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Reference Management Software Programs

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Things You will Learn in This Chapter

- What a reference management software program is.
- Functions of reference management software programs.
- About various reference management software programs and some criteria for choosing the right program.
- About comparing EndNote®, ProCite®, and Reference Manager®.
- About other reference management software programs, including freeware/ shareware programs, and their features.

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What is a Reference Management Software Program?

These are software programs that simplify the process of reference management by allowing the user to collect, store, and organize references, insert citations at the appropriate place in the body of the manuscript, and generate a list of the references in an appropriately formatted bibliographic style.

Reference management programs were first introduced in the 1980s and have been gaining popularity since. In a 2001 survey conducted by *Scientist* magazine, 76% of respondents indicated that they use reference management software to organize their reference material collection[1]. As seen in Figure 1, this survey indicated that EndNote was the most popular program among the 250 scientists polled.

Reference management programs work by creating a personal digital library (or, database) of references. The references in a digital library can be easily searched, sorted, and inserted in a manuscript to create accurate bibliographies.

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[1] Perkel JM. The essential software toolbox. The Scientist 2001;15 (14):19

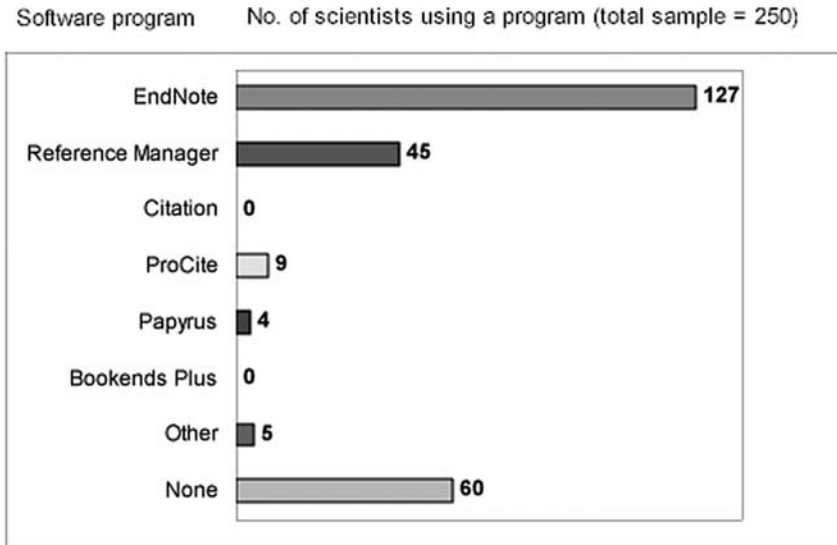Software program   No. of scientists using a program (total sample = 250)

FIGURE 1. Reference management software program user survey

Functions of Reference Management Software Programs

(A) Storing and Managing References

By storing references in a digital library, these programs provide you functionality inconceivable in the analog world of paper index cards—for example, they can search the library by multiple criteria such as author, title, journal, year, or keywords. Digital libraries can be stored in a computer eliminating the need for shelf space for index cards. They can also be backed up easily to avoid losing reference data.

    Some examples of the types of references that can be stored in a digital library include:

• Articles from journals, magazines, and newspapers;
• Books and book sections;
• Grants, theses and reports;
• Figures;
• Charts, tables and equations.

    A reference needs to be entered into a digital library only once, either by manually typing it in the library (Chapter 5) or automatically downloading it from an Internet database (Chapter 7). Then it can be used as many times as needed to create bibliographies.

(B) Creating Bibliographies

You can easily insert in-text citations into the body of the manuscript and automatically create an appropriately formatted bibliography using a reference management software program. The useful functions of these programs for creating bibliographies include:

- References are frequently added, edited, or deleted during the iterative process of writing. These programs greatly facilitate the process of automatically changing citation numbers in the body of the manuscript and ensuring that the in-text citations correspond to the bibliography.
- The bibliography can be automatically formatted according to a specific style such as the Vancouver style or the APA 5th style, or the style conforming to the requirements of the publisher.
- These programs eliminate the guess work out of accurately formatting bibliography and give you correct answers to questions such as 'should the New England Journal of Medicine be cited as NEJM or N Eng J Med?' and 'should et al. by used for more than three author names, or more than four, or never?'
- If you need to submit your paper to another publication for reconsideration, these programs will save you trouble by easily modifying the in-text citations and reference list according the style specification of the new publication.

Chapter 8 describes using EndNote to create bibliographies.

(C) Searching and Retrieving References
from Online Databases

You can easily search various online databases such as PubMed$^{®}$, Ovid$^{®}$, the Library of Congress, and various university catalogs using these programs (Chapter 7). This could minimize the effort of going to the websites of these Internet databases and learning their search mechanisms and syntax. Furthermore, these programs allow you to automatically retrieve selected references in your digital library without the need for manually entering references by typing. Automatic entry of references provides the following benefits:

- Typing errors, such as in authors' names or titles, are eliminated.
- Correct abbreviations of journal names are entered in the library.
- In addition to the essential reference information such as title, author(s) names, journal, and date of publication, extra information about a given reference is downloaded into the library, such as the abstract and the URL.

(D) Working with a Handheld Computer

Digital libraries can be copied onto a handheld device, such as a Palm computer for portability and for sharing information with colleagues through the infrared beaming technology (Chapter 10).

Various Reference Management Software Programs

The various of reference management software programs available these days differ in their emphasis on ease-of-use vs. functionality. As the functionality of a software program increases, generally the learning curve for the program becomes steeper.

The three popular reference management software programs are EndNote®, ProCite®, and Reference Manager®, all offered by the California-based company ISI ResearchSoft (http://www.isiresearchsoft.com). These three software products have been around since the early 1980s, when they were three separate products from different companies.

Table 1 provides a detailed comparison between these three software programs. In summary, EndNote is one of the most popular reference management software

TABLE 1. Comparison of EndNote, Reference Manager, and ProCite

Feature	EndNote®	Reference Manager®	ProCite®
Version	7	10	5
Highlight	The most popular and easiest to use	Network capabilities with simultaneous read/write access	Flexibility to group references and create subject bibliographies
Search the Internet	Yes	Yes	Yes
Organize references	Yes	Yes	Yes
Organize images and files	Yes	No	No
Format bibliographies	Yes	Yes	Yes
Operating system	Mac and Windows	Windows	Mac and Windows
Reference size	64K character maximum	Unlimited	Unlimited
Maximum number of references	32,000	Unlimited	Unlimited
Maximum number of fields	40	37	45
Maximum number of reference types	28	35	50 supplied, can add
Create lists of images and files	Yes	No	No
Subject bibliography	Yes	No	Yes
Spell check	Yes	Yes	No
True network capabilities	No	Yes	No
Create a list of "favorite" styles	Yes	No	No
Reference grouping	No	No	Yes
Advanced searching capabilities	No	No	Yes
Search across multiple databases	No	Yes	No
Construct document with Microsoft Word templates	Yes	No	No
Number of preloaded output styles	1,000+	700+	620+

Adapted from http://thomsonisiresearchsoft.com/compare/ (May 2004).

TABLE 2. Other commonly used reference management software programs

Name	Vendor	URL	Platform	Price*
Library Master	Balboa Software	http://www.balboa-software.com/libinfo.html	Windows, DOS	$249.95
Bibliographix	Bibliographix GbR	http://www.bibliographix.com	Windows, DOS	Free basic version; 100 EUR for Pro version
Biblioscape	Biblioscape	http://www.biblioscape.com	Windows	$79–$699
BiblioExpress			Windows	Free
BiblioWeb Server			Windows; Web-enabled program	$99–$499
Biblio Palm			Palm OS 3,4,5	$49
Citation	askSam Systems	http://www.citationonline.net	Windows	$229.95–$299
Nota Bene	Nota Bene	http://www.notabene.com	Windows	$399–$449
GetARef	DatAid AB	http://www.getaref.com	Windows	$230
SquareNote	SQN Inc.	http://sqn.com/sqn5.html	Windows	Free to $49
RefWorks	RefWorks	http://www.refworks.com	Web-based system; Windows, Mac, Unix	$70 per year
WriteNote	ISI ResearchSoft	http://www.writenote.com	Web-based service; Windows, Mac, Linux	Information not available on the web site (July 18, 2004)
Bookends	Sonny Software	http://www.sonysoftware.com	Mac	$99

*These are standard prices available on the web sites of these vendors. Check their web site for other pricing such as academic or group discount.

programs. It is an ideal tool for individual researcher and is available in student and standard editions. Reference Manager is a powerful bibliographic software, and is an ideal tool for large workgroups, networks, and collaborative projects. Reference databases can be shared over an intranet using a network edition of Reference Manager® for simultaneous read-write access by multiple users. ProCite is more sophisticated, and is usually used for special collections and catalogs. Unlike EndNote, it does not have a limit on the size of the reference library or the number of references in the library.

Table 2 provides a list of other commonly used reference management software programs. In addition to these commercially available programs, many other programs are available for free download on the Internet. None of these freely downloadable programs offer the features of a full bibliographic management tool; nonetheless you may find them useful for your professional needs. Table 3 provides a list of freeware (or shareware) reference management programs.

TABLE 3. Freeware/shareware reference management programs

Name	Vendor	URL	Platform	Description
Biblio-Express	Biblioscape	http://www.biblioscape.com/biblioexpress.htm	Windows	The freeware edition of Biblioscape with limited functionality
Papyrus	Research Software Design	http://www.researchsoftwaredesign.com	DOS, Windows, Mac	A full-featured software with ability to create bibliographies and search the Internet databases
Scholar's Aid 2000 Lite	Scholar's Aid	http://www.scholarsaid.com	Windows	Free software that helps download references from Internet databases. It can also be used to convert EndNote databases into a Scholar's Aid
Online Bibliography Builder	The University of Toronto	http://www.ecf.toronto.edu/~writing/bb.html	Web based; requires a browser with Javascript and frames capability	This software helps the researcher format the references in two styles only, the Chicago Manual of Style (author-date style documentation) and the IEEE style documentation (a reference-sequence system). Each bibliography entry can be generated by filling in an online form and clicking the submit button. The reference that is generated can then be pasted into the word processor. There is no functionality to save the references or provision to process a batch job
My Notes	Tim Takacs	http://www.tn-elderlaw.com/mynotes.html	Windows; Microsoft Access	A Microsoft Access Reference Manager. New references are inserted into the database by filling in the access form. The software offers functionality of searching for references within the database and printing reports. It does not however offer functionality like integration of the reference manager with Microsoft Word and automatic download of references from other Internet reference database like Medline/Ovid. It does not provide a choice of output styles

Which Program Should You Choose?

My suggestion is that you test-drive a software program before buying. Many vendors (including ISI ResearchSoft for EndNote) let you download a fully functional trial version of the program for free. Some of the important considerations for choosing the right software are:

(a) Individual Use vs. Network Installation. If you are buying software for individual use, you have a wide variety of choices. If you want to install a reference management program on the network of an organization, only a few software programs (such as Reference Manager) are suitable for network installation. EndNote provides only limited network capabilities.

(b) Platform. Keep in mind that most of the available programs run on Windows-based computers. If your computer has a different operating system such as Mac, you need to look carefully in the installation requirement of the software to make sure it can run on a Macintosh computer. Your other option is to use a web-based program as they require only a compliant browser (and not necessarily a compliant operating system).

(c) Ease of Use vs. Functionality. Ease of use often inversely correlates with functionality. Generally, programs that have many advanced features are somewhat complicated and cumbersome to use. EndNote is a popular software because it provides a happy medium for ease of use and functionality.

(d) Price. I have listed prices for some programs in Table 2 of this chapter and Table 1 of Chapter 3. Please refer to vendors' websites for more detailed information.

The rest of this book deals with learning how to use EndNote efficiently and effectively. I decided to focus on EndNote as the software of choice because it is the most commonly used reference management software among healthcare and biomedical professionals.