

**BioBase© - The Bibliographic Database**  
**Version 1.1**  
(Documentation 8/19/93)

**Introduction:**

BioBase is a database designed primarily for recording bibliographic data for scientific references. The program allows you to enter different citations and output a bibliography, complete with text formatting. I wrote BioBase using Microsoft Visual Basic for Windows 2.0, and so it requires the VBRUN200.DLL file. This DLL file is available for downloading from many FTP sites on the Internet, and should be available on BBS's as well. I am distributing this program as shareware, so if you continue to use BioBase for more than 45 days, the registration fee is \$20 US. For more information on registering the program, start the program, press F1 (for help) and search for "Registering". I would also like comments, particularly bug reports, requests for additions to future versions or (constructive (^:)) criticism, even if you do not want to register the program.

I am offering BioBase on an "as-is" basis. I do not make any warranties, express or implied as to the suitability of this program for a particular use. I have made every effort to eliminate any bugs and ensure that the program will perform as explained, but I'm unable to account for the millions of combinations of hardware and software that exist today. I'll be more than happy to help anyone who has problems running the program, but I cannot guarantee that the program will perform correctly for any particular individual. Please feel free to contact me at the following address if you have any problems (Internet mail will receive a quicker response):

**Normal Mail:**  
Stephen Burnett  
1227 Ann St.  
Grinnell IA 50112

Internet Mail: SBURNETT@TIRITH.CARLETON.EDU

**Program Overview:**

BioBase works with three different types of citations -- journal articles, books and articles in books (Search for help on "Citation" to find more information on the different types). The format of each record is slightly different, each containing information that is only relevant to that type of citation. The program will use the information you enter about your citations to make a bibliography, complete with formatted text (using an RTF file) that you can import in to your word processor. The format of the bibliography and the text formatting are very user-customizable. I have tried to make the program as flexible as possible, but there are so many different official ways of formatting a bibliography in the sciences, that I'm certain that the program won't work with some styles. If/when you do find some format that you can't produce, I would like to receive information about that format so that I can add it to a future version of the program. A sample of the format sent to the above address would be greatly appreciated.

**How BioBase Works:**

The program currently allows three specific types of citations: Journal Articles, Books, and Articles in Books (such as a compilation of articles on a common subject). Each type of citation has slightly different fields in it, but all three have some fields in common, such as the author, title and year of publication. There is no restriction on how many records of a certain type

you can add; you are only limited by disk space.

Once you have entered your data, you can examine the information in several ways. You can have a customized report printed on the main screen, to a text file or directly to the printer, you can search for specific records using a variety of methods and you can export specified records for importing into different databases. Most importantly, the program will produce a bibliography of the citations you select, using the bibliography format that you can define yourself.

#### **Getting Started:**

The program consists of one main window and several auxiliary dialog boxes. The main window is a place for the program to report on its progress (such as indicating how many records were exported). The information on this screen can be saved by checking the "Log Screen" option on the File Menu. If this option is selected (indicated by there being a check mark next to the menu item) then the program will save all the information in the main window when the program exits. The information will be saved to a text file with the same name as the database you were working on when the program was terminated with an extension of LOG. If there is already a file in the directory with that name, then the extension will be changed to L01, L02, etc. For example, the database "TESTING.SDB" will produce a log file named "TESTING.LOG". Note that the log file is only created when the program is terminated, so any text that you remove from the main window will not be in the log. You can edit the text using the commands from the Edit menu. The program functions with the clipboard in the same way that other programs do, however, only text can be pasted on to the main window.

When you start the program, you will briefly see the opening graphic, which shows, among other things, the version of the program. Once the main window is displayed, you can open a database (Ctrl-O) or begin adding records to a new one. You can add a record by pressing Ctrl-R on the keyboard or choosing Add Record from the Record menu. This will present a dialog box, allowing you to choose the type of record (journal article, book, article in a book) that you wish to add. You will then see a data-entry screen (a slightly different one for each type of record) where you can enter all the relevant information about the citation. You should make sure to type the information in each field as you want it to be displayed in the bibliography. For example, if you want the authors names to be displayed in the format: Smith, J.H. then you have to type it that way in the Author(s) text box, with the exception of any punctuation you want added to the end. You can choose to have the program add punctuation to the end of each field (see "Configuration Options" below).

The bottom of each screen contains three fields that are not included in the bibliography: Keywords, Comments and Abstract. These are fields for you to enter extra information about the citation that will make it easier for the program to perform a search as well as letting you store more data. The Keywords field is 100 characters long, it is intended for a list of individual words that relate to this record. The Comments field is also 100 characters long; this field can be used to store a short note or description of the citation. The Abstract field is the longest (800 characters); it can be used to save relevant parts of the citations abstract or to add more comments or keywords.

There are also two check boxes at the bottom of each screen. The first is labeled Add to Bibliography. All records with this box checked will be put into a bibliography when you create one. If the Export box is checked, when you choose the Export command from the file menu, this

record will be copied into an external file that you can use to merge the contents of different databases (see "Moving Records Between Databases" below). (Eventually, I hope to make BioBase support the export and import of tab-delimited text files so that your records can be moved between different databases.) Both of these check boxes can be changed any time you are viewing the record.

Pressing the OK button saves the information in the current record to the buffer and returns to the main screen. Pressing the Cancel button returns to the main screen without saving the current information. Pressing the Left arrow button is equivalent to pressing OK, while pressing the Right Arrow will save the current information and bring up a new blank record form of the same type. This is useful if you need to add several records of the same type but you don't want to go through the dialog box to choose the record type each time. Finally, the delete button deletes the current record (this button is only available if you are viewing a record that has already been saved).

When you have finished working with your database you can exit the program by pressing Ctrl-Q or Alt-F4 or selecting Exit from the File Menu. If your database has never been saved or has been modified since you opened it, you will be asked if you want to save the file. If the file has never been saved, then a file save dialog box will be displayed, where you can select the directory and filename for your saved file.

### **Searching for Records:**

Once you have entered records, you will often need to edit only those that match certain criteria. BioBase allows three different types of searches to find records that meet your specifications:

The first type searches every field in every record for the text you enter. The dialog box to type the search text is activated by pressing F5 or selecting the "Search All Fields" command from the search menu. Checking the case sensitive will only report a match if the record contains a string that contains a substring that exactly, letter for letter, matches the string you typed. For example, if you type "John" and select case sensitive, then "Smith, John" would produce a match, but "Smith, john" would not. Once the search is completed, the main window will display a report and, if you have chosen to have the search results displayed (from the Edit Configuration dialog) then you will be presented with the edit screens for the records that matched.

The second search type only checks one particular field in each record. The "Search One Field" is chosen from the Search Menu or with the F6 key. The dialog box you see will allow you to type in text to search for and the field that you want to be searched. The final four option buttons allow you to search for all the records that are marked for adding to the bibliography, all the records that are not marked for the bibliography, all the records that are marked for export and all the records that are not marked for export. The case sensitive check box functions identically to the one on the Search All dialog box.

The final search allows you to search several different fields for different text. "Search Multiple Fields" is selected with the F7 key or from the Search Menu. The dialog box displayed after selecting this choice allows you to put a check mark by each field to mark which ones you wish to search. The text boxes next to them allow you to type the text to try and find. If the check box next to a field is not selected, then the text that is in its search text is ignored. Currently, the program only allows OR searches, meaning that if a record contains a match to any of the text

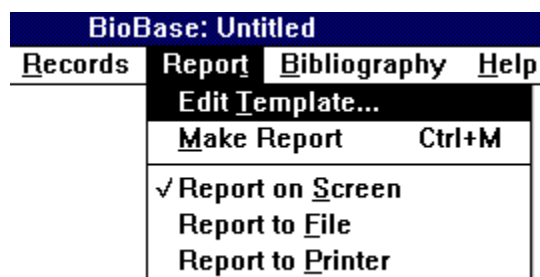
you type it will count as a match, regardless of whether or not it contains the other text you are searching for. The case sensitive check box functions identically to the same box on the other two search dialog boxes.

You may also choose a specific record number to display and edit. To do this, you can press Ctrl-G or select Goto Record from the Search Menu. A dialog box will be displayed, where you can type the record number you want to see. If there is no record with that number than you will receive an error dialog box.

### Show All and Search Result Displays:

When the results of a search are displayed or the Show All command is chosen from the record menu, the program will show each matching record in order. You can navigate through this by pressing the OK button on each screen, which will save any changes to the particular record and move to the next one. You can also move through with the arrow keys. Pressing either arrow key saves any changes and moves to the next record in the list. If you press the left arrow while on the first record or press the right arrow button while viewing the last record, then you are returned to the main screen. Pressing the Cancel button returns you to the main screen. Pressing the delete button deletes the citation you were examining and displays the next record. If no records remain, then you return to the main screen. When you delete a record from a database, the information is not actually removed, just marked as usable space. By default, the program will overwrite deleted records as new records are added. You can change this behavior with the Edit Configuration command (see Configuration options below). This means that if a record is deleted you should recover it immediately to prevent it being used to store new data (see the section on recovering records to see how).

You may also want to see information about every record that you have entered into your database so far. You have two options to achieve this. The first is to select "Show All" from the Records menu. This will present you with an edit screen for each record so that you can modify any aspect of each record. The second option is to choose "Make Report" from the Report menu (or by pressing Ctrl-M). What this does depends on the state of the menu items on the report menu



If Report to Screen is checked, then the information is displayed on the main window. If Report to File is marked, then the report is sent to a file with the same name as the current file with an extension of RPT. If the file is not saved, then the report is named "UNTITLED.RPT". If there is already a file with the same name in the directory, then the extension is changed to R01, R02 etc. Report to printer sends the information to the print spooler. The format of the report is determined by the settings in the Template (see Formatting Output below).

You can also have BioBase simply count all the non-deleted records in the database and report that number in the main window. To do this, you select the "Count" command from the Records menu.

## Formatting Output:

BioBase allows you to freely modify the way that information is displayed by the program. This is done two ways: modifying the report Template and editing the bibliography Style. A report is displayed on the main window, when ever the results of a search are conducted or the Make Report function is selected. A report can also be sent to a text file or directly to the printer. The Template is the information indicating which fields should be included in each report. It is usually a waste of time to produce a report using every field, especially for long databases as this would become rather time-consuming. When you select Edit Template from the Record menu or the Edit Configuration screen, you will see a dialog box with a list of all the possible fields. Putting an X in the box next to a particular field will tell BioBase to put that field in the next report (fields that do not exist in a specific record will be ignored when making a report - e.g., a journal does not have a city field). The format of the final report will be based on the template. Currently, each field in a record is placed on a separate line, with a blank line between records, and if a field is longer than the screen is wide, then the text continues off the edge of the screen.

The bibliography is even more customizable than the report is. When you choose to edit the style, you are presented with the Style editing screen. There are three separate sets of check boxes, one for each type of record. Checking the box next to a certain field, tells the program to include that field when making a bibliography. However, if a field exists in more than one record type and you want it to be included for any record with that field, then you have to check the box for each citation type. For example, checking the author box in the Journal section will not cause the author to be added for the other record types unless you check those boxes as well. The column of boxes labeled Place is simply to keep a list of numbers indicating the order that the different fields will be added to the bibliography. A place value of 1 means that a particular field will be the first one used for the bibliography. The final four columns of check boxes are for text formatting. The B check box tells the program to put this field in bold text, while I and U produce italic and underlined text, respectively. The P check box tells BioBase that this field should go in parentheses. Any combination of these four boxes may be checked for any field. The final column of text boxes (labeled "Punct") is space for you to enter the punctuation that follows each field. The punctuation is added according to the setting that you select from the Edit Configuration window. You may have up to five characters of text for each field's punctuation, however, any leading or trailing spaces are stripped from the punctuation before it is added to the bibliography. This allows you to simply type, for example, a comma (,) in one box and that is the only punctuation that will be added to the field -- the other blank spaces in the box will be ignored.

Once the Style is customized to your liking, you tell the program to make a bibliography by choosing Make Bibliography under the Bibliography menu or pressing Ctrl-B. All records that have been marked for adding to the bibliography will be extracted from the data file and put in to either a plain text listing or a file in RTF format, depending on the type of output you have chosen from the Edit Configuration window. If you have chosen the "Full Rules for Alphabetizing" BioBase will alphabetize your records using all of the following rules. If this option was not checked, then only the first rule will be used.

- 1) If the first fields for two citations are **exactly** the same, then the second field will be used to alphabetize them. For example, if the authors are the first field and the journal title is the second field in the Journal Article Style, then an article by "Smith, J." published in "Animal

Behavior" would be listed before one by "Smith, J." published in "Behaviour". If a particular record does not have information entered for a field that is listed for adding to the bibliography, then that field is ignored, and the bibliography is generated using the fields containing at least one character. If the field that is blank is the field that is being used to alphabetize the records, then the citation will be alphabetized on the first field that does contain text.

**2)** If one of the fields contains "Mc" (e.g. McKone, McGregor etc.) the text is treated as if it started with "Mac" for purposes of determining the alphabetical order. For example "McKone" becomes "MacKone" for purposes of determining the order of records in the bibliography. This is mainly designed for use with names.

**3)** All commas and periods are ignored while determining the correct order. For example, "Smith, J." and "Smith J" are considered equivalent.

**4)** The word "and" is ignored when determining the correct order. For example, "Smith, J. and Jones, J." is the same as "Smith, J. Jones, J.". This is to prevent the word "and" which is present in many author listings from affecting the order of the citations in the bibliography. This may result in some citations being out of order if the bibliography is being alphabetized by title.

Using all four rules results in the order of citations being slightly different from the order determined without using these rules, but the procedure is slower. These rules were designed primarily for use when the Authors or Editors were the first item in the citation. If this is not the case, then these extra rules will not serve much purpose. If you are not alphabetizing by one of those fields or if you are just making a rough draft, I would recommend turning this option off since the order of citations may be different than you expect and the speed increase is very noticeable on even moderate (~100 records) databases. For the final draft when the Authors/Editors are the first field, I turn this option on.

### **BioBase File Management:**

BioBase tries to maintain as small a file size as possible by using records that have been marked for deletion as the space for new records. This way the file will not increase in size until the current records that have been deleted have all been overwritten by new records. If you do not choose to have the program overwrite the deleted records (see "Configuration Options" below) then new records are added to the end of the file automatically. This means that any records that are deleted will continue to take up space. To prevent this from causing the data file to expand and take up disk space, you can use the "Compact Database" command on the Edit Menu. Selecting this command removes all deleted records from the database, decreasing its size. Once you do this, you will not be able to Recover any records you did not wish to be deleted.

Recovering records simply marks them as active, so that they will no longer be overwritten. To access this function, choose "Recover Records" from the Records menu. This version of BioBase does not ask whether or not you want to recover a particular record, it simply recovers all the deleted records in the current database. If you have selected Overwrite Deleted Records from the Edit Configuration dialog box, then deleted records will be replaced by new records, so you will want to recover a record as soon as it is deleted, since it may be impossible to do so later.

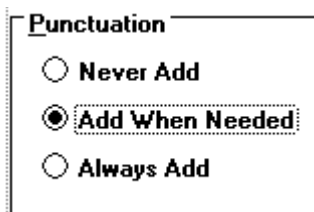
### **Moving Records Between Databases:**

Since BioBase only allows you to have one file open at a time, you cannot move records from one database to another directly. What you must do is edit those records you want to copy to another file and click the Export box on the edit screens for those records. Then, you choose

the "Export" command (Ctrl-E) from the File Menu. This tells BioBase to make a new file with the same name as the current data file and an extension of XPT. If there is already a file with that name in the current directory, then the extension is changed to X01, X02 etc. For example, the file "TESTING.SDB" will produce an export file named "TESTING.XPT". Once the records have been exported, you open the database to which you want to add the records and choose "Import" (Ctrl-I) from the File menu. The program will display a file selection dialog box where you can choose the file that you want to import. If you are importing a large number of records or if the file you are adding the records to is large (>200 records) then you may want to turn off the overwriting of deleted records so that the import procedure proceeds more quickly.

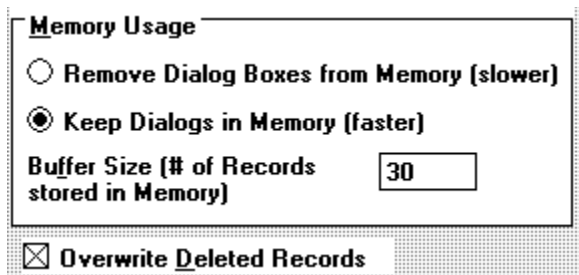
### Configuration Options:

BioBase allows the user to change several options that determine how the program will function. The majority of these are accessed using the "Edit Configuration" command from the Edit Menu. This will present you with a dialog box that allows you to change these options.



The screenshot shows a dialog box titled "Punctuation". It contains three radio button options: "Never Add", "Add When Needed", and "Always Add". The "Add When Needed" option is selected, indicated by a filled radio button.

The first set of options determine how the program will add punctuation to the bibliography. If "Never Add" is selected, then no punctuation will be added -- all the citations will appear exactly as you typed them in. If "Add When Needed" is selected, then if there is punctuation defined for a certain field (punctuation is set on the Edit Style screen - see "Formatting Output" below) it will be added if the field does not already have that punctuation. For example, if the punctuation for the Journal Author field is set to a period (.) and the text in one citation is "Smith, J" then BioBase will put "Smith, J." in the bibliography. If the text is "Smith, J." then BioBase will not add any punctuation. Note that all the punctuation is added to the end of the field.

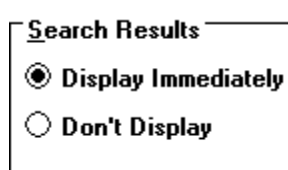


The screenshot shows a dialog box titled "Memory Usage". It contains two radio button options: "Remove Dialog Boxes from Memory (slower)" and "Keep Dialogs in Memory (faster)". The "Keep Dialogs in Memory (faster)" option is selected. Below these options is a text input field labeled "Buffer Size (# of Records stored in Memory)" with the value "30" entered. At the bottom of the dialog is a checked checkbox labeled "Overwrite Deleted Records".

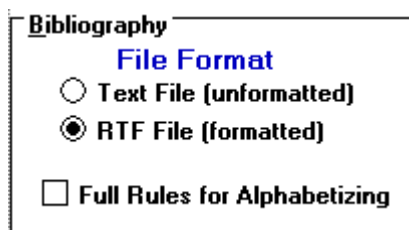
The second set of options is labeled "Memory Usage". These options allow you to change the amount of memory and resources that the program uses. Selecting "Remove Dialog Boxes from Memory" will significantly decrease the memory and resources used by the program. This will, however, slow the program down since the dialog boxes must be loaded from disk each time they are displayed. If you choose instead to have the dialog boxes stored in memory, the program will run faster, at the cost of a larger memory usage. In general, unless you have a severe memory problem, it is best to keep the dialog boxes in memory to speed the program up. Some dialog boxes cannot be stored in memory (most notably the Edit Style and Edit Template

dialog boxes) so there will be a delay each time one of these windows is shown. There is also a text box where you can type the number of records that you want to be stored in memory at one time. The default is 30 records which occupies slightly more than 52 K in memory. Each record is only 1751 bytes, so decreasing this will not reduce the memory usage very much, nor will increasing it speed the program significantly.

Below the Memory Usage section is a check box labeled "Overwrite Deleted Records". If this box is checked, then new records are first placed in spots where a record had been deleted before adding them to the end of the file. If this box is not checked, then new records are added to the end of the file automatically. Overwriting deleted records generally results in smaller files because the only way to remove a deleted record is by choosing "Compact Database" from the Records menu. While there is some speed decrease when overwriting is enabled (the program must scan through the database and find the records that are marked for deletion) when the database is below 200 records in size there was not noticeable lag on my computer (386DX 20 Mhz) and up to about 500 records the lag was minimal. The advantage to not overwriting is that you can undelete records without having to worry that the record you want to recover has been overwritten. The disadvantage is that, in this version of BioBase, there is no way to specify if a particular record should be recovered, so all the records you have deleted will be recovered. I recommend keeping this box checked until there is a noticeable slowing in program speed, then uncheck this box to speed it back up. If working with overwriting off, you should choose "Compact Database" any time you delete a large number of records from the database.



The next options concern the display of search results. If the default "Show Immediately" is chosen, then as soon as a search is finished, a report will be displayed on the main screen and then the edit screens for the records that matched the search will be shown sequentially so that you can edit the information. If "Don't Display" is chosen, instead, then the program will not show the edit screens, but it will still generate a report.



The Bibliography section of the window contains two option buttons and a check box. The option buttons determine the file format of the bibliographies produced by BioBase. An RTF (Rich Text Format) file is in a format that many popular word processors (DOS, Windows and Macintosh) can read. Files in this format can have formatted text such as bold or italic type. When this option is chosen, the box below the Bibliography section will allow you to choose the options that apply to this type of file. If you select a text bibliography, you will see a different box below the bibliography section that allows you to set the options for text bibliographies.



**RTF Formatting**

Font **Century Schoolbook** ▾

Font Size

**Indent Citations**

**Indent First Line**

**Indent after First Line**

In the RTF box, there are several items: a font list to choose the font to use in the bibliography, a text box for the font size and two check boxes and two radio buttons. The first check box is labeled "Double Space"; checking this box results in a double-spaced bibliography. This check box functions in tandem with the Double Space check box in the text bibliography section; if you select double space for the text bibliography, then the RTF bibliography will be double-spaced as well. When this option is chosen, there is only one carriage return between two citations not two, so the citations will look similar to the ones below (these citations also show the effect of selecting "Indent After First" option):

Darwin, C. (1964) On the Origin of Species (A Facsimile of the First Edition). Harvard University Press, Cambridge.

Payne, K. and Payne, R. (1985) Large scale changes over 19 years in songs of Humpback whales in Bermuda. Zeitschrift fur Tierpsychologie 68: 89-114.

There is also a check box in this section labeled "Indent Citations" if there is an "X" in this box, then the two option buttons below it will be active, otherwise, they will not. Selecting this box tells BioBase that you want the bibliography to have indentations in each citation, either the first line will be indented, or all the lines of a citation after the first. You choose between these two options using the buttons labeled "Indent First Line" and "Indent after First Line". Activating these options creates an RTF file with the formatting to indent the lines in this manner. This information is read correctly by Microsoft Word for Windows, DOS and Macintosh, but other word processors may not support this option. If you choose one of these options and get a garbled bibliography, or if the citations are not indented, then you should not select this function. The Indent check box and the two radio buttons function identically to the same options in the Text Formatting section, and, in fact, activating a button on the RTF section changes the settings in the text section to the same values. For example, If you set the RTF bibliography to indent every line after the first, then the text bibliography will have the same setting. Selecting this option will also add all the formatting information that you have defined in the Style to the bibliography.

**Text Formatting**

**Include Carriage Returns**

**Indent**

**Indent First Line**

**Indent After First Line**

**Double Space**

**Maximum Line Length**

If you choose the Text file option, the bibliography will only contain the formatting option to put the text of the field in parentheses, the "P" check box on the Edit Style dialog box. The other options you specify in the Style are ignored in a text bibliography, but you can set such options as line length, whether the bibliography should be double spaced, whether carriage returns should be added to the file and where tabs if any should be added. If the carriage returns are not being added, then the other options will all be

disabled. "Indent First" tells the program to put a tab at the beginning of the first line of each citation. "Indent After First" produces a bibliography where every line after the first line in the citation has a tab at the beginning. The "Double Space", "Indent", "Indent First" and "Indent After First" options all function in tandem with the same options in the RTF formatting section. If you activate one of these options for the text bibliography, then it will also be active in the RTF bibliography.

The check box, marked "Full Rules for Alphabetizing" determines how the program alphabetizes the records while making a bibliography. If this option is checked, then all four rules listed in the "Formatting Output" section are followed. If this option is not checked, then only the first rule is used. Selecting this option results in bibliographies with a slightly modified order for the citations, but this comes at the result of slower operation. Unchecking this box will speed up the bibliography option. This option only improves the alphabetizing of records if the citations are being alphabetized by a field such as the Authors and Editors fields that contain people's names. Otherwise, choosing this option may cause the citations to be slightly out of order in the bibliography. Generally, for rough drafts, turning this option off will be correct enough and speed the program up considerably. When producing a final draft, where the citations order depends on alphabetizing names, I would recommend turning this option on. For a final draft where people's names are not the main factor, leaving this option off results in a better-ordered bibliography.

**For More Information:**

If you need more information on how to use the program, check the help provided with the program for the subject. If the information is not there, then feel free to contact me at the address located at the beginning of this document.