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PubMedAlertMe - Standalone Windows-based PubMed SDI Software Application

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Abstract

PubMedAlertMe is a Windows-based software system for automatically receiving e-mail alert messages about recent publications listed on PubMed. The e-mail messages contain links to newly available abstracts listed on PubMed describing publications that were selectively returned from a specified list of queries. Links are also provided to directly export citations to EndNote, and links are provided to directly forward articles to colleagues. The program is standalone. Thus, it does not require a remote mail server or user registration. PubMedAlertMe is free software, and can be downloaded from: http://amp.pharm.mssm.edu/PubMedAlertMe/PubMedAlertMe_setup.zip

Keywords

SDI Software; PubMed Alert System; EndNote; Download Citations; E-mail Alert

INTRODUCTION

The volume of research publications added every day to the human knowledgebase on the National Center of Biotechnology Information (NCBI) National Library of Medicine (NLM) PubMed database is overwhelming. Staying current with the most recent research work in a particular field is critical for the success of many scientists.

Selective dissemination of information (SDI) is a service where users are periodically notified with newly available publications related to their interest (Shultz and De Groote, 2003). Mondschein showed that the use of SDI in a research setting increases productivity (Mondschein, 1990). The National Center of Biotechnology Information (NCBI) National Library of Medicine (NLM) PubMed database provides timely abstracts and links to most of the published biomedical research articles available world-wide. Delivering a list of newly available articles specific to a field of interest based on specified queries through e-mail is desired by many PubMed database users (Hokamp and Wolfe, 2004). Commercial and non-commercial systems providing this functionality already exist. Most of these systems are web-based services that require user registration. Some of the systems are not very user friendly, making it difficult for novice users to install and use such systems. Additionally, none of the systems tested contain a feature that permits direct export of citations into the popular citation management tool EndNote, and provide direct links to forward articles to colleagues.

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Currently available SDI web-based systems include Amadeo (<http://www.amedeo.com/>), BioMail (<http://biomail.sourceforge.net/biomail/>), PubCrawler (Hokamp and Wolfe, 2004), PubMed Cubby (<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?DB=pubmed>), OVID (<http://gateway.ovid.com/>), OCLC (<http://www.oclc.org/firstsearch/>) and ScienceDirect (<http://www.sciencedirect.com/>). Amadeo offers search by subject where users must fill out an online form to receive weekly reports. BioMail is a Linux based freely available open source web service that sends e-mails to users with PubMed search results based on their queries entered on a web site. PubCrawler is a perl script, containing a configuration file and a small database. The program searches PubMed and sends e-mails to users with links to articles in HTML format. PubMed Cubby developed by NCBI/NLM is probably the most popular free tool available. OVID, OCLC and ScienceDirect offer web-based systems and require a fee.

PubMedAlertMe is a free Windows based software tool that also intends to help researchers to keep up-to-date with their favorite PubMed queries. The program contains few features that are currently not provided by other tools. The program is a simple Selective Dissemination of Information (SDI) Windows platform software utility that allows users to enter a list of PubMed queries. Once the user configures the program with their queries, a task is scheduled to run either daily or weekly on the client machine, not on a server, as most other tools. The task searches PubMed using the PubMed e-utils URLs (http://eutils.ncbi.nlm.nih.gov/entrez/query/static/eutils_help.html) with the queries specified by the user. If the task finds new matching published papers, the task sends an e-mail alert to the users with a list of the new articles with links. The system advantages over existing services are that: a) PubMedAlertMe is a standalone program that does not require users to register to a web service. b) The return query results contain direct links to export citations to EndNote. c) The return query results contain direct links for users to send article information to their colleagues. The system is also very simple to use compared with existing services.

IMPLEMENTATION

The PubMedAlertMe software system uses the ANSMTP library from eMail Architect developed by AdminSystem Software (<http://www.emailarchitect.net/webapp/smtpcom/>) to send e-mails. The ANSMTP library uses lookup DNS records to send e-mails without the need for specifying an SMTP server. Thus, the program can run independently on a Windows OS client machine without a need for a remote mail server. The PubMedAlertMe system consists of two separate independently running programs. The first is a search queries setup dialog. See figure 1. This program allows users to enter a list of their favorite PubMed queries into a Window's dialog. Up to 200 different queries are allowed. The users also specify the frequency and time of day for the e-mail notifications. The setup screen automatically adds a scheduled task to the Scheduled Task feature in Windows. The scheduled task is linked to the second independently running program called getpapers. getpapers is a command line program that uses the PubMed e-utils (http://eutils.ncbi.nlm.nih.gov/entrez/query/static/eutils_help.html) to search for new abstracts added to the PubMed repository. The searches are guided by the specified queries, stored in the Windows registry, entered from the Windows-based dialog program. If new abstracts that match the queries are found, the command line program getpapers sends e-mails to users in HTML or text formats with links to the abstracts. PubMedAlertMe was written in Visual C++ Version 7.1 using the .NET development environment.

CONCLUSION

PubMed Alert Me is very simple to install and use. The system allows up to 200 queries to be stored which is more than most SDI services, and it is not web-based. Thus, the system is the only freely available software where online registration is not required. The system does not

rely on a remote mail server. Additionally, the ability to directly export citations to EndNote and the ability to directly e-mail alerts to colleagues are additional features not commonly implemented by the freely available web-based systems.

Libraries prefer to provide SDI services to online users because they can track their interests, show-case the usage of their service, develop relationships with users, and advertise. These aspects of web-services may impinge on users' privacy, and thus turn away users from using such services. PubMedAlertMe is ideal for novice users who prefer not to register with an online service, and use a Windows desktop computer that is always on, and have EndNote installed. The program does not provide any help menus or help text, but it is simple enough that such assistance is not needed. PubMedAlertMe has also several disadvantages compared with other systems. For example, the host machine needs to be left turned-on for running scheduled queries tasks, the system only works on Microsoft Windows operating systems, and the links to export citations to EndNote, and the feature that allows forwarding article alerts to colleagues, only work on the client machine that actually ran the search.

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Biography

Dr. Ma'ayan received B.S. and M.S. degrees from Fairleigh Dickinson University in Teaneck, New Jersey, in 1997 and 2001. After working as a Software Engineer for five years (1997–2002), Dr. Ma'ayan earned a Ph.D. from Mount Sinai School of Medicine, New York, NY in 2006. Since 2006, he has stayed at Mount Sinai School of Medicine, in New York, where he was Postdoctoral Fellow and now a tenured-track Assistant Professor in the Department of Pharmacology and Systems Therapeutics. His research interests focus on Systems Biology and Graph Theory.

Fig. 1. PubMed Alert Me configuration dialog. Users can specify the e-mail address which will receive the returned results from the queries. Users can add or remove queries from a list of up to 200 entries. Users can schedule the program getpapers to run daily or weekly at a specified time.