Chapter V
The Fox–Base Approach

ABSTRACT

Chapter II introduced online cocitation counts retrieval using Dialog Classic and citation index files. Certainly Dialog Classic is an attractive alternative in that the user is using the readily available bibliographic databases and retrieval software. The majority of ACA research has used ISI databases and Dialog Classic to retrieve cocitation counts. However, this approach has well-known technical limitations as discussed earlier. They include the issue of Multiple Authorship, Name-Homographs, and Synonyms. This chapter introduces an alternative approach to retrieving a cocitation count from the custom databases through the system we have designed and implemented. Custom database and retrieval systems need time and investment to develop, but they can manage most of the technical limitations discussed. The book presents two other alternative approaches that can be used to retrieve cocitation counts in lieu of using ISI citation index files and Dialog Classic. This chapter introduces the fox-base approach in developing custom databases and the cocitation matrix generation system. The first part is concerned with the design of databases. The second part describes the cocitation retrieval system. We also discuss how our system can eliminate or minimize the technical limitations of the Thomson ISI database and Dialog Classic Software system.

INTRODUCTION

In Chapter II, we have examined online data retrieval using ISI citation databases. One of the well known limitations to the indexing of social science citations index

(SSCI) is the use of first author only. With the current trend of increasing proportion of coauthored articles, it is a critical issue that cannot be disregarded. For example, in the area of management information systems, a study identified a total of 1,573 articles written by 3,411 authors. The articles are from the four major MIS journals published between 1977 and 2002. This study found that only 25 percent of the articles has a single author. Also, over the past two and a half decades, the proportion of coauthored management information systems articles has continuously increased from 40% in 1978 to more than 80% (1992-2002) (Oh, Choi, & Kim, 2005-2006).

Chapter III compared the results of using only first author and all authors. As the results indicated, there are no theoretical merits of using only first author in ACA study. The second critical limitation with SSCI is that only an author's family name and initials are indexed. To make matters worse, some records may contain only a first initial (e.g., Keen P.) and other records may include all initials (e.g., Keen PGW). To overcome these limitations, we have developed a custom bibliographic database and cocitation retrieval systems.

The cocitation matrix generation system accepts two bibliographic databases as major inputs— citing articles database and cited reference databases. Citing sources and the majority of cited references are from journals. Cited references come from books, conference proceedings, papers presented at the meetings without proceedings, doctoral dissertations and masters thesis, working papers, articles from encyclopedia, book chapters in edited books, newspaper articles, reports, personal communications, electronic sources primarily published on the Internet, unpublished working papers, etc. If hard disk storage requirements are not a major consideration, the database can include all unique fields from each source type. For example, a journal article may consist of <u>author</u> (last_name, first_name, middle_name for primary and secondary authors), <u>title</u> of article, <u>journal</u>, <u>Volume</u>, <u>issue</u>, <u>year</u>, <u>date,</u> etc. Book entry may require different fields such as <u>author</u> (last_name, first_name, middle_name for primary and secondary authors), <u>title</u> of books, <u>publisher</u>, <u>city</u>, <u>edition</u>, <u>year</u>, <u>ISBN</u>, etc. Combining all unique fields from each of different reference sources may require more than 100 fields in the database. Most of fields, however, will be "empty". Therefore, there are tradeoffs between storage requirement considerations and the maintenance of accurate field names.

DATABASE DESIGN

Considering storage requirements as the primary factor, the bibliographic database we have created consists of the following structures. It is possible to design multiple tables to create a view (interrelated tables). However, here we introduce

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