

ENDNOTE: KEEPING TRACK OF REFERENCES

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Abstract

Endnote is a reference management software that allows the user to create a database of references (including extended abstracts) that can be queried in multiple manners and that can be used to include and format references into documents. The format (style) of the citations and bibliography can be changed any time and as many times as needed. Different styles are included with the original package but the user also has the ability to design his/her own style. References can be entered into the database manually but also automatically from already existing files or even from online sources. Many different filters and connection specifications are included in the package but the user is also allowed to design new ones. Finally, Endnote could be used as a common interface to many online libraries and electronic databases.

Introduction

Reference management software is a family of programs that help in the use and management of bibliographic references. They evolved from being simple databases to software that format documents written in the major word processing packages and serve as interface to libraries and online sources. Their user interface also evolved to become quite user friendly while, at the same time, prices were kept reasonably low (especially taking into consideration that most users are in the academy).

Currently the market offers several different packages. There is Reference Manager (<http://www.isiresearchsoft.com/>), Endnote (<http://www.isiresearchsoft.com/>), ProCite (<http://www.isiresearchsoft.com/>), Biblioscape (<http://www.biblioscape.com/>), Papyrus (<http://www.rsd.com/index.html>), and Library Master (<http://www.balboa-software.com/>) among others. Users currently have a fair selection as long as they stick to the DOS, Windows, or Mac (Apple) operating systems.

This tutorial is based on Endnote. Endnote is currently in version 4. It started as a DOS program and it currently runs on both the Windows and the Mac environment. In general, Endnote is backward compatible. They have not changed their file structure for quite a while. Continuity is an advantage for those users who share reference libraries but have not updated their software. On the other hand, it means that they have not been able to improve certain parts of their system (like increase the number of records per file or the number of reference types). Reference libraries can be exchanged between Mac and Windows users. Styles, filters, and connections files (all of which we will talk about later) are not as easily interchangeable.

Endnote is capable of allowing manual entry of references. Each library (defined as a single physical file that holds references) can grow to a maximum of 32,000 references and 32 MB. There is no limit on the number of libraries one can have but there is little incentive to separate the references into different libraries since there is no search function that can look through several libraries at the same time. As expected a smaller library can be scanned faster and is easier to share but otherwise merging all of the references into a single library is the preferred option.

There are 26 different reference types (ex. journal article, book, book section, conference proceeding, working paper, etc.). All but the generic reference type can be customized. Each type can have up to a maximum of 38 fields. The system comes with a predefined set which allows the user to start working immediately; but as the user gets proficient, s/he finds that some additional types are needed and that some of the existing ones are totally useless for their application. Modifying reference types, adding, and deleting fields to them is a very easy and quite straightforward process (Edit, Preferences, Reference Types, Modify reference types).

Endnote is also capable of importing references from many different files formats or from online sources. The former is accomplished using import filters and the latter using connection files. Online connections are accomplished using the Z39.50 standard. The online connection can also be used as a common interface to many online sources. A large number of import filters

and connection files are included with the program but additional ones can be downloaded from the manufacturer's website (<http://www.isiresearchsoft.com/en/help/ENsupport.htm>).

Endnote can format documents written in many common formats and following many different styles. Endnote can also function as an add-in module to both MS-Word and WordPerfect. Formatting a document is a very simple process as long as the style has already been designed. Users can define new styles but the software includes over 300 different styles and professional associations are including the pertinent styles in their website. MIS professionals can find many of the styles required in our field that are not included in the standard package at ISWorld (<http://www.business.auckland.ac.nz/departments/msis/personal/F.Tan/ISWorld/endnote.htm>). The manufacturer also provides more up-to-date styles at their website (<http://www.isiresearchsoft.com/en/help/ENStyles.htm>).

Endnote is easy to use. The only problem is the productivity curve. Endnote does not increase individual productivity noticeably during the first times that it is used. Its advantages are only observed later, after we have built a good library and start writing a document that includes mostly references already entered and format the document in a style that we already defined. It is this initial workload (of entering the critical mass of references) that discourages many users from incorporating Endnote into their toolbox.

Working with Libraries

When we launch Endnote it either asks us for the name of a library or it opens up our default library. Using the preference menu we can define which libraries we want to have opened automatically every time we launch Endnote. We can have many libraries opened at the same time. A document being formatted can use references from several libraries but I do not recommend that practice.

I would recommend that you create one library that contains all the references that you use. That library will only contain references that you have referred to in a document. You would also create another library and in that one you would include all of the references that you have keyed or imported. When you search for a reference you would do it in the second library. Once you have decided that you want to insert a citation, check if it exists in the first library and if does not, then copy that reference to the first library and cite it from there.

You could also have libraries that include references for only a specific topic or specific journal. If all of your references fit on a single library then keep them in one. If you are forced to use several libraries (because of size and number of references) then make a plan of how you are going to separate them.

Working with References

Once inside a library you can enter, modify, or delete a reference by using the reference option on the menu. Entering and modifying references is quite straightforward. There are only a few comments that I would like to make on these operations.

The reference type is entered at the start of the reference but it can be changed as many times as required. The change in reference type may affect the information already entered and it is a good idea to review the whole record after a change of reference type. Authors can be entered in many different formats. All the authors go on the same field but each one in a separate line. Each author can be formatted differently. The way they appear in the document will be based on the style used and not on the way that you enter them into the database. The more information you enter into the database the better. So if you enter the full first and middle name of the author you could use a style that uses them but if you only enter the initials, even a full style will not be able to make the full name appear.

Keywords are useful for later retrieval. More keywords are better than less. Make sure that you do not misspell them since misspelled keyword will not match your future searches.

Record numbers are automatically assigned by the system. You cannot modify them. There are only 32,000 of them. If you delete a reference the record number is lost (for that library!). If you start a reference and then decide to not record it you lose the record number. If you are planning on manually entering all of your references then this is of no consequence, you will never key that many; but if you import them you will soon populate your whole library.

Endnote allows you to enter special characters. Well, many of them are only considered "special" by our English-speaking colleagues. Accented letters and diacritical marks are not special in many other languages. The only consideration that you have

to make when deciding to enter them is that when you do a search you also need to enter them or otherwise they will not match. So as always, simply decide and stick by your decision: either always include them or never include them.

A curiosity: to delete a record use Control-D. I always press on the delete key and that does not work. I am happy that it does not work because if it did I would have lost several references already. It is too easy to press the delete key.

Automatic Entry of References

I type (or to give credit to whom it belongs, my research assistant types) some of my references manually but most of them are entered automatically from other sources. There are 2 main sources of references: files and online sources. I can access many electronic indexes that allow me to save a file with the requested references. Those files include the basic reference but in many cases also include the abstract and many keywords. Importing that information is more accurate and certainly more comprehensive than manually typing the basic reference.

Each electronic index advertises that they output in a standard format. While it may be true for some, most of them simply use their own format and hope that it will someday become the standard. Fortunately most of those formats are consistent but in some cases they are not even consistent inside a single file.¹ Endnote includes a considerable number of filters but I found them very limited. They have been very helpful in developing new and more complex ones. The user can develop new filters as the need arises. The user can also adapt and improve the existing ones. The syntax used for designing them is not that complicated and with a little practice even the most complex files can be imported automatically.

There is a second option to automatically enter references. Endnote includes a Z39.50 compliant online interface. Many electronic indexes currently allow access through this Internet standard. If the electronic source allows the user to connect through this method then this is the optimal way of entering references. Endnote also comes with a large set of connection files to connect to common sources. Their website is continually updated with new connection files. But even if they are not included there, the user can create new ones (or edit old ones). If you browse through some of the included connection files and then ask customer service of your information provider for certain key information (like server address, database name, port ID, record syntax, login name and password) you should be able to design your own filter in less than an hour.

Term Lists

The idea of using computers and especially this type of software is to reduce our workload and become more efficient. Another nice feature of Endnote is the creation of term lists. The most common term lists are that of authors and of journals. Instead of typing and retyping the name of our favorite journal, we have a list of journals and select it from it. That allows for faster and more precise manual data entry since we reduce the number of keystrokes and assure that the journal is always listed the same way. Term lists are also useful for keywords. We can always copy the keywords listed in the article, but they are not always the relevant ones for us. An article could be on a specific topic but we could be interested only in a technique or discussion included on it. Such a technique or discussion may have not been the primary focus of the article and therefore it would not be listed on the keywords. We could define our own personal keywords. That allows for a more precise description of the reference. It also helps in limiting the number of synonyms used as keywords.

Formatting Documents

Endnote can format the citations and bibliography in a document. This task is not difficult but it is certainly time consuming if done by hand. Furthermore, if we change the intended outlet of our document we may need to change the format for the bibliography and citations. Endnote takes care of that. With a “raw” document where we have pasted all of our citations, Endnote formats the citations and generates a bibliography accordingly. It can generate several “finished” documents where each one is in a different format.

Endnote can work by itself and read a file that is in text, rich text, ClarisWorks, FrameMaker, MS-Word, Word Perfect, or AMI Pro format. It can also work as an add-in module to either MS-Word or Word Perfect. The add-in module is included in the basic

¹The reason being that the original information as been entered through several years and they have themselves changed their format and standards throughout those years and have not been able to update the older records. They gain from adding new records not from purging or reformatting their existing database.

Endnote package. The add-in mode makes the formatting and management of documents quite easy and is the recommended way to work with Endnote.

The “instructions” on how Endnote formats the citations and bibliography are contained in files called styles. Endnote includes a large number of them but I have found that most of the journals that I am interested in are not listed there. Users have the option to define their own styles. Defining styles is not difficult but it is time consuming. Furthermore, since we do not send many articles to the same journal, the process of defining the style for a particular journal is not such a useful task. On the other hand, for members of a discipline to define styles for the major journals and share them is indeed a great idea. We can find the styles for our main journals at the ISWorld site (<http://www.business.auckland.ac.nz/departments/msis/personal/F.Tan/ISWorld/endnote.htm#styles>). Another recommendation is for journal editors to freely provide potential authors with the Endnote style file for their journal.

Defining Styles, Import Filters, and Connection Files

Defining styles, filter, and connection files is not difficult but it is time consuming. The Endnote manual describes the process and includes all of the character and keyword tables that are required. Still, it is useful to look at and try to understand the inner workings of some finished ones before designing your own. It is also helpful to start from a working definition and modify it instead of starting from scratch.

The first step to define styles is to obtain all the information regarding the style in itself. To properly figure out how are citations formatted and how the bibliography is conformed. Some journals have a very detailed description of how they want them. Others give a few examples. Yet others simply give reference to a second journal and ask to use the same format. To define a style in Endnote we first need to fully understand the style in itself. The next step is to look for one that may be similar and start modifying it.

To define an import filter we need to understand the format of the file that we want to export. Some providers will explain their format but the large majority will not. In that case one has to examine a comprehensive sample file and extract the structure of the records. Once we know the structure then we can start writing the filter in Endnote. It has been my experience that few times is as easy as that. Extracting the structure is a difficult process since the examples included may not be all complete and some of the examples for infrequently used source types may not be included. Furthermore, there may be several co-existing structures for the same source type. I have found files that have over 20 different formats for a journal article (it is bad practice but it is also a reality). Endnote does allow that and it simply tests each one to see which conforms better. Here the order is important. Some structures should not be tried before others.

I always recommend that when you import references you do it into an intermediate library. After you have imported them, browse through it looking for anomalies. Two important places to look for anomalies are the year and the notes fields. In general the notes field includes information that the parser found but was not able to match. If you find any anomalies try to alter the filter and try the import again. Only transfer the new records to your final library when you have reviewed them and know that they are properly formatted. That way you will not only not “lose” record numbers but the reviewing process is also much easier.

Defining connection files is the easiest of the three. Very little programming is involved but a lot of information searching is required. The Z39.50 standard makes the whole process run quite smoothly but we still need to know the parameters. Only the parameters are given by the information provider and they do not like to publish them openly. In general you will need to make a few calls to their customer support help desk. They have been forced to provide this standard because of market forces but they do not like giving the interface to the customer. Once you implement it in Endnote you can even forget who the information provider is and the information provider cannot send you any additional information (or advertisement) as they can when you access them through their web pages or customized systems. You will also need to get from your institution a set of user login and password for those databases. Many institutions have IP-enabled systems and do not use logins and passwords so obtaining them may be complicated but hopefully not impossible. The individual in charge of safekeeping the passwords may have problems understanding why you want your “own” password instead of using the IP enabled option that everybody else uses.

Both filters and connection files may need periodic maintenance. Information providers tend to “improve” their formats and their systems. Each improvement means that we need to update our files to the new formats. Some online sources change the parameters every year so do not be surprised if by mid-January your connection files stop working.

Finally, there are some online sources that have a direct link to Endnote through web pages. They do not use the Z39.50 interface but they download their references directly into Endnote using Endnote format. In this situation, the user has very little control. The user cannot make a website conform to this standard or define a filter or connection file to enable it. It is up to the web site to offer the service.

Full Tutorial Found on the Web

As always the web is a great place to find information and even tutorials on how to use software. There are two useful tutorials freely available through the web. University of Notre Dame offers one at <http://www.nd.edu/~ndlibs/eresources/endnote/>. University of Auckland offers another at <http://www2.auckland.ac.nz/lbr//instruct/endnotut4.htm>. Both of them are quite comprehensive. The manual and either one of them should be enough for anyone to start using this program. Still, the most difficult step is creating the routine of entering all of our references into Endnote.

Conclusions

The time is ripe to start using a reference management program. Their current interface, connectivity, and power are such to justify the investment required to use them optimally. They do a fair job in managing the reference database; but they do a great job in formatting the documents and in importing references automatically. Their usefulness peaks when you want to reformat a document into a different citation and bibliographic style (like when you resubmit a document to a different journal) and when you have already inserted the majority of your references so that including a reference in a document is no more work than a cut and paste from your Endnote library.

Endnote is one of several reference management programs. It does a good job in all the different fronts. It has a nice user interface. The company's upgrade record is quite good. A researcher who writes from one to many papers a year will only gain from adding Endnote to his or her toolbox.

Bibliography

EndNote 4. Bibliographies Made Easy. ISI ResearchSoft, Berkeley, CA, 2000.