------------------------------------
#Print header
#-----------------------------------------------------------------
sub print_header {

print "<p><H1>Thank you, district of $district </h1></p>";
print "<p>You have submitted the following data from $ENV{REMOTE_HOST}.<br>";
print "You are using a \"$browser\" browser.</p>\n";
print "<p><hr size=3></p>";

}

#-----------------------------------------------------------------
#Determine browser
#-----------------------------------------------------------------
sub whatbrowser {

#set scratch variable equal to browser type
$_ = $browser;

#scan scratch variable for HTML info type
if (/Mozilla\/[2-3]/) {
	&with_tables;
} elsif (/Mozilla\/1\.1/) {
	&with_tables;
} elsif (/MSIE [2-]/) {
	&with_tables;
} elsif (/NCSA Mosaic\/[1-2]/) {
	&with_tables;
} elsif (/NCSA Mosaic\/[3-]/) {
	&with_tables;
} elsif (/Lynx/) {
	&no_tables;
} elsif (/Mozilla\/1\.0/) {
	&no_tables;
} else { # Table support assumed if browser is not recognizable.
	&with_tables;
}


#-----------------------------------------------------------------
# With tables
#-----------------------------------------------------------------
sub with_tables {

print "<table width=\"100%\" border=1>";
print "<tr>";
print "  <td width=\"40%\"><p><strong>Teaching Personnel</strong></p></td>";
print "  <td colspan=4><p><center>Elementary</center></p></td>";
print "  <td colspan=4><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
```

```
print "  <td><p><em>FTE's rounded to the nearest tenth</em></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>1a. Number of pre-school teachers in <strong>full-time equivalents</strong></td>";
print "  <td><p><center>$thisyear{f1aa}</center></p></td>";
print "  <td><p><center>$lastyear{f1aa}</center></p></td>";
print "  <td><p><center>$thisyear{f1ab}</center></p></td>";
print "  <td><p><center>$lastyear{f1ab}</center></p></td>";

print "</tr>";
print "<tr>";
print "  <td><p>1b. Number of kindergarten teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f1ba}</center></p></td>";
print "  <td><p><center>$lastyear{f1ba}</center></p></td>";
print "  <td><p><center>$thisyear{f1bb}</center></p></td>";
print "  <td><p><center>$lastyear{f1bb}</center></p></td>";
print "</tr>";
print "<tr>";
print "<td><p>2. Number of full-time classroom teachers</p></td>";
print "  <td><p><center>$thisyear{f2a}</center></p></td>";
print "  <td><p><center>$lastyear{f2a}</center></p></td>";
print "  <td><p><center>$thisyear{f2b}</center></p></td> ";
print "  <td><p><center>$lastyear{f2b}</center></p></td> ";
print "  <td><p><center>$thisyear{f2c}</center></p></td>";
print "  <td><p><center>$lastyear{f2c}</center></p></td>";
print "  <td><p><center>$thisyear{f2d}</center></p></td>";
print "  <td><p><center>$lastyear{f2d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>3. Number of part-time classroom teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f3a}</center></p></td>";
print "  <td><p><center>$lastyear{f3a}</center></p></td>";
print "  <td><p><center>$thisyear{f3b}</center></p></td> ";
print "  <td><p><center>$lastyear{f3b}</center></p></td> ";
print "  <td><p><center>$thisyear{f3c}</center></p></td>";
print "  <td><p><center>$lastyear{f3c}</center></p></td>";
```

```
print "  <td><p><center>$thisyear{f3d}</center></p></td>";
print "  <td><p><center>$lastyear{f3d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>4. Number of instructional Aides in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f4a}</center></p></td>";
print "  <td><p><center>$lastyear{f4a}</center></p></td>";
print "  <td><p><center>$thisyear{f4b}</center></p></td> ";
print "  <td><p><center>$lastyear{f4b}</center></p></td> ";
print "  <td><p><center>$thisyear{f4c}</center></p></td>";
print "  <td><p><center>$lastyear{f4c}</center></p></td>";
print "  <td><p><center>$thisyear{f4d}</center></p></td>";
print "  <td><p><center>$lastyear{f4d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td colspan=9><p>5. Average salary of all
<strong>FULL-TIME</strong> teachers in the district \$$thisyear{f5}
($year), \$$lastyear{f5} ($lyear)\.</td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "<table width=\"100%\" border=1>";
print "<tr>";
print "  <td width=\"40%\"><p><strong>Other Professional Personnel and Support Staff</strong></p></td>";
print "  <td colspan=4><p><center>Elementary</center></p></td>";
print "  <td colspan=4><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>FTE\'s rounded to the nearest tenth</em></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "</tr>";
```

```
print "<tr>";
print "  <td><p>6. Number of principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f6a}</center></p></td>";
print "  <td><p><center>$lastyear{f6a}</center></p></td>";
print "  <td><p><center>$thisyear{f6b}</center></p></td> ";
print "  <td><p><center>$lastyear{f6b}</center></p></td> ";
print "  <td><p><center>$thisyear{f6c}</center></p></td>";
print "  <td><p><center>$lastyear{f6c}</center></p></td>";
print "  <td><p><center>$thisyear{f6d}</center></p></td>";
print "  <td><p><center>$lastyear{f6d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>7. Number of assistant principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f7a}</center></p></td>";
print "  <td><p><center>$lastyear{f7a}</center></p></td>";
print "  <td><p><center>$thisyear{f7b}</center></p></td> ";
print "  <td><p><center>$lastyear{f7b}</center></p></td> ";
print "  <td><p><center>$thisyear{f7c}</center></p></td>";
print "  <td><p><center>$lastyear{f7c}</center></p></td>";
print "  <td><p><center>$thisyear{f7d}</center></p></td>";
print "  <td><p><center>$lastyear{f7d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>8. Number of guidance couselors/directors in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f8a}</center></p></td>";
print "  <td><p><center>$lastyear{f8a}</center></p></td>";
print "  <td><p><center>$thisyear{f8b}</center></p></td> ";
print "  <td><p><center>$lastyear{f8b}</center></p></td> ";
print "  <td><p><center>$thisyear{f8c}</center></p></td>";
print "  <td><p><center>$lastyear{f8c}</center></p></td>";
print "  <td><p><center>$thisyear{f8d}</center></p></td>";
print "  <td><p><center>$lastyear{f8d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>9. Number of librarians / media specialists in <strong>full-time";
print "equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f9a}</center></p></td>";
print "  <td><p><center>$lastyear{f9a}</center></p></td>";
print "  <td><p><center>$thisyear{f9b}</center></p></td> ";
print "  <td><p><center>$lastyear{f9b}</center></p></td> ";
print "  <td><p><center>$thisyear{f9c}</center></p></td>";
print "  <td><p><center>$lastyear{f9c}</center></p></td>";
print "  <td><p><center>$thisyear{f9d}</center></p></td>";
print "  <td><p><center>$lastyear{f9d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>10. Number of library / media support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f10a}</center></p></td>";
print "  <td><p><center>$lastyear{f10a}</center></p></td>";
print "  <td><p><center>$thisyear{f10b}</center></p></td> ";
```

```
print "  <td><p><center>$lastyear{f10b}</center></p></td> ";
print "  <td><p><center>$thisyear{f10c}</center></p></td>";
print "  <td><p><center>$lastyear{f10c}</center></p></td>";
print "  <td><p><center>$thisyear{f10d}</center></p></td>";
print "  <td><p><center>$lastyear{f10d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>11. Number of non-teaching Special Education professionals not included above in <strong>full-time
equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f11a}</center></p></td>";
print "  <td><p><center>$lastyear{f11a}</center></p></td>";
print "  <td><p><center>$thisyear{f11b}</center></p></td> ";
print "  <td><p><center>$lastyear{f11b}</center></p></td> ";
print "  <td><p><center>$thisyear{f11c}</center></p></td>";
print "  <td><p><center>$lastyear{f11c}</center></p></td>";
print "  <td><p><center>$thisyear{f11d}</center></p></td>";
print "  <td><p><center>$lastyear{f11d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>12. Number of clerical support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f12a}</center></p></td>";
print "  <td><p><center>$lastyear{f12a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td> ";
print "  <td><p><center>$lastyear{f12b}</center></p></td> ";
print "  <td><p><center>$thisyear{f12c}</center></p></td>";
print "  <td><p><center>$lastyear{f12c}</center></p></td>";
print "  <td><p><center>$thisyear{f12d}</center></p></td>";
print "  <td><p><center>$lastyear{f12d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>13. Number of other support service staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f13a}</center></p></td>";
print "  <td><p><center>$lastyear{f13a}</center></p></td>";
print "  <td><p><center>$thisyear{f13b}</center></p></td> ";
print "  <td><p><center>$lastyear{f13b}</center></p></td> ";
print "  <td><p><center>$thisyear{f13c}</center></p></td>";
print "  <td><p><center>$lastyear{f13c}</center></p></td>";
print "  <td><p><center>$thisyear{f13d}</center></p></td>";
print "  <td><p><center>$lastyear{f13d}</center></p></td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "Submission Date: $thisyear{date}</p>";

print "<p><center>Please verify the data; otherwise <a
href=\"$in{last_page}\">return</a> to change it.</center></p>";
}
```

```
#-------------------------------------------------------------------
# No tables
#-------------------------------------------------------------------
sub no_tables {
print "<table width=\"100%\" border=0>";
print "<tr>";
print "  <td width=\"70%\"><p><strong>Teaching Personnel</strong></p></td>";
print "  <td colspan=2><p><center>Elementary</center></p></td>";
print "  <td colspan=2><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>Round all FTE's to the nearest tenth</em></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>1a. Number of pre-school teachers in <strong>full-time equivalents</strong></td>";
print "  <td><p><center>$thisyear{f1aa}</center></p></td>";
print "  <td><p><center>$thisyear{f1ab}</center></p></td>";
print "</tr>";
print "<tr>";
print "  <td><p>1b. Number of kindergarten teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f1ba}</center></p></td>";
print "  <td><p><center>$thisyear{f1bb}</center></p></td>";
print "</tr>";
print "<tr>";
print "<td><p>2. Number of full-time classroom teachers</p></td>";
print "  <td><p><center>$thisyear{f2a}</center></p></td>";
print "  <td><p><center>$thisyear{f2b}</center></p></td> ";
print "  <td><p><center>$thisyear{f2c}</center></p></td>";
print "  <td><p><center>$thisyear{f2d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>3. Number of part-time classroom teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f3a}</center></p></td>";
print "  <td><p><center>$thisyear{f3b}</center></p></td>";
print "  <td><p><center>$thisyear{f3c}</center></p></td>";
print "  <td><p><center>$thisyear{f3d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>4. Number of instructional Aides in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f4a}</center></p></td>";
print "  <td><p><center>$thisyear{f4b}</center></p></td>";
print "  <td><p><center>$thisyear{f4c}</center></p></td>";
print "  <td><p><center>$thisyear{f4d}</center></p></td>";
print "</tr>";
```

```
print "<tr>";
print "  <td colspan=5><p>5. Average salary of all
<strong>FULL-TIME</strong> teachers in the district \$$in{f5}</td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "<table width=\"100%\" border=0>";
print "<tr>";
print "  <td width=\"70%\"><p><strong>Other Professional Personnel and Support Staff</strong></p></td>";
print "  <td colspan=2><p><center>Elementary</center></p></td>";
print "  <td colspan=2><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>Round all FTE\'s to the nearest tenth</em></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>6. Number of principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f6a}</center></p></td>";
print "  <td><p><center>$thisyear{f6b}</center></p></td>";
print "  <td><p><center>$thisyear{f6c}</center></p></td>";
print "  <td><p><center>$thisyear{f6d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>7. Number of assistant principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f7a}</center></p></td>";
print "  <td><p><center>$thisyear{f7b}</center></p></td>";
print "  <td><p><center>$thisyear{f7c}</center></p></td>";
print "  <td><p><center>$thisyear{f7d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>8. Number of guidance couselors/directors in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f8a}</center></p></td>";
print "  <td><p><center>$thisyear{f8b}</center></p></td>";
print "  <td><p><center>$thisyear{f8c}</center></p></td>";
print "  <td><p><center>$thisyear{f8d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>9. Number of librarians / media specialists in <strong>full-timev";
print "equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f9a}</center></p></td>";
print "  <td><p><center>$thisyear{f9b}</center></p></td>";
```

```
print "  <td><p><center>$thisyear{f9c}</center></p></td>";
print "  <td><p><center>$thisyear{f9d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>10. Number of library / media support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f10a}</center></p></td>";
print "  <td><p><center>$thisyear{f10b}</center></p></td>";
print "  <td><p><center>$thisyear{f10c}</center></p></td>";
print "  <td><p><center>$thisyear{f10d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>11. Number of non-teaching Special Education professionals not included above in <strong>full-time
equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f11a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td>";
print "  <td><p><center>$thisyear{f11c}</center></p></td>";
print "  <td><p><center>$thisyear{f11d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>12. Number of clerical support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f12a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td>";
print "  <td><p><center>$thisyear{f12c}</center></p></td>";
print "  <td><p><center>$thisyear{f12d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>13. Number of other support service staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f13a}</center></p></td>";
print "  <td><p><center>$thisyear{f13b}</center></p></td>";
print "  <td><p><center>$thisyear{f13c}</center></p></td>";
print "  <td><p><center>$thisyear{f13d}</center></p></td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "Submission Date: $thisyear{date}</p>";

print "<p><center>Please verify the data; otherwise <a
href=\"$in{last_page}\">return</a> to change it.</center></p>";

}
}

#---------------------------------------------------------------------
# File data: store the data in a DBM file.
#---------------------------------------------------------------------
sub file_data {
```

```
local($separator, $error_value);
$separator=":";

# open DBM file
# Any changes to associative array filehandle automatically get written to disk
$dbmfile = "pub\data";
dbmopen(%DATA, $dbmfile, 0644);

# Check data for non-numeric characters
while ( ($fieldname, $value) = each(%in) ) {
        # \D stands for non-numeric characters.
    if ((($value =~ m!\D!) || ($value eq "")) && (($fieldname ne
    "district") && ($fieldname ne "date") && ($fieldname ne "super") &&
    ($fieldname ne "last_page"))) {
    $non_numeric_flag = 1;
    if ($value eq "") {
     $error_value = "An empty field";
    } else {
     $error_value = "\'$value\'";
    } # end if-else
    print "<b>Error</b> on $fieldname: $error_value is not a valid entry.<br>\n";
   } # end if
} # end while

#transfer  data from associative array %in to filehandle %DATA
unless ($non_numeric_flag = 1) {
    while ( ($fieldname, $value) = each(%in) ) {
        # Fieldnames are something like 1996:Manchester:f2b
        $fieldname = $year . $separator .  $in{district} . $separator . $fieldname;
        $DATA{$fieldname} = $value;
} # end while
} # end unless

dbmclose(DATA);
} # end sub

#---------------------------------------------------------------------
#Get date
#
#Get's date using "localtime". This date can then be used to write
#the data files.
#---------------------------------------------------------------------
sub get_date {
      $date = localtime;
      local (@date_fields);

      # $date is now something like "Mon Jul 15 15:15:01 1996"
      # We only want the year, therefore we split up the string
      @date_fields = split(/\s/,$date);

      # The year is the fifth element. Since array starts at 0,
      # $date_fields[4] is equal to the year.
      $year = $date_fields[4];
```

```
	$lyear = $year;
	--$lyear;
}


#---------------------------------------------------------------------
# Load data
#
# Puts the year's data into %thisyear
# Puts last year's data into %lastyear
#---------------------------------------------------------------------
sub load_data {

require SDBM_File;
require TieHash;

local($separator, $maxvalue);
$separator=":";
$maxvalue=0.25;

#open DBM file
$dbmfile = "pub\data";
dbmopen(%DATA, $dbmfile, 0644);

#load %DATA into %thisyear and %lastyear
print "Year: $year<br> District: $district <br>\n";
print "<hr size=3>";
while ( ($fieldname, $value) = each(%DATA) ) {
   ($y, $d, $f) = split(/$separator/,$fieldname);
   if (($y == $year) && ($d eq $district)) {
		$thisyear{$f} = $value;
   } elsif (($y == $lyear) && ($d eq $district)) {
		$lastyear{$f} = $value;
     } #end elsif
} #end while
dbmclose(DATA);

#Check values for large discrepancies
while ( ($f, $value) = each(%thisyear) ) {
	unless ( $lastyear{$f} <= 0) {
		local($diff, $alert, $endalert);
		$diff = ($value - $lastyear{$f}) / $lastyear{$f};
		if ($diff >= $maxvalue) {
			$alert = "<font color=\"FF0000\">";
			$endalert = "</font>*";
		} else {
			$alert = "";
			$endalert = "";
		} #end if-else
	$thisyear{$f} = $alert . $thisyear{$f} . $endalert;
	} # end unless
} #end while
} #end sub
```

```
#---------------------------------------------------------------------
# Validate superintendent
#
# Checks superintendent against a file of valid names
#---------------------------------------------------------------------
sub validate_superintendent {

# The following two lines are necessary for script to work under PC Perl 5
require SDBM_File;
require TieHash;

$assoc_file = '\net\www\cgi-bin\edu\pub\associations';

#initialize $super_validity
$super_validity = 0;

dbmopen(%SUPER_OF, $assoc_file, 0644);

# Below lines (now commented out) used for debugging purposes only
#print "Super = $super<br>\n";
#print "District = $district<br>\n";

if ($super eq $SUPER_OF{$district}) {
   $super_validity = 1;
} # end if
dbmclose(SUPER_OF);

} # end sub
```

```
#!/usr/local/bin/perl

#-----------------------------------------------------------------
# Personnel: main script
#-----------------------------------------------------------------

# Use sub library
do 'nh.lib';

# Read CGI parameters with standard PERL library
require 'cgi-lib.pl';
&ReadParse();

# Get the Browser type:
$browser = $ENV{HTTP_USER_AGENT};
$district = $in{district};

# Specify whether user is inputting or updating the data.
# If for some reason the radio button input does not have a value of
# "replace" or "update", the script will by default only update the data.
# This measure is to prevent script malfunctions from zeroing out
# previous data.
if ($in{update} eq "replace") {
      $update_bit = 0;
} else {
      $update_bit = -1;
}

# Print MIME-type header so output is recognizable as HTML by the browser
print "Content-type:text/html\n\n";

# Password, if implemented, could be checked for here
# &check_password; (or whatever you want to call the subroutine in nh.lib)

# Validate superintendent
&validate_superintendent;

# If superintendent is valid, go ahead and file and display the data
unless ($super_validity != 1) {
   &print_header;
   &get_date;
   &file_data($update_bit);
   unless ($non_numeric_flag == 1) {
      &load_data($year);
      &whatbrowser;          # Determines appropriate way to display data
    } # end unless
} else {
      print "<p><h2>The superintendent's name you submitted is not ";
      print "associated with $district.</h2></p>\n";
      print "<p>Please <a href=\"$in{last_page}\">";
      print "return</a>.</p>\n";
}
```

```
#---------------------------------------------------------------------
#Print header
#---------------------------------------------------------------------
sub print_header {

print "<p><H1>Thank you, district of $district </h1></p>";
print "<p>You have submitted the following data from $ENV{REMOTE_HOST}.<br>";
print "You are using a \"$browser\" browser.</p>\n";
print "<p><hr size=3></p>";

}

#---------------------------------------------------------------------
#Determine browser
#---------------------------------------------------------------------
sub whatbrowser {

#set scratch variable equal to browser type
$_ = $browser;

#scan scratch variable for HTML info type
if (/Mozilla\/[2-3]/) {
	&with_tables;
} elsif (/Mozilla\/1\.1/) {
	&with_tables;
} elsif (/MSIE [2-]/) {
	&with_tables;
} elsif (/NCSA Mosaic\/[1-2]/) {
	&with_tables;
} elsif (/NCSA Mosaic\/[3-]/) {
	&with_tables;
} elsif (/Lynx/) {
	&no_tables;
} elsif (/Mozilla\/1\.0/) {
	&no_tables;
} else { # Table support assumed if browser is not recognizable.
	&with_tables;
}


#---------------------------------------------------------------------
# With tables
#---------------------------------------------------------------------
sub with_tables {

print "<table width=\"100%\" border=1>";
print "<tr>";
print "  <td width=\"40%\"><p><strong>Teaching Personnel</strong></p></td>";
print "  <td colspan=4><p><center>Elementary</center></p></td>";
print "  <td colspan=4><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
```

```
print "  <td><p><em>FTE's rounded to the nearest tenth</em></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>1a. Numer of pre-school teachers in <strong>full-time equivalents</strong></td>";
print "  <td><p><center>$thisyear{f1aa}</center></p></td>";
print "  <td><p><center>$lastyear{f1aa}</center></p></td>";
print "  <td><p><center>$thisyear{f1ab}</center></p></td>";
print "  <td><p><center>$lastyear{f1ab}</center></p></td>";

print "</tr>";
print "<tr>";
print "  <td><p>1b. Numer of kindergarten teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f1ba}</center></p></td>";
print "  <td><p><center>$lastyear{f1ba}</center></p></td>";
print "  <td><p><center>$thisyear{f1bb}</center></p></td>";
print "  <td><p><center>$lastyear{f1bb}</center></p></td>";
print "</tr>";
print "<tr>";
print "<td><p>2. Numer of full-time classroom teachers</p></td>";
print "  <td><p><center>$thisyear{f2a}</center></p></td>";
print "  <td><p><center>$lastyear{f2a}</center></p></td>";
print "  <td><p><center>$thisyear{f2b}</center></p></td> ";
print "  <td><p><center>$lastyear{f2b}</center></p></td> ";
print "  <td><p><center>$thisyear{f2c}</center></p></td>";
print "  <td><p><center>$lastyear{f2c}</center></p></td>";
print "  <td><p><center>$thisyear{f2d}</center></p></td>";
print "  <td><p><center>$lastyear{f2d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>3. Numer of part-time classroom teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f3a}</center></p></td>";
print "  <td><p><center>$lastyear{f3a}</center></p></td>";
print "  <td><p><center>$thisyear{f3b}</center></p></td> ";
print "  <td><p><center>$lastyear{f3b}</center></p></td> ";
print "  <td><p><center>$thisyear{f3c}</center></p></td>";
print "  <td><p><center>$lastyear{f3c}</center></p></td>";
```

```
print "  <td><p><center>$thisyear{f3d}</center></p></td>";
print "  <td><p><center>$lastyear{f3d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>4. Numer of instructional Aides in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f4a}</center></p></td>";
print "  <td><p><center>$lastyear{f4a}</center></p></td>";
print "  <td><p><center>$thisyear{f4b}</center></p></td> ";
print "  <td><p><center>$lastyear{f4b}</center></p></td> ";
print "  <td><p><center>$thisyear{f4c}</center></p></td>";
print "  <td><p><center>$lastyear{f4c}</center></p></td>";
print "  <td><p><center>$thisyear{f4d}</center></p></td>";
print "  <td><p><center>$lastyear{f4d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td colspan=9><p>5. Average salary of all
<strong>FULL-TIME</strong> teachers in the district \$$thisyear{f5}
($year), \$$lastyear{f5} ($lyear)\.</td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "<table width=\"100%\" border=1>";
print "<tr>";
print "  <td width=\"40%\"><p><strong>Other Professional Personnel and Support Staff</strong></p></td>";
print "  <td colspan=4><p><center>Elementary</center></p></td>";
print "  <td colspan=4><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>FTE\'s rounded to the nearest tenth</em></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "  <td colspan=2><p><center>Male</center></p></td>";
print "  <td colspan=2><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "  <td><p><center>$year</center></p></td>";
print "  <td><p><center>$lyear</center></p></td>";
print "</tr>";
```

```
print "<tr>";
print "  <td><p>6. Numer of principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f6a}</center></p></td>";
print "  <td><p><center>$lastyear{f6a}</center></p></td>";
print "  <td><p><center>$thisyear{f6b}</center></p></td> ";
print "  <td><p><center>$lastyear{f6b}</center></p></td> ";
print "  <td><p><center>$thisyear{f6c}</center></p></td>";
print "  <td><p><center>$lastyear{f6c}</center></p></td>";
print "  <td><p><center>$thisyear{f6d}</center></p></td>";
print "  <td><p><center>$lastyear{f6d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>7. Numer of assistant principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f7a}</center></p></td>";
print "  <td><p><center>$lastyear{f7a}</center></p></td>";
print "  <td><p><center>$thisyear{f7b}</center></p></td> ";
print "  <td><p><center>$lastyear{f7b}</center></p></td> ";
print "  <td><p><center>$thisyear{f7c}</center></p></td>";
print "  <td><p><center>$lastyear{f7c}</center></p></td>";
print "  <td><p><center>$thisyear{f7d}</center></p></td>";
print "  <td><p><center>$lastyear{f7d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>8. Numer of guidance couselors/directors in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f8a}</center></p></td>";
print "  <td><p><center>$lastyear{f8a}</center></p></td>";
print "  <td><p><center>$thisyear{f8b}</center></p></td> ";
print "  <td><p><center>$lastyear{f8b}</center></p></td> ";
print "  <td><p><center>$thisyear{f8c}</center></p></td>";
print "  <td><p><center>$lastyear{f8c}</center></p></td>";
print "  <td><p><center>$thisyear{f8d}</center></p></td>";
print "  <td><p><center>$lastyear{f8d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>9. Numer of librarians / media specialists in <strong>full-time";
print "equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f9a}</center></p></td>";
print "  <td><p><center>$lastyear{f9a}</center></p></td>";
print "  <td><p><center>$thisyear{f9b}</center></p></td> ";
print "  <td><p><center>$lastyear{f9b}</center></p></td> ";
print "  <td><p><center>$thisyear{f9c}</center></p></td>";
print "  <td><p><center>$lastyear{f9c}</center></p></td>";
print "  <td><p><center>$thisyear{f9d}</center></p></td>";
print "  <td><p><center>$lastyear{f9d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>10. Numer of library / media support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f10a}</center></p></td>";
print "  <td><p><center>$lastyear{f10a}</center></p></td>";
print "  <td><p><center>$thisyear{f10b}</center></p></td> ";
```

```
print "  <td><p><center>$lastyear{f10b}</center></p></td> ";
print "  <td><p><center>$thisyear{f10c}</center></p></td>";
print "  <td><p><center>$lastyear{f10c}</center></p></td>";
print "  <td><p><center>$thisyear{f10d}</center></p></td>";
print "  <td><p><center>$lastyear{f10d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>11. Numer of non-teaching Special Education professionals not included above in <strong>full-time
equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f11a}</center></p></td>";
print "  <td><p><center>$lastyear{f11a}</center></p></td>";
print "  <td><p><center>$thisyear{f11b}</center></p></td> ";
print "  <td><p><center>$lastyear{f11b}</center></p></td> ";
print "  <td><p><center>$thisyear{f11c}</center></p></td>";
print "  <td><p><center>$lastyear{f11c}</center></p></td>";
print "  <td><p><center>$thisyear{f11d}</center></p></td>";
print "  <td><p><center>$lastyear{f11d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>12. Numer of clerical support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f12a}</center></p></td>";
print "  <td><p><center>$lastyear{f12a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td> ";
print "  <td><p><center>$lastyear{f12b}</center></p></td> ";
print "  <td><p><center>$thisyear{f12c}</center></p></td>";
print "  <td><p><center>$lastyear{f12c}</center></p></td>";
print "  <td><p><center>$thisyear{f12d}</center></p></td>";
print "  <td><p><center>$lastyear{f12d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>13. Numer of other support service staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f13a}</center></p></td>";
print "  <td><p><center>$lastyear{f13a}</center></p></td>";
print "  <td><p><center>$thisyear{f13b}</center></p></td> ";
print "  <td><p><center>$lastyear{f13b}</center></p></td> ";
print "  <td><p><center>$thisyear{f13c}</center></p></td>";
print "  <td><p><center>$lastyear{f13c}</center></p></td>";
print "  <td><p><center>$thisyear{f13d}</center></p></td>";
print "  <td><p><center>$lastyear{f13d}</center></p></td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "Submission Date: $thisyear{date}</p>";

print "<p><center>Please verify the data; otherwise <a
href=\"$in{last_page}\">return</a> to change it.</center></p>";
}
```

```
#-------------------------------------------------------------------
# No tables
#-------------------------------------------------------------------
sub no_tables {
print "<table width=\"100%\" border=0>";
print "<tr>";
print "  <td width=\"70%\"><p><strong>Teaching Personnel</strong></p></td>";
print "  <td colspan=2><p><center>Elementary</center></p></td>";
print "  <td colspan=2><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>Round all FTE's to the nearest tenth</em></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>1a. Numer of pre-school teachers in <strong>full-time equivalents</strong></td>";
print "  <td><p><center>$thisyear{f1aa}</center></p></td>";
print "  <td><p><center>$thisyear{f1ab}</center></p></td>";
print "</tr>";
print "<tr>";
print "  <td><p>1b. Numer of kindergarten teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f1ba}</center></p></td>";
print "  <td><p><center>$thisyear{f1bb}</center></p></td>";
print "</tr>";
print "<tr>";
print "<td><p>2. Numer of full-time classroom teachers</p></td>";
print "  <td><p><center>$thisyear{f2a}</center></p></td>";
print "  <td><p><center>$thisyear{f2b}</center></p></td> ";
print "  <td><p><center>$thisyear{f2c}</center></p></td>";
print "  <td><p><center>$thisyear{f2d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>3. Numer of part-time classroom teachers in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f3a}</center></p></td>";
print "  <td><p><center>$thisyear{f3b}</center></p></td>";
print "  <td><p><center>$thisyear{f3c}</center></p></td>";
print "  <td><p><center>$thisyear{f3d}</center></p></td>";
print "</tr>";

print "<tr>";
print "<td><p>4. Numer of instructional Aides in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f4a}</center></p></td>";
print "  <td><p><center>$thisyear{f4b}</center></p></td>";
print "  <td><p><center>$thisyear{f4c}</center></p></td>";
print "  <td><p><center>$thisyear{f4d}</center></p></td>";
print "</tr>";
```

```
print "<tr>";
print "  <td colspan=5><p>5. Average salary of all
<strong>FULL-TIME</strong> teachers in the district \$$in{f5}</td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "<table width=\"100%\" border=0>";
print "<tr>";
print "  <td width=\"70%\"><p><strong>Other Professional Personnel and Support Staff</strong></p></td>";
print "  <td colspan=2><p><center>Elementary</center></p></td>";
print "  <td colspan=2><p><center>Secondary</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p><em>Round all FTE\'s to the nearest tenth</em></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "  <td><p><center>Male</center></p></td>";
print "  <td><p><center>Female</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>6. Numer of principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f6a}</center></p></td>";
print "  <td><p><center>$thisyear{f6b}</center></p></td>";
print "  <td><p><center>$thisyear{f6c}</center></p></td>";
print "  <td><p><center>$thisyear{f6d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>7. Numer of assistant principals in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f7a}</center></p></td>";
print "  <td><p><center>$thisyear{f7b}</center></p></td>";
print "  <td><p><center>$thisyear{f7c}</center></p></td>";
print "  <td><p><center>$thisyear{f7d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>8. Numer of guidance couselors/directors in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f8a}</center></p></td>";
print "  <td><p><center>$thisyear{f8b}</center></p></td>";
print "  <td><p><center>$thisyear{f8c}</center></p></td>";
print "  <td><p><center>$thisyear{f8d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>9. Numer of librarians / media specialists in <strong>full-timev";
print "equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f9a}</center></p></td>";
print "  <td><p><center>$thisyear{f9b}</center></p></td>";
```

```
print "  <td><p><center>$thisyear{f9c}</center></p></td>";
print "  <td><p><center>$thisyear{f9d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>10. Numer of library / media support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f10a}</center></p></td>";
print "  <td><p><center>$thisyear{f10b}</center></p></td>";
print "  <td><p><center>$thisyear{f10c}</center></p></td>";
print "  <td><p><center>$thisyear{f10d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>11. Numer of non-teaching Special Education professionals not included above in <strong>full-time
equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f11a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td>";
print "  <td><p><center>$thisyear{f11c}</center></p></td>";
print "  <td><p><center>$thisyear{f11d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>12. Numer of clerical support staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f12a}</center></p></td>";
print "  <td><p><center>$thisyear{f12b}</center></p></td>";
print "  <td><p><center>$thisyear{f12c}</center></p></td>";
print "  <td><p><center>$thisyear{f12d}</center></p></td>";
print "</tr>";

print "<tr>";
print "  <td><p>13. Numer of other support service staff in <strong>full-time equivalents</strong></p></td>";
print "  <td><p><center>$thisyear{f13a}</center></p></td>";
print "  <td><p><center>$thisyear{f13b}</center></p></td>";
print "  <td><p><center>$thisyear{f13c}</center></p></td>";
print "  <td><p><center>$thisyear{f13d}</center></p></td>";
print "</tr>";
print "</table>";

print "<br>";
print "<hr size=3>";
print "<br>";

print "Submission Date: $thisyear{date}</p>";

print "<p><center>Please verify the data; otherwise <a
href=\"$in{last_page}\">return</a> to change it.</center></p>";

}
}

#---------------------------------------------------------------------
# File data: store the data in a DBM file.
# This module receives a parameter from the main program.
# This parameter may be either the default value to be stored for
```

```
# empty fields, or a special code to signal an update of only a few
# values.
#---------------------------------------------------------------------
sub file_data {

local($separator, $error_value);
$separator=":"; # Separator for fieldnames, not URL paths!
$error_value = "Init value--if you see this, contact your sysadmin!";
$non_numeric_flag = 0; # Initialization

# open DBM file
# Any changes to associative array filehandle automatically get written to disk
$dbmfile = "Server HD:WebSTAR:nhdata:data:data";
dbmopen(%DATA, $dbmfile, 0644);


$in{date} = localtime;  # Submission date. This can be changed to be
                        # inputted in the HTML form.

# Check data for non-numeric characters
while ( ($fieldname, $value) = each(%in) ) {
   if ($value eq "") {              # If field is left blank.
      $in{$fieldname} = $_[0];       # Set the value to passed parameter.
      } # end if
      # \D stands for non-numeric characters.
   elsif (($value =~ m!\D!) && (($fieldname ne "district") &&
      ($fieldname ne "date") && ($fieldname ne "super") &&
      ($fieldname ne "last_page") && ($fieldname ne "update"))) {
      $non_numeric_flag = 1;
      $error_value = "\'$value\'";
   } # end if-elsif
} # end while

#transfer  data from associative array %in to filehandle %DATA
unless ($non_numeric_flag == 1) {
   while ( ($fieldname, $value) = each(%in) ) {
     unless ($value == -1) {   # A negative number signals an update,
                        # which implies not filing any blank fields.
                        # The -1 was chosen as an arbitrary numeric
                        # signal--any other special number could be used.
      # Fieldnames are something like 1996:Manchester:f2b
      $fieldname = $year . $separator .  $in{district} . $separator . $fieldname;
      $DATA{$fieldname} = $value;
     } # end unless
   } # end while
} else {
       print "<h1>Error</h1><p>Your entry \'$error_value\' is not valid.\n";
       print "Only numeric data is acceptable. In other words, the form ";
       print "will accept only numbers and decimals. If commas, letters, ";
       print "and/or any other characters that are not numbers (or the ";
       print "decimal point) are present in even a single field, the data ";
       print "will all be rejected. In this specific case, ";
       print "you submitted \'$error_value\', which is why your data is ";
       print "being rejected.</p>\n";
```

```
} # end unless-else

dbmclose(DATA);
} # end sub

#--------------------------------------------------------------------
#Get date
#
#Get's date using "localtime". This date can then be used to write
#the data files.
#--------------------------------------------------------------------
sub get_date {
	$date = localtime;
	$date =~ s!  ! !g;	# Eliminate double spaces, which can wreak havoc at the beginning of the month.
	local (@date_fields);

	# $date is now something like "Mon Jul 15 15:15:01 1996"
	# We only want the year, therefore we split up the string
	@date_fields = split(/\s/,$date);

	# The year is the fifth element. Since array starts at 0,
	# $date_fields[4] is equal to the year.
	$year = $date_fields[4];
	$lyear = $year;
	--$lyear;
}


#--------------------------------------------------------------------
# Load data
#
# Puts the year's data into %thisyear
# Puts last year's data into %lastyear
#
# Assumes filed data is valid.
#--------------------------------------------------------------------
sub load_data {

local($separator, $maxvalue);
$separator=":";
$maxvalue=0.25; # Set alert threshold to a difference of 25%.

#open DBM file
$dbmfile = "Server HD:WebSTAR:nhdata:data:data";
dbmopen(%DATA, $dbmfile, 0644);

#load %DATA into %thisyear and %lastyear
print "Year: $year<br> District: $district <br>\n";
print "<hr size=3>";
while ( ($fieldname, $value) = each(%DATA) ) {
   ($y, $d, $f) = split(/$separator/,$fieldname);
   if (($y == $year) && ($d eq $district)) {
            $thisyear{$f} = $value;
   } elsif (($y == $lyear) && ($d eq $district)) {
```

```
            $lastyear{$f} = $value;
        } #end elsif
    } #end while
    dbmclose(DATA);

    #Check values for large discrepancies (determined by $maxvalue)
    while ( ($f, $value) = each(%thisyear) ) {
          unless ( $lastyear{$f} <= 0) {
                local($diff, $alert, $endalert);
                $diff = ($value - $lastyear{$f}) / $lastyear{$f};
                if ($diff >= $maxvalue) {
                      $alert = "<font color=\"FF0000\">";
                      $endalert = "</font>*";
                } else {
                      $alert = "";
                      $endalert = "";
                } #end if-else
          $thisyear{$f} = $alert . $thisyear{$f} . $endalert;
          } # end unless
    } #end while
    } #end sub

    #---------------------------------------------------------------------
    # Validate superintendent
    #
    # Checks superintendent against a file of valid names
    #---------------------------------------------------------------------
    sub validate_superintendent {

    local($super, $district);
    $super=$in{super};
    $district=$in{district};

    $assoc_file = 'Server HD:WebSTAR:nhdata:data:associations';

    #initialize $super_validity
    $super_validity = 0;

    dbmopen(%SUPER_OF, $assoc_file, 0644);
    if ($super eq $SUPER_OF{$district}) {
       $super_validity = 1;
    } # end if
    dbmclose(SUPER_OF);

    } # end sub

    #---------------------------------------------------------------------
    # check_password
    #
    # This subroutine is not actually implemented. However, if password-
    # checking is desirable, one way of implementing it would be
    # something like the (commented out) lines below.
    #---------------------------------------------------------------------
```

```
#sub check_password {
#[define password file]
#[open password file and check password-user matches]
#[set a password bit to 1 or 0]
#[close passoword file]
#} end sub
```