Mendeley: An Online Software for Reference Management in Research

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Abstract - **Research is a systematic effort to gain new knowledge. A researcher has to collect a lot of existing information resources in the specific domain of knowledge for persuing research. Due to Information and communication technology most of the information resources are appearing now in electronic format. The range of information resources varies from e-books, e-journals, databases, images, power-point presentations, audio and video resources. After collecting the resources, the researcher has to organize it in personal computers or on web for further study and consultation. Reference is a link or relationship between two objects in which one gives acknowledgement to other. Mendeley is an online software for researchers not only to collect and store their items, but also to organize, tag them, save the resources and create citation and bibliography automatically in standard formats. Researchers can save their precious time by using this software, which was earlier done manually and consumed a lot of time during the research process. The article introduces online softwares for reference management i.e. Mendeley, Zotero and Endnote. It further highlights how Mendeley can help a researcher in creating personal digital library, reference management, as a social networking site and the other facilities which are very useful for academia and researchers. This software can be used free of cost up-to a certain limit of storage space on cloud.**
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I. INTRODUCTION

Research originates from ideas that had already been brought out by someone else and provides one step ahead what can be done further in the same area. Being a researcher, it is imperative to be aware of the current trends going on in any particular area of interest by acknowledging pioneer works from appropriate authentic sources and cite the earlier literature. If a researcher has duplicated the efforts of other researchers, it is required to mention their contribution with proper citation otherwise it would be an act of plagiarism. In order to arrange a complete list of references, it is mandatory to keep correct records of books, journal articles and other sources. Suppose the researcher has gone through a book few months back it is quite difficult to memorize a reference for the same and it is a tedious process as well. To avoid this practice the researcher has to record and manage the reference as he/she go ahead with his learning and research. One of the major challenges is to manage and record all references in a regulated way. In view of the need of researchers with the changing era of technology, several softwares are available nowadays that will facilitate in collecting and maintaining references which can be retrieved adequately and efficiently.

II. ONLINE SOFTWARES FOR REFERENCE MANAGEMENT

Online reference management softwares have been recognized as one of the most advantageous digital softwares for present day researchers. These softwares can be usually integrated with word processors so that a reference list in appropriate format is produced automatically as an article is written, reducing the risk that a cited source is not included in the reference list.

These softwares are influential mechanisms which guide in handling, organizing and recording individual's research specially in formatting bibliographies. Technology has altered the manner researchers used to provide footnotes for the citations occurring in their text. Online reference management softwares cater a researcher the facility to import references from variety of sources such as bibliographic databases, library catalogues and websites, or other sources. A researcher can manage or edit the references if they are available in the system and if he can't be able to find the references online it can be added manually. These reference management softwares allow to export references into a document, helps to create researcher's own critical abstract, links to word processing documents and insert footnotes, endnotes, or in-text citations and also contribute in formatting a bibliography as per the reference style/pattern of individual's choice and re-format whenever is required.

III. BENEFITS OF USING REFERENCE MANAGEMENT SOFTWARES

Reference management softwares are available for recording and utilizing bibliographic references. Once a citation is being recorded, it can be reused numerous times in producing bibliographies (lists of references in scholarly books, articles and essays). The evolution of reference management packages has been directed by the rapid growth of scientific literature. These software packages consist of a database wherein complete bibliographic references can be undertaken along with a procedure for generating selective lists of articles in the distinct formats needed by publishers and scholarly journals. Modern reference management packages can easily be integrated

with word processors and help out in creating reference lists in suitable formats whenever an article is written thereby reducing the risk for a cited source not included in the reference list. These softwares also have the provision for importing the details of publications from bibliographic databases.

Besides managing references, most reference management softwares facilitate searching references from online libraries which are generally based on Z39.50 protocol. Reference management softwares assist researchers to build and organize their checklist of references for research projects and are designed to arrange citations into certain formats for the composition of manuscripts and bibliographies. Several search softwares impart ways to download references into reference management softwares. There are several softwares developed for the purpose like Endnote, Mendeley, Zotero, Papers, BibTex, Quikka etc.

IV. MENDELEY

Mendeley was created by two German doctoral students based in London in 2007. Its first public version was released in 2008. It won several awards like European startup of the year 2009, TechCrunch Europas "Best Social Innovation Which Benefits Society 2009", and The Guardian ranked it Sixth in Top 100 tech media companies. Mendeley was purchased by Elsevier publishing company in 2013. In September 2013, Mendeley announced iPhone and iPad applications, that are free to install (Wikipedia, 2017).

Mendeley is free reference management and academic social networking software which authorize a researcher to build up and organize his library of citations and PDFs, collaborate online with peers and unearth the current research trends. Mendeley automatically rename PDF by Journal Title, Author, Year etc. by fetching it online. It can also organize PDF into multiple files. It is maintained and managed by Elsevier and provides free storage of up to 2GB of files. Mendeley Desktop can support Windows, Mac and Linux.

V. FEATURES OF MENDELEY

TABLE 1 MAIN FEATURES OF MENDELEY (RACHEL, 2014)

FEATURES	MENDELEY
Developed By	Ph.D.Scholars, Acquired by Elsevier in 2013
Year of Development	2007-2008
License	Proprietary
Cost	Free for basic account, some cost for more online storage space
Synchronization	Can synchronize data across all devices
Accessibility	Can be used online and offline, with desktop installation required on an individual computer for offline access.
Operating System	Compatible with Windows, Mac and Linux Operating System
Browser	Any
Storage	Unlimited local storage; 2 GB on Mendeley Web
Word Processor Compatibility	MS Office, Open Office, Latex
Export File Formats	BibTex, Endnote/Refer/BibIX, Medline and RIS, Endnote XML.
Import File Formats	BibTex, Endnote/Refer/BibIX, RIS, Browse Bookmarks
Search full text of PDFs	Yes
Attachment	Attach associated files (PDFs etc) and Highlight and annotate PDFs.
Citation Styles	APA, Chicago, Harvard, MLA etc. 6781 styles (http://www.mendeley.com/citationstyles)
Database Connectivity	ArXiv, IEEExplore, PubMed and many more

VI. HOW TO WORK WITH MENDELEY

Mendeley can be used in following two ways (www.resources.mendaley.com)

1. Mendeley Desktop: Mendeley Desktop is the downloaded part of the software installed on computer.
2. Mendeley Web: This is the Mendeley website where user can access the web version of the library, edit

personal profile and search for papers, groups or people. Mendeley's social features can also be used.

A. Creating Personal Digital Library

For creating own library articles can be dragged and dropped into Mendeley Desktop Window. The software will automatically extract the details for the document and create the library entry like author, title, year URL etc. The articles can also be added through File menu as individual files or even folders containing multiple files. If the user has

already created personal library in other softwares like EndNote, Zotero etc, it can be imported in Mendeley.

A number of default filters are available to organize articles like (a) Recently Added, (b) Recently Read, (c) Favorites, (d) Needs Review, (e) My Publications and (f) Unsorted etc.

B. Read, Search and Annotate Documents

All the documents added in Mendeley software can be opened through its PDF reader and there are many features, very useful for researcher. A reference with an attached PDF will display a small PDF icon next to its listing in Mendeley Desktop. Either click on the PDF icon, or double click on the reference listing, to open Mendeley's PDF Reader.

1. Text select software – use this software to select text within document. You can use this to copy and paste relevant passages, or to apply highlighting.
2. Pan software – use this software to navigate around the document. Click and drag to scroll through the document.
3. Note software – use this software to create notes at specific locations within the document – sometimes called 'sticky notes'. Click wherever you want the note to appear. See number 11 for an example of a note within a document.
4. Highlight software – This feature can be used to apply highlighting to text within the document. Use the dropdown menu that appears next to the software to switch between text-based highlighting and rectangle-based highlighting. It is useful for images, graphs, charts, or large sections of text.
5. Color selection – Mendeley supports highlighting in a number of different colors. This menu can be used to select the currently active color. Notes and highlighting can be done by using different colors.
6. Zoom – It can be used to zoom into and out of the PDF.
7. Sync – This feature is used to force Mendeley to perform a sync. This will push any changes you've made to your library up to the cloud for storage making them available on other devices and computers.
8. General notes – It is used to make notes on the current document. These are not located to a specific position, unlike 'sticky' notes.
9. Tabs – Each document can be opened for reading through this tab. It can be switched back and forth between documents by clicking on each.
10. Highlighted text – The desired portion of text of any article can be highlighted in multiple colors. Right click on a passage of highlighted text to modify or remove the highlighting.
11. Note – Notes within the document will be represented by small icons. Click the icon to reveal the contents of the note.

C. Reference Management

Once the library is created, the articles can be cited and referred within Word and Open Office with ease. The citation plug-in should be installed, after installation it will appear in software bar in MS-office that will allow citing a document, generating a bibliography, or manually editing entry, saving time and effort. A number of build-in citation standards are available like APA, MLA, and Harvard Style etc. The references can be created within the body of main text and in the last of the article as bibliography. All this can be done in an automated way. This is a very important feature of Mendaley which saves plenty of time of researcher.

The citation can also be created in LaTeX documents.

D. Sharing the Documents

Mendaley can also be used as a social networking website for showcasing academic contributions. Groups like public and private can be created and any member from the group can add documents. Members can be invited to join and share documents (Manual, 2017).

VII. CONCLUSION

Reference management softwares are quite helpful for researchers and academicians in creating and organizing their lists of references in specific formats for preparing manuscripts and bibliographies. Almost all the citation styles are covered in Mendeley. It can be synchronized with an online account which can be edited. Mobile applications for iPad, iPhone and other smart-phones are also available for Mendeley. Multimedia information like URLs+snapshots, video, images etc. can be saved in Mendeley. All the data is safely stored in Mendeley servers, which will be never published or shared, unless the user shares the data with other researchers. Mendeley is most popular reference management software due to its user-friendliness.

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