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Automatic Detection System of Open Access Predatory Journals: A Unique Application

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ABSTRACT

With the proliferation of Open Access journals and the shift to online publishing, academic publishing has changed dramatically. The number of journals has expanded dramatically as the publishing business has evolved. There are currently more journals than ever before where authors can publish their work. With the numerous advantages of Open Access publication for both writers and readers, credible publishers are currently launching hundreds of new Open Access journals. However, as a result of their increased popularity, less respectable journals have emerged, abusing the author-pay model and jeopardizing the integrity of published research. Some journals, for example, may not feel obligated to follow the principles of good scientific practice, preferring to exploit the academic publication market only as a commercial model for the publishers. Authors are charged publication fees or article processing charges (APCs) by these publications, which are commonly referred to as "predatory journals," but they do not conduct peer reviews or other forms of quality control. The publication of research findings in such publications is not only detrimental to the writers involved but also undermines public trust in scientific research. As a result, this research aims to develop a system for detecting predatory journals which will guide researchers in evaluating a journal or publisher. The application will help users to identify predatory publications, as well as how to determine whether or not a journal is legitimate by checking databases such as SCOPUS. To accomplish the goal of this study, Beall's List and other lists of predatory publishers will be employed.

1. Introduction

With the rise of online publishing and the increasing demand for academic publications, predatory journals have become a concerning issue in scholarly research. These predatory journals take advantage of the open access model, where authors pay a fee to have their articles published and accessible to everyone [1]. Scholarly publication is significant for faculty members since it fulfills the promotion requirement and improves the researcher's, institution's, and country's credibility and reputation [2]. Besides that, universities frequently demand academics and students to publish on a regular basis, and this "pressure to publish" can lead to a range of unethical behaviors [3].

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In most cases, the number of publications is linked to promotions, salary incentives, and degree completion. It does not always take into account the quality of the work which is reflected by the impact factor and reputation of the publishing journal and number of citations [4]. When quantity is prioritized over quality, the result is likely to be poor. For example, national organizations in South Asia appear to favour the publication of a particular number of articles rather than considering the genuine effect of published research in their faculty advancement requirements [5].

The scientific publication has progressed from subscription-based, print-only journals to open-access, publicly accessible internet journals over time. In the early 1990s, open-access (OA) publication became popular [6]. Open-access publishing with different models (including gold, green, hybrid, and platinum or diamond open-access) has gained popularity just a few years after its inception [7]. However, it also causes unethical and "predatory" publishing methods to evolve, turning this academic achievement into a marketing tool for commercializing research [8]. Predatory journals may operate on a one-room and/or one-computer basis, which is detrimental to science [9]. Other than that, they are typically run by individuals or a shady publishing group, and there is no proper peer-review procedure in place [10].

These predatory journals exploit the open access model and undermine the credibility of digital journals that offer free unlimited access. Predatory journals are often mistakenly associated solely with online open access publishing [11]. However, it is important to note that not all online open access journals are predatory. Predatory journals are characterized by their deceptive practices, which include poor peer review processes, rapid publication times and a focus on profit over quality research [12]. One of the key characteristics of predatory journals is their lack of proper peer review processes. Proper peer review is an essential part of scholarly publishing as it ensures the quality and accuracy of research articles [13].

Predatory publishing refers specifically to publishing practices that exploit the author-pays model by “setting up bogus publishing operations and tricking authors into thinking that they are legitimate scholarly publishing outlets” [14]. These journals or publishers abuse the open-access publishing model and are interested in money-making rather than disseminating research. The term “predatory journals” was coined in 2011 by Jeffrey Beall, a librarian from the University of Colorado Denver, who managed the list of “possible predatory” journals on his blog titled Scholarly Open Access [15]. However, the blog is defunct now and has been substituted by Cabell’s International, a scholarly-services firm that provides a subscription-based list of predatory journals.

In response to such journals, Open Access Scholarly Publishing Association (OASPA) was formed. Moreover, certain criteria and tools for detecting predatory publishers and journals have also been introduced. These include Beall’s Criteria for Identification of Predatory Journals and Publishers, World Association of Medical Editors (WAME) guidelines for Identifying Predatory or Pseudo-Journals, Criteria for Receipt of the Directory of Open Access Journals (DOAJ) Seal, and Predatory Rate [16]. However, there are no mobile applications to detect predatory journals that have been developed before. As a result, this study’s objectives were twofold: (i) to develop a web application for detecting predatory journals; and (ii) to determine whether or not a journal is legitimate by checking databases such as SCOPUS. The findings of this study are probably to aid users from publishing in predatory journals.

2. Methodology

The methodology used in this study is a mixed-method where qualitative and quantitative approaches have been applied. The qualitative approach will take place in terms of data requirements and gathering which will be provided in order to proceed with the web application

implementation. It will also include a review of website and web/mobile application design concerning the user interface, usability, and more. Other than that, this technique also employs the skills on the development part especially using RESTful Programming Interface (APIs).

Nowadays, service-oriented architecture has evolved to be the backbone for large-scale integration between different applications and platforms. This concept has led to today's reality of cloud services [17]. Many of the major business platforms are providing their services to end-users and other companies as well. Companies are crafting ways to allow other businesses fast service integration and to get on board quickly in the market. REST (representational state transfer) has emerged as the standard protocol for implementing and consuming these services, which are called RESTful application programming interfaces (APIs) [18-20].

Meanwhile, the quantitative approach is conducted when the implementation and deployment phases take place. In order to make sure that the application meets all the user requirements, the survey will include the model of acceptance towards using this application. This will be a guide to the researcher in terms of feedback and evaluation towards the open-access predatory journal application. For the time being, the paper only concentrated on the qualitative approach which is on the development part. Nevertheless, Figure 1 shows the research flow chart of the overall study.

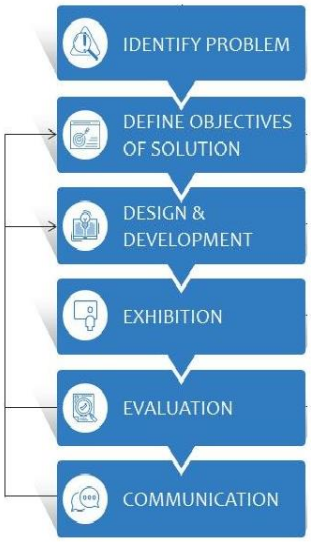

Fig. 1. Research flow chart

In the meantime, Figure 2 refers to the framework for the application that has been developed in the research. In order to implement the application, the Web Application Programming Interface (Web API) approach has been used by using RESTful Web Service. Thus, the content from the Scopus Database can be viewed in the application.

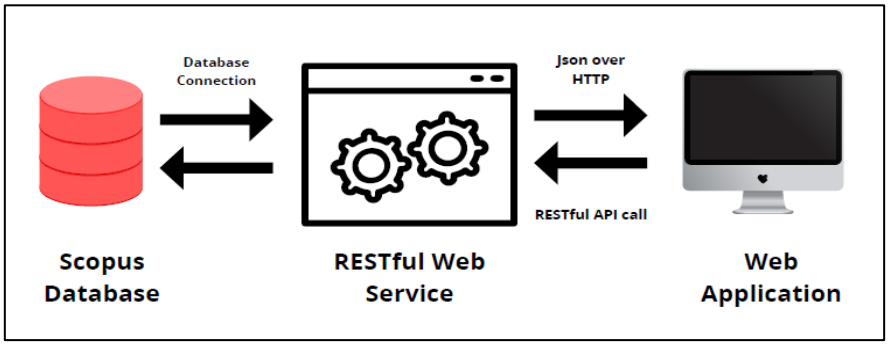

Fig. 2. Predatory journal detector web application framework

4. Results

As a result, Figure 3 shows the main interface of the Predatory Journal Detector application system. The main interface provides a simple interface which focuses the user to click the Start search button in order to start searching articles or papers. The application also can be accessed and viewed at the https://journal-finder.com/.

Fig. 3. Predatory journal detector system

Next, Figure 4 and Figure 5 illustrate the searching results from the search engine. The user has to enter the area of topic which is reflected the article or paper that intends to search. The figures also show the exact number of articles or papers in the Scopus database web application.

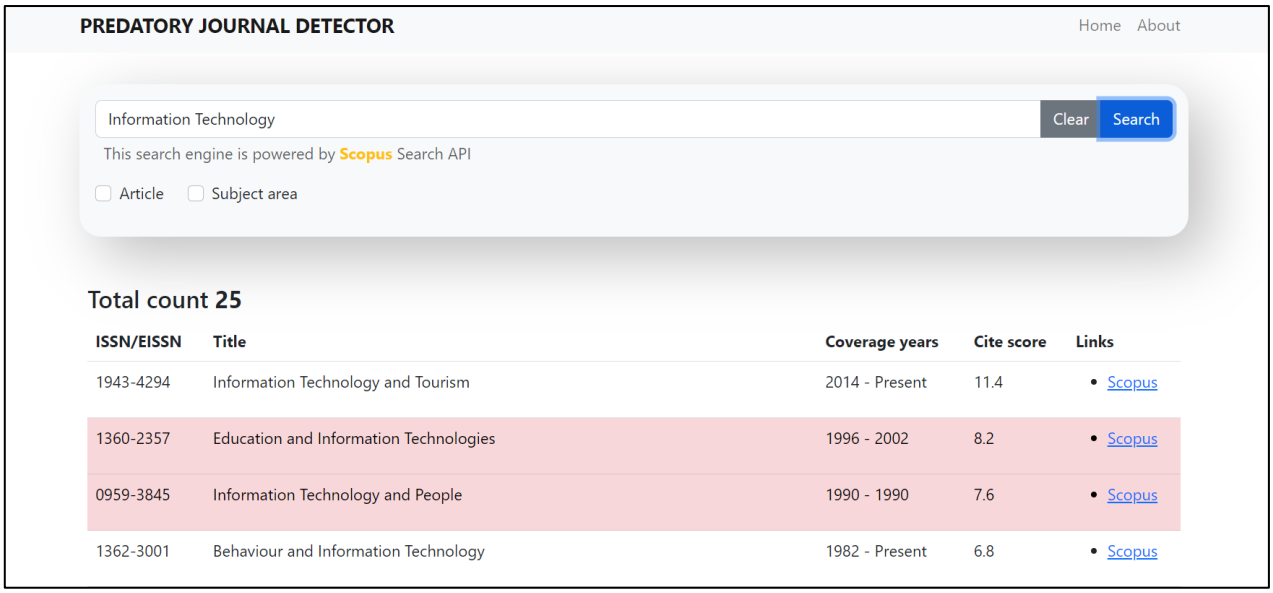

Fig. 4. Searching result example

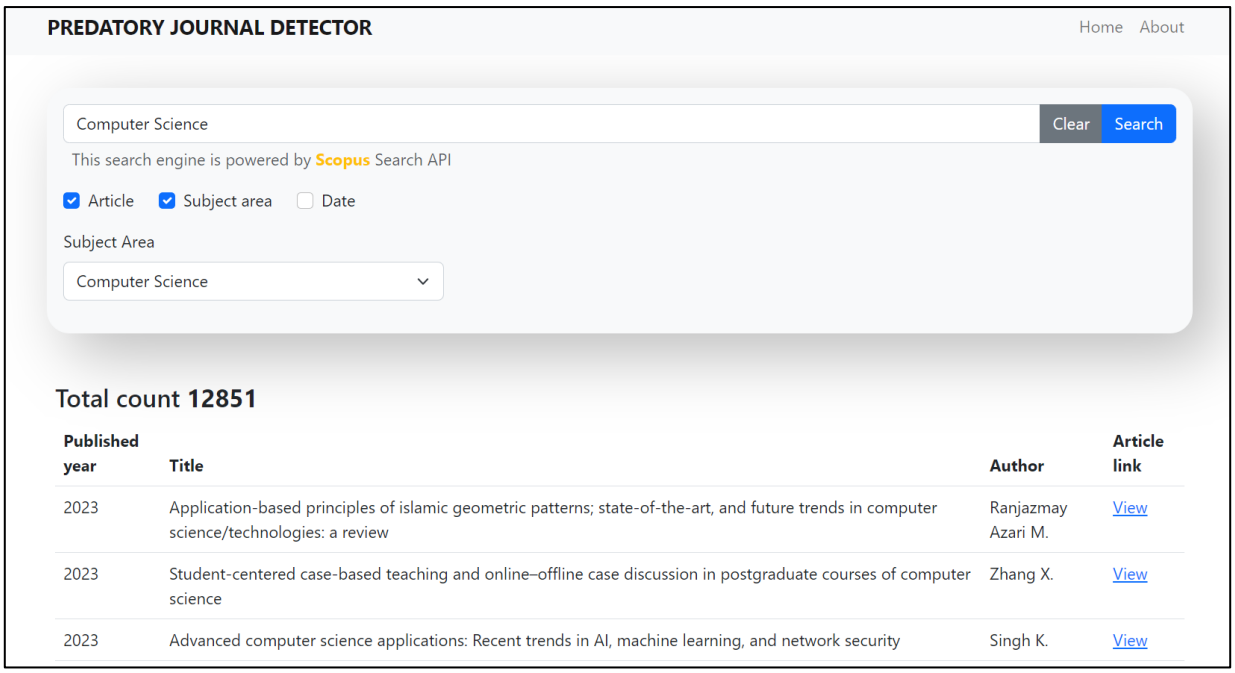

Fig. 5. Searching result example

At the last stage, Figure 6 displays the searching result containing the article or paper (Scopus database) from the previous search step which is the user has to click the article link provided.

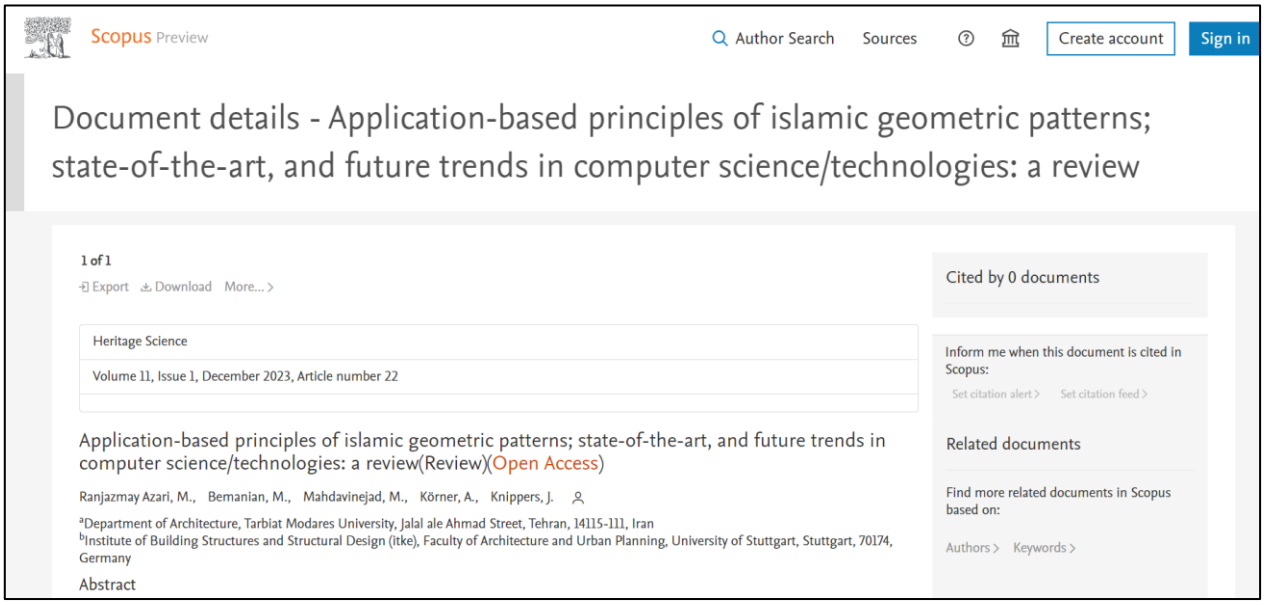

Fig. 6. Searching result: article and paper from Scopus database

5. Conclusions

In conclusion, the finding has shown that the Predatory Journal Detector System has been developed successfully according to their plan and stages. The approach of using RESTful application programming interfaces (APIs) has fully supported the development of the system. Thus, it hopefully can help the user and researcher to find articles and papers from trusted sources in this case which is focused from Scopus database. Finally, the results from the study and this research have met the objectives stated.

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