A TOOL FOR REFERENCE LIST GENERATOR

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ABSTRACT

Reference List Generator is a tool to generate reference listings according to publishing styles that is chosen by a user. The five styles provided for are those prescribed by the American Psychological Association (APA), Chicago Manual, IEEE, the Modern Language Association (MLA) and Malaysian Journal of Computer Science. The target users are academicians and researchers who are involved in writing journal articles. RLG is a windows-based application implemented in Visual Basic Professional 4.0 which runs under the Microsoft Windows 3.1 environment platform. It exploits a modular programming model in its development and implementation. It can be incorporated as a tool to generate list of references in any word processor in future.

Keywords : Reference list generator; windows-based application; modular programming.

INTRODUCTION

It is the usual practice in academic writing for authors to refer to works by other writers. This sort of referencing is required when borrowing facts and ideas from a source. It is but ethical to acknowledge another writer's ideas and language. To borrow without proper acknowledgement is regarded as a form of dishonesty known as plagiarism (Hacker,1992).

In the various academic disciplines, writing articles for academic journals require the author to follow certain styles of documenting the sources used. These referencing styles are laid down by the professional associations and editorial bodies that publish academic publica-tions, especially scholarly journals. In many cases, improper style of referencing leads to the rejection of some papers in some journals. This paper describes a system that helps authors of journal articles to generate list of references automatically. The system is called Reference List Generator (RLG). It is a computerized system that produces a list of references according to five particular publishing styles. The styles are of the American Psychological Asso-ciation (APA), Chicago Manual, IEEE, the Modern Language Association (MLA) and the Malaysian Journal of Computer Science (MJCS) published by the Faculty of Computer Science and Information Technology, University of Malaya. The first four styles were chosen because they are frequently used

in a journal writing and the fifth style was included to ease the editorial burden of the Faculty's own journal.

THE ROLE OF CITATION

There are four functions of documenting citation. Firstly, citation is used as a supplement or an alternative to the traditional keyword retrieval. The most highly developed citation indexes are those published by the Institute of Scientific Information (ISI), beginning with the *Science Citation Index* in 1963.

The second function of citation is as an actual document retrieval. Since few libraries or personal collections contain a large fraction of potentially relevant do-cuments, many researchers require some form of remote document delivery such as interlibrary loan. The standard assump-tion of the national interlibrary loan code is that an item will be located if verified in basic bibliographic tools where the code also permit the use of a citation from a known document (James, 1989).

The third function of citation which has been used in the field of bibliometrics and scientometrics is to develop rankings of journals, publishers and authors in va-rious fields. This information can be used to develop a map of the invisible colleges and the influence of new scientific disco-veries (James, 1989).

Lastly, a more immediate and practical application of citation is to determine faculty and researchers' productivity for purposes such as tenure decisions, con-tract renewals and merit salary increments.

METHODOLOGY

The RLG system is developed using Visual Basic Professional version 4.0. Visual Basic is essentially a hybrid of Microsoft QuickBasic and Microsoft's Basic Professional Development System. It is chosen for the following reasons:

- It provides an object-oriented, project-based environment for creating Windows applications and easy maintenance of the program.

- It supports all data types.

- It supports graphical user interface (GUI) on other Windows applications.

- It can be incorporated with the Help Compiler Workshop to design the on-line help system.

RLG underwent five phases of development following the waterfall and prototyping software development metho-dology. The phases comprise:
(a) problem identification or feasibility study;
(b) analysis of user and systems require-ments which also include collecting style manuals;
(c) designing a model of the system on which the menus, generate and preview screens are based;
(d) coding all information collected into Visual Basic and

(e) testing the system to ensure every module works accordingly.

THE FRAMEWORK FOR RLG

The development framework for RLG follows along the five phases mentioned above which will be described in full in this section.

Problem identification

Some authors do not know how to write the references correctly. This may be due to the many referencing styles available. As such authors have to refer the style manual every time they write articles for journals.

The referencing style manuals provide guidelines on how to present bibliographic information in a citation. These rules indicate the order in which the different pieces of bibliographic information should be arranged and the punctuation to be used to separate different types of information. It also prescribes the use of any print attributes to highlight specific pieces of information, such as the use of italics for journal and book titles, and bold for author's name. Convention and practices of style manuals vary from discipline to discipline, from publisher to publisher and from journal to journal.

There are two basic documentation systems that are favoured by different groups of scholars. One of this systems is referred as the documentary-note or hu-manities style. It is favoured in many disciplines such as history and the arts. This style may or may not be accom-panied by a bibliography. The other system is being used by those in the physical and natural sciences and recently by the social sciences and humanities disciplines which is known as author-date system. In this style, sources cited are written in parentheses by the author's last name and the date of publication in the text of articles. In order to complete the brief form of citation within the text, a detailed list of sources in which full bibliographic information is given is required to be given at the end of articles. This sort of sources may be called works cited, literature cited, sour-ces cited or simply references. All refe-rences cited in the text must be included in the reference list. Sample of reference list entries for author-date citation system are as follows :-

Blinksworth, Roger. 1987. *Converging on the evanescent*. San Francisco: Threshold Publication.

Collins, Geoffry, and Matthew Q. Wort-master, eds, 1953. *The collected works of G. Farthington Pennyloss*: G.F.Pennyloss.

Environmental Protection agency (EPA). 1986. *Toxicology handbook*. Rock-ville Md.: Government Institutes.

Besides this, there is another system that employs a numbered list of references cited in the text. The reference numbers in the text are placed in parentheses such as (12) or in square brackets such as [12] or in some medical publications as superior figure, (^{12}). The list of

references is then arranged at the end of articles chronologically by the reference numbers or alphabetically by authors' last names.

Analysis of the systems requirements. The main focus of this phase is gathering the rules of style that will be used by RLG to generate the list. At the end of this phase five styles were considered for inclusion in this system.

The system's design. Based on the information gathered, a hierarchical model of the system was constructed and utilized when designing the menu, input, output and preview screens. The input form (Figure 1) was designed to facilitate the data entry task. There are a number of forms available in RLG to accommodate the various types of sources cited, namely; articles in periodicals, books, parts of a book,

conference proceedings and WWW pages. Each form contains 15 fields which cover the author's name, year of publication, title, editor(s), periodical, conference title, place, publisher and page, to mention a few.

The screen design for the system was divided into different areas to present all the information, identification and messages to user. After considering a good graphical user interface design it has been decided to divide the screen into title, main menu, icons, working and message area. The output was designed to be either on the screen or printout. For fu-ture use output can be saved in a text file.

Figure 2 shows the main hierarchical mo-del and its branches within the hierarchy

Figure 1 Input Form Design

Source Type	
Author	
Year	
Title	
Chapter/Article Title	
Editor	
Periodical	
Conference Name	
Day/Month	
URL	
Issue No.	
Volume	
Place	
Publisher	
Page	

Figure 2 : RLG Structure Chart
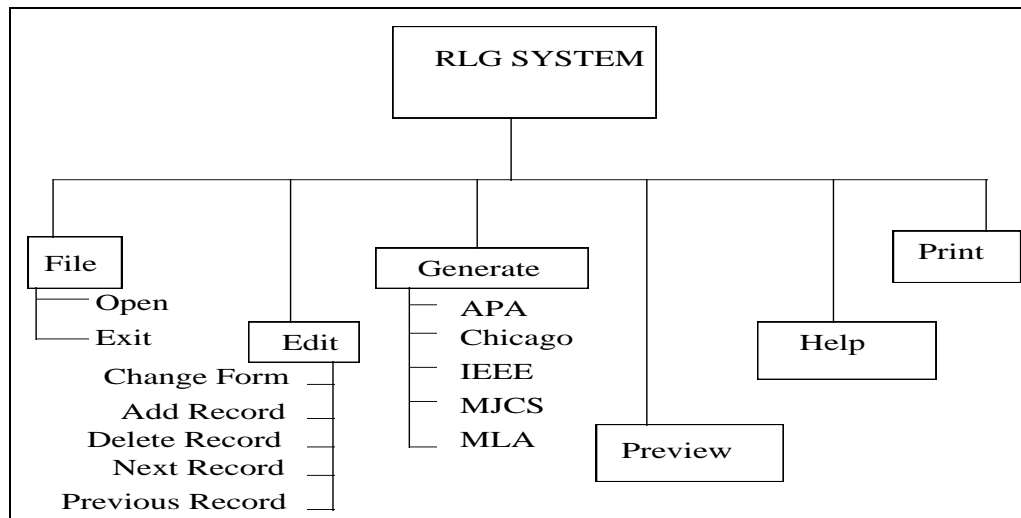
from which the menus and submenus are designed. The RLG provides six main options and several submenus which are included to complete the sys-tem's functional requirement. The six main functions are: file initialisation and exit; record editing functions; generation of listings; preview of listing; help and print functions. Besides, the nonfunctional requirements of the system are also considered.

The system is developed in the English language considering that journal and research papers are mostly written in this language.

New file or existing file can be opened by using the Open function in File menu option. This function will display all records in the form display format. Users are also allowed to exit at any time by clicking the Exit function. In the Edit menu option, users are allowed to change the form used to display record,

add new record at the end of the file, delete the current record, move or display next record and move or display previous record.

The Generate menu option is the core function of the system. This option generates the list of references according to the publishing style definition which is selected. The styles that can be selected are APA, Chicago, IEEE, MJCS and MLA. A listing that is generated can be previewed before it is printed. Here, RLG also allows users to navigate back and forth within the system functions until they are satisfied with the style required. The RLG also provides an on-line help. Users can browse the on-line help by clicking the Help menu option.

The last option provided by the system is the printing option menu, where printed copy of the list of references can be produced for checking and submission.

System implementation. RLG is implemented using a modular programming approach in which the original problem is divided into logical and manageable modules. Interfaces between modules is emphasized during the development of the system. Furthermore, modularity has few advantages which are (Kendall,1988) :

- Modules are easier to write and debug because they are self-contained.
- Modules are easier to maintain as it is limited to appropriate module and not spread over an entire program.
- Modules are easier to understand its function.

**Testing the system.** Each unit within each modules of the system is verified. This is done with the guidance of the detail design described previously. An integration test is carried out for the entire system. Finally, system testing is exercised to verify the security, stress and performance of the system.

DISCUSSION

RLG is developed to be a simple authors' and editors' help to generate a list of references automatically. Visual Basic was selected to develop the whole system as well as the user interfaces. It has a windows environment interface which is easy to use since it uses icon and pull-down menu. An example of the main window of RLG is shown in Figure 3.

The RLG can satisfactorily run on any IBM compatible microcomputer. No sys-

Figure 3: The RLG Main Window
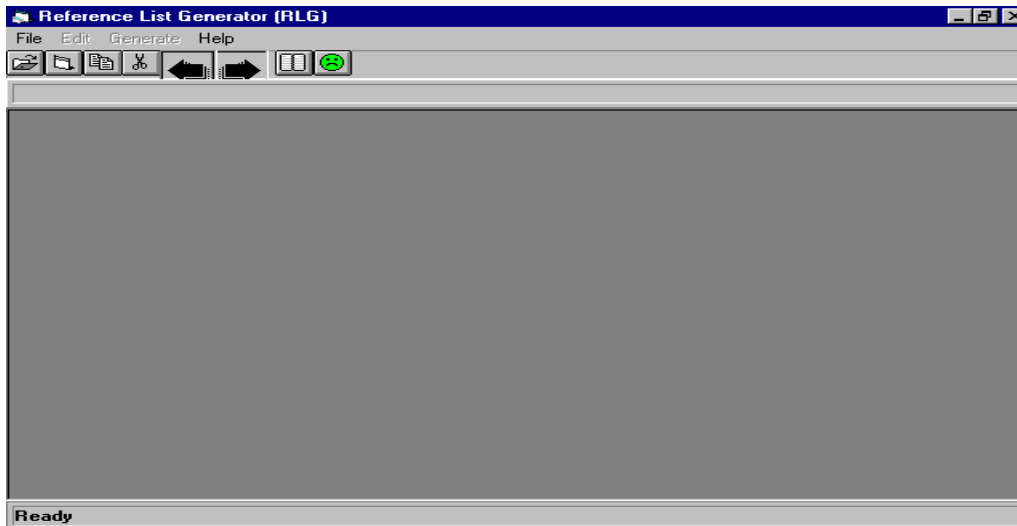
tem or technical personnel is generally needed to maintain the system. The main advantage gained by the journal article writers and editors is that they would be

free from the task of typing or editing the references according to certain format. They only need to type the information about the references in the edit window and select the style they want (Figure 4).

As such authors do not have to worry about how to write the references, instead they may focus their attention to the content of the paper. Besides, authors no longer need to write the complete reference sentences because all the components have been split into its different parts. Authors also do not have to remember the necessary punctua-tion marks laid down by certain referencing systems since RLG assigns the punctuations to references automatically.

After typing all the references they have used and selecting the style (Figure 5), they can preview the output on the screen before printing.

Figure 6 is an example of a screen output generated. Users are free to preview the output generated before they print.

This system is still at the prototype stage and can be further enhanced. For example, in order to make RLG a more useful system, it should be able to be incorporated into any word processor. Journal writers would easily call this tool to generate the reference list as they did the grammar checker available in the current word processor to check their

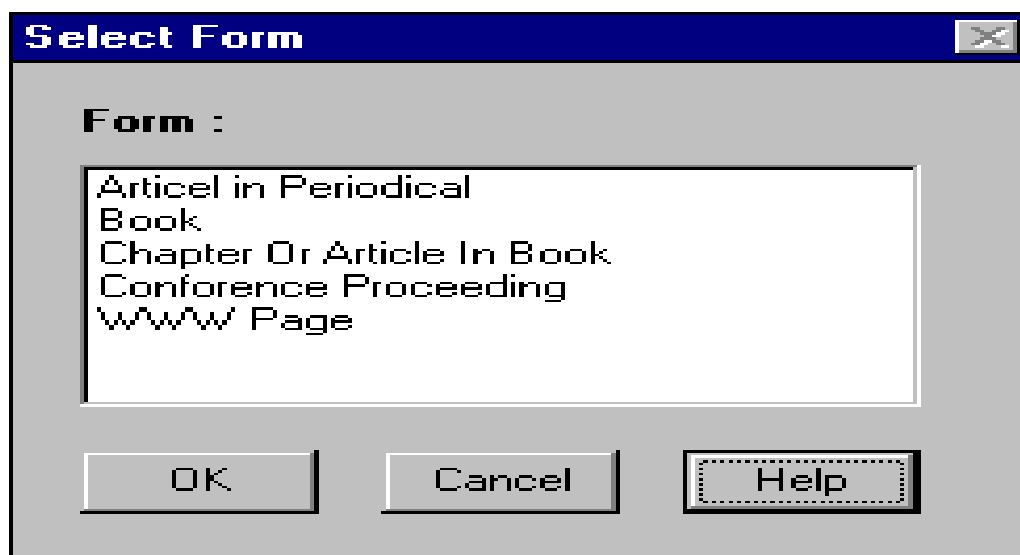Figure 4: The RLG References Style Selection Form Window

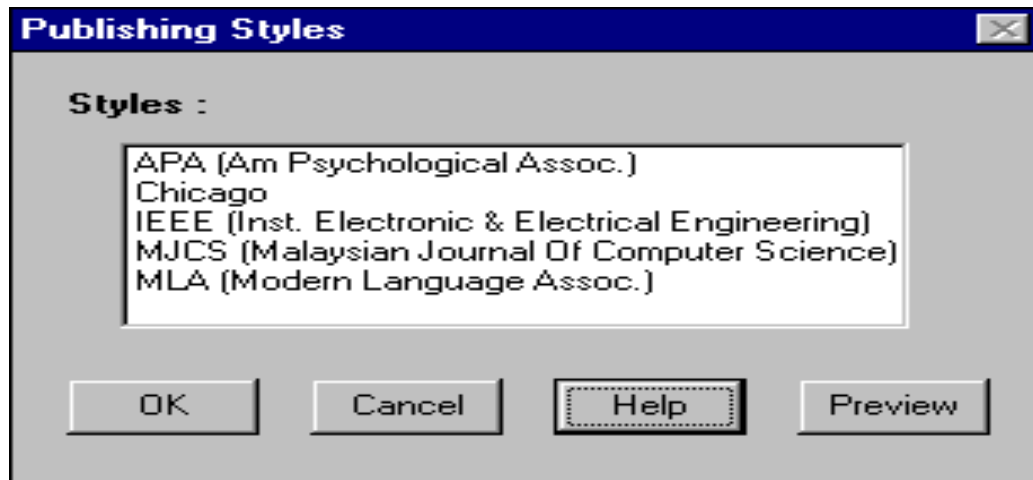

Figure 5: The RLG Publishing Style Window

Figure 6: The RLG Preview Window

sentences. Besides, the system should also include more styles of references listing. These features are being considered for future enhancement to make it a valuable tool.

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