



ScholarsAid: A Personalized Scholarship Web Application based on Web Scraping

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ABSTRACT

In today's digital age, finding relevant scholarship information has become a major challenge for students. The current process of identifying and selecting scholarships is both time-consuming and decentralized. To address this issue, this paper presents the fundamental design and implementation of a web application that leverages web scraping techniques to provide personalized scholarship recommendations to students. The web application is developed using the Rapid Application Development (RAD) model and covers the entire process from data collection through to evaluation of the personalized scholarship recommendations. The application allows students to easily search and filter scholarships based on their specific needs or preferences, and utilizes a matching algorithm to provide the most relevant scholarship options. The web application offers functionality for students to search and filter scholarships to suit their preferences or needs and the most relevant scholarships are provided based on matching algorithm. With this web application, students can make more informed decisions and take a step towards achieving their academic goals. The development of this web application has the potential to revolutionize the way students search and apply for scholarships. Moreover, the application can also benefit scholarship providers by making the selection process more efficient and targeted. In addition, the web application can contribute to the broader social and economic benefits of higher education.

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1. Introduction

Scholarships are a beacon of hope for students who dream of pursuing higher education without worrying about the financial burden. With the economy struggling, many students are finding it harder to make ends meet and are left with limited options to fund their education. That's where scholarships come in to provide financial aid to help alleviate the financial pressure on both students and their families. In fact, scholarships have evolved to become more than just a source of financial assistance; they now offer students a chance to access high-quality education that can open doors to lucrative careers[1]. Scholarships are especially vital for students from low-income families, providing them with the opportunity to fulfill their academic potential and achieve their career aspirations.

However, the current process of finding and applying for scholarships can be time-consuming and overwhelming. Students often struggle to identify relevant scholarships that match their qualifications and interests while scholarship providers are inundated with large volumes of



unqualified applications. To address these issues, personalized based system for different kinds of application domain such as food[2], health [3] , fashion[4] and information privacy [5] have emerged as a promising solution and useful for scholarship recommendations. By providing tailored scholarship options based on a student's unique qualifications and preferences, personalized recommendations can help students more efficiently and effectively find the scholarships they need to pursue their educational goals. While the existing web applications for scholarship have made it easier for students to find the information and apply scholarship, there are many with lack of personalization options and difficult to navigate. This can be particularly challenging for students who may be new to the scholarship application process or who have limited experience with technology.

Web scraping [6] techniques can play a key role in developing such personalized scholarship recommendations. By automatically extracting scholarship data from various websites and databases, web scraping can quickly and efficiently compile a large database of scholarship options. This data can then be processed and analyzed using algorithms to generate personalized recommendations for individual students.

The contributions of this paper are two-folds. Firstly, it presents the essential design and implementation techniques required for successful scholarship web scraping. Secondly, it showcases the development process of a personalized scholarship web application named as *ScholarsAid* that is powered by the web scraping collections.

2. Literature Review

Reported in statista website (<https://www.statista.com/statistics/794845/students-in-public-higher-education-institutions-by-gender-malaysia/>), the number of students enrolled in public higher education institutions in Malaysia has surpassed 700,000 from 2012 to 2019, with no indication of a decline in subsequent years. The high demand for higher education is a challenge for countries worldwide, as it is difficult to meet the needs of students and their families. This challenge is particularly significant in both developing and developed countries, as the rising costs of higher education have led to a situation where the public sector may either be unwilling or unable to meet the demand[7]. The high demand for higher education has led to a situation where students are increasingly turning to private institutions to fulfill their educational needs. However, private institutions often charge exorbitant fees, making higher education inaccessible to many low-income students[8]. This can exacerbate existing inequalities in society, where only those who can afford to pay for higher education can access it. Scholarships can play an important role in resolving issues of inequalities in society by providing access to higher education and opportunities for academic and career success to individuals who may not have had these opportunities otherwise[9]. A scholarship information system that provides personalized scholarship recommendations can also help address issues of inequality in society by ensuring that all students have access to scholarship opportunities that are relevant to their needs and qualifications. However, there are limitations to current scholarship information systems, such as the lack of modern web applications that compile and deliver scholarship information for students to make informed decisions[10]. These limitations can result in certain students not having access to relevant scholarship opportunities, perpetuating existing inequalities in society. A personalized scholarship information system that uses web scraping techniques to collect data and match scholarships to students' preferences and needs can help address these limitations and promote equity in scholarship access. While there are limitations to current scholarship information systems, a modern and efficient scholarship information system can help institutions manage scholarship programs more effectively and ensure that all students have access to relevant scholarship opportunities.

Web page data extraction or web scraping involves the process of retrieving data from web pages that have an unstructured or semi-structured format[11],[12]. Extracting data from such pages can be challenging for data extractors. However, applying various data extraction techniques makes it easier to transform unstructured or semi-structured data into structured data. Through the extraction process, unstructured data is transformed into structured data using algorithms and processes and can be stored in a central database for various purposes.

The Internet is one of the most popular sources for finding raw data that is readily available. To retrieve data from the web world, which has a strangely structured format, web scraping techniques such as digital wrappers[13], HTTP programming[14], and others are utilized. These techniques enable data extraction from web pages, which is then transformed into a structured

format. The data obtained can be used for various purposes such as statistical analysis, research, and data mining.

In recent years, researchers have been making significant strides in the design and implementation of web scraping systems. Several related works using web scraping techniques have been discussed in this project. One of the works is by [15], who developed an "Exploiting Filtering" approach with web scraping for smart online shopping. This work utilized web crawling and scraping techniques to find the best deals on five different e-commerce websites. The front end of the system is designed using HTML and CSS, while PHP is used on the back end. The outcome of this work is a PHP-based web application that allows users to access and select the lowest-priced five instances of a product from several web domains advertising that product.

Another related work is reported by [16] that explains how machine learning can be used to predict the performance of a stock. For more accuracy, the input parameters include open, high, low, close rate, trading volume, Price to Earnings Ratio, MA, and MACD. A machine learning technique called Random Forest Regression was developed in the Python programming language and was used to forecast the stock market. The method was used on historical stock data, and web scraping techniques were utilized to capture current stock market data.

Researchers in [17] have contributed to the advancement of web scraping technology by developing a numerical, real-time web tracking and scrapping strategy. This strategy has been applied to analyze COVID-19 datasets, which contain enormous amounts of data that require data visualization to identify trends, patterns, and outliers. The study utilizes data analytics, a technique for analyzing raw data and drawing insights from it, to explore and analyze the COVID-19 data. The authors also discuss various web scraping methods for obtaining COVID-19 data from the internet and utilizing exploratory data analysis (EDA) for data exploration and analysis. The development of this strategy is significant as it enables researchers and health professionals to obtain real-time COVID-19 data, which is essential for tracking and monitoring the spread of the disease and formulating effective public health interventions.

There are many studies that have used web scraping techniques to extract scholarship information from the web. For example, a study by [18] conducted a review of published service scholarship as one of the data sources for web scraping. Web scraping to conduct web semantic analysis has been proposed by [19] based on OpenCitation, which is an infrastructure organization for open scholarship dedicated to the publication of open citation data as Linked Open Data using Semantic Web technologies. A system called E-scholarship system for UiTM Cawangan Melaka has been developed by researchers to enable a centralized portal for or gathering and providing scholarship information[20]. Web scraping is used in this work to obtain scholarship information from desired websites and store it into the system's database

These studies demonstrate the usefulness of web scraping techniques in extracting scholarship data from various sources, which can be used for analysis and decision making. However, limited details implementation is provided by these report that only focusing on the results and findings. Details implementation provided in this paper is useful for allowing research replication by other researchers.

3. Methodology

3.1 The system architecture

Figure 1 shows the architecture of the web application for personalized scholarship. It composed of two system components. The first component is database that stored the processed data from web scraping while the scholarship web system is the second component. Web scraping is the process to automatically extracting data from websites. The fundamental steps are identifying the target websites, analyze the structure of the websites, write the scraping codes with web scraping tool, extract the scraping data, cleaning and process data to be stored in database.

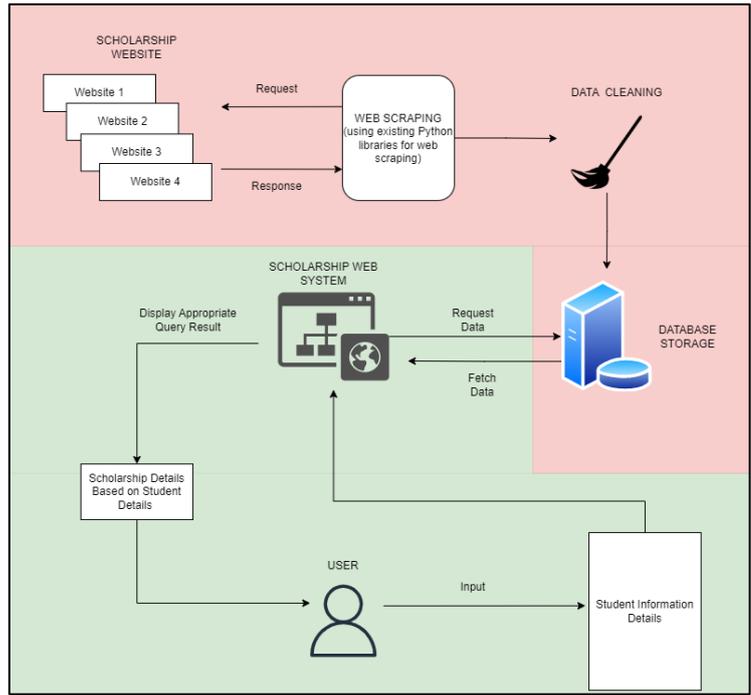


Figure 1. System Architecture

Before the scraping process, pre-built web scraper extension will be used in order to extract data from the desired scholarship website. *WebScraper.io* provides pre-build web scraper extension that allows users to select the data they want to extract using a point-and-click interface. The tool automatically detects the structure of the website and generates selectors to extract the data. Users can also edit and refine the selectors as needed to ensure that the data is extracted correctly. *WebScraper.io* can be installed by using Chrome Web Store to search the *WebScraper.io* and can be clicked to be added to the Chrome button. *WebScraper.io* has a user-friendly interface with three main sections; *Sitemap*, *Selector* and *Preview*.

A sitemap is the website to be scraped with information that displays a tree-like structure of the website, where developers can easily navigate the sitemap and select the data they want to scrape by clicking on the relevant nodes (Refer Figure 2). The selector section as depicted in Figure 3, allows users to choose the specific elements of the website to be scraped by clicking and highlighting them. The tool generates a selector based on the user's selection, which can be edited and refined as needed. The preview section displays the scraped data in real-time as users make their selections. This allows users to see how the data will be formatted and identify any errors or issues with the scraping task.

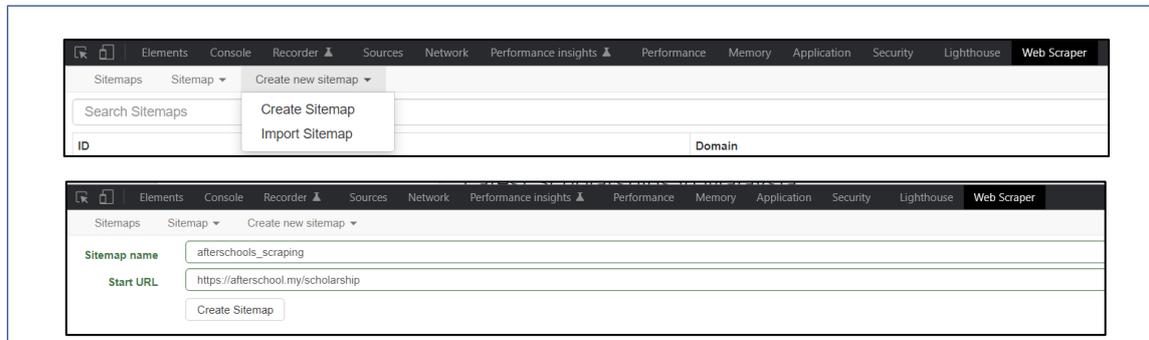


Figure 2. Creating Sitemap

By using Selector component, the parent elements of the target website that needs to be included in the created Sitemap can be setup. In the website for the scraping process, we need to setup by selecting the *parent* and *child* cards that refer to the structure of the data being scraped. Red box in Figure 3 shows the *parent* element card to be scrapped in the Afterschool sitemap.

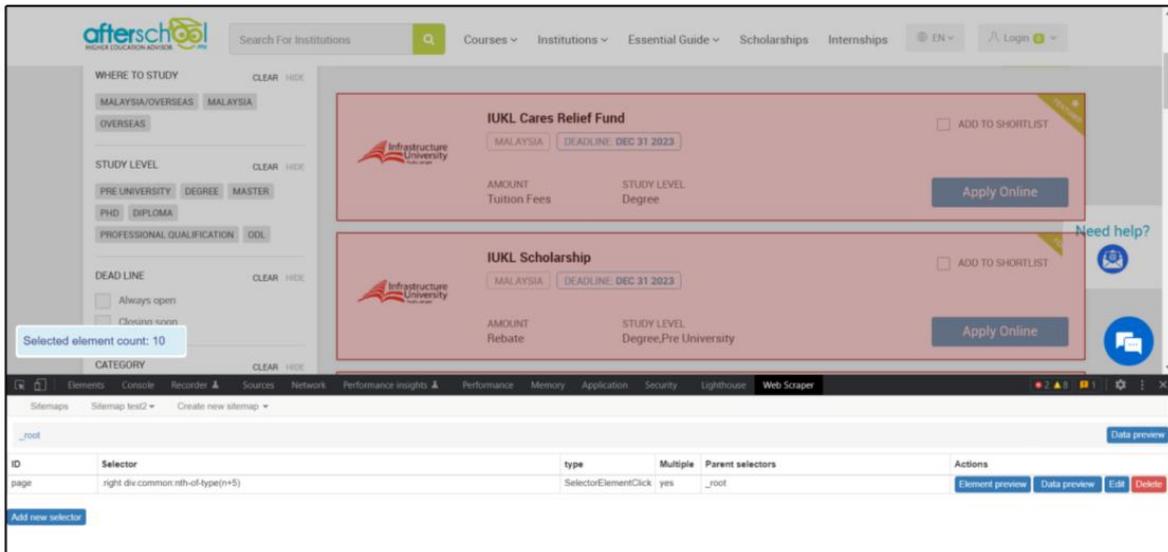


Figure 3. Selecting *parent* cards

A *parent* card represents a container element that contains one or more *child* cards. By identifying the parent-child relationships between elements on the webpage, the hierarchical structure that reflects the way the data is organized and then scrap accordingly can be created. For the scholarship web scraping, the *parent* card can be the entire scholarship page, while the *child* cards would represent individual pieces of information, such as the scholarship name, dateline, study level, and the amount of fees. Each child needs to be added to the parent card as seen in Figure 4 and Figure 5.

After the web scraper have been setup, the web scraping process begins with finding the available scholarship in the website. The scraping data can be viewed in html form as depicted in Figure 6, which needs to be converted to excel by using *Python* codes and *BeautifulSoup* library (Refer Figure 7).

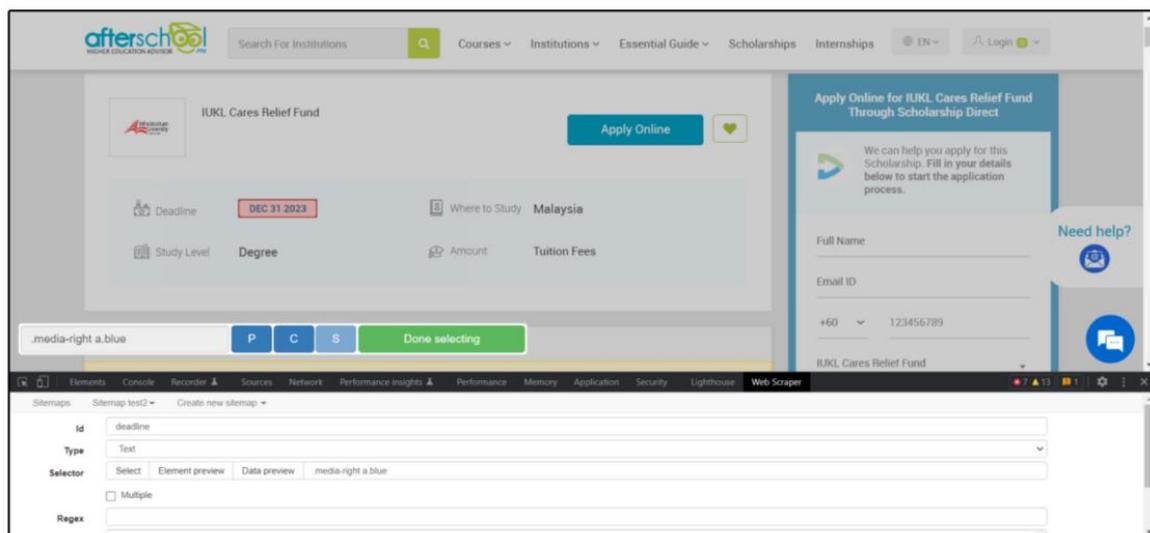


Figure 4. Selection of single *child* card

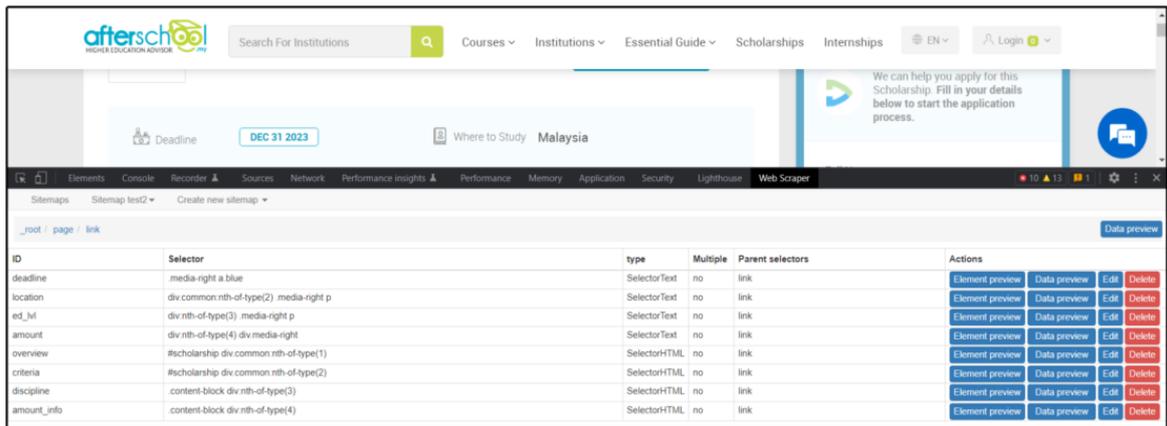


Figure 5. Selection of different *child* cards

web-scraper-order	web-scraper-start-url	link	link-nf	deadline	location	ed_id	amount	overview	criteria	discipline
1	https://afterschool.my/scholarship/morac-university-malaysia-high-achiever-award	https://afterschool.my/scholarship/morac-university-malaysia-high-achiever-award	https://afterschool.my/scholarship/morac-university-malaysia-high-achiever-award	Dec 31 2023	Malaysia	Degree	up to RM 5000 Partial Scholarship	<p>Overview</p> <p>Morac University Malaysia offers new students looking for undergraduate degree a scholarship worth up to RM 5000 under the award per semester. The scholarship is provided to students who have excellent academic and background in exchange for high achieving academic results.</p>	<p>Criteria</p> <p>Applicant must meet all the below requirements:</p> <p>Eligibility for the MORAC High Achiever Award: you must meet the following criteria:</p> <ul style="list-style-type: none"> Students must have completed the following programs before entering UoM: IGSEE A Levels: 3A4 STPM: 11 points Australian Matriculation: Emer 4-5B Canadian Matriculation: 3-6A International Foundation Year (IFY): 60% International Baccalaureate: 38 UIC: 3 A's Canadian Matriculation: 3-6A Section Vantage Asia (SVA - Indonesia): 2 A or 2 GPA 3.00 Indian Senior Certificate (ISC): 80% Senior Secondary School Certificate (Sanskrit): 90% <p>Maintenance of the Scholarship:</p> <ul style="list-style-type: none"> Must maintain the maintenance score which will be stated in your offer letter You must enrol a full load of 24 credit point per semester (credit points per unit) You are not permitted to change courses during the progression of your stay in UoM Must complete the course within the full duration of your undergrad program. No extensions will be permitted with the holding of the scholarship You are not permitted to take on other financial assistance at any point during your study in UoM 	<p>Preferred Discipline</p> <ul style="list-style-type: none"> All undergraduate courses except the Bachelor of Medical Science and Doctor of Medicine and Bachelor of Pharmacy
2	https://afterschool.my/scholarship/ulm-university-of-applied-business-scholarship	https://afterschool.my/scholarship/ulm-university-of-applied-business-scholarship	https://afterschool.my/scholarship/ulm-university-of-applied-business-scholarship	Dec 31 2023	Overseas	Degree Diploma Master PhD Pre University	Partial Scholarship	<p>Overview</p> <p>ULM offers the students the opportunity to develop as a personal and professional level and advance their career through flexible, innovative oriented study. We are particularly looking for professionals and entrepreneurs who would like to grow as a personal and professional new, social entrepreneurs. Our core values: That's why we design our programmes and courses to be as flexible and innovative as possible, but without sacrificing the usual high UoM quality.</p>	<p>Criteria</p> <p>NA</p>	<p>Preferred Discipline</p> <ul style="list-style-type: none"> Accounting Business Administration Degree Business Degree Certificate Diploma Business Degree PhD Foundation (Pre-U) Health Science Degree Postgraduate Certificate Postgraduate Diploma Professional and Vocational Summer Courses
3	https://afterschool.my/scholarship/tes-tes-universiti-ten-scholarship-business-2023	https://afterschool.my/scholarship/tes-tes-universiti-ten-scholarship-business-2023	https://afterschool.my/scholarship/tes-tes-universiti-ten-scholarship-business-2023	Dec 31 2023	Malaysia	Degree Diploma Master PhD Pre University	up to 50% Partial Scholarship	<p>Overview</p> <ul style="list-style-type: none"> Being Higher Education Scholarship Being Staff Loyalty Scheme Being Small Staff Loyalty Scheme 	<p>Criteria</p> <p>Applicant must meet all the below requirements:</p> <ol style="list-style-type: none"> The applicant must be enrolled as a full-time student with IES/IIUM/University College. Exemptions are given for the Postgraduate diploma programme. The award is applicable for studies at IES/IIUM/University College only. The award is applicable only to the programme as stated in the Scholarship Award Letter. Any request for change of programme may result in the award being terminated. 	<p>Preferred Discipline</p> <p>NA</p>

Figure 6. HTML web scrap data

```
In [23]: #Import the necessary libraries
from bs4 import BeautifulSoup
import requests
import csv

with open("output.html") as file:
    html = file.read()

# Use the BeautifulSoup library to parse the HTML
soup = BeautifulSoup(html, "html.parser")

#title = soup.find("td").text
#titles = soup.find_all("tr")

#Find the table in the HTML
table = soup.find("table")

# Extract the data from the table
data = []
rows = table.find_all("tr")
for row in rows:
    cols = row.find_all("td")
    data.append([col for col in cols])

#Save the data to a CSV file
with open("afterschool.csv", "w", newline="") as file:
    writer = csv.writer(file)
    writer.writerows(data)
```

Figure 7. Convert HTML to CSV file with Python

To display the CSV data into a web application, the data needs to be converted to a database by using *phpMyAdmin*. This is a free web-based application written in PHP language that provides a graphical user interface (GUI) to manage and administer MySQL as depicted in Figure 8. The web application of scholarship has been developed based on the database that has been designed with structured tables namely *scholarship*, *account of users*, *personalization* and *apply*. *ScholarsAid* is the name of the web application for personalized scholarship.

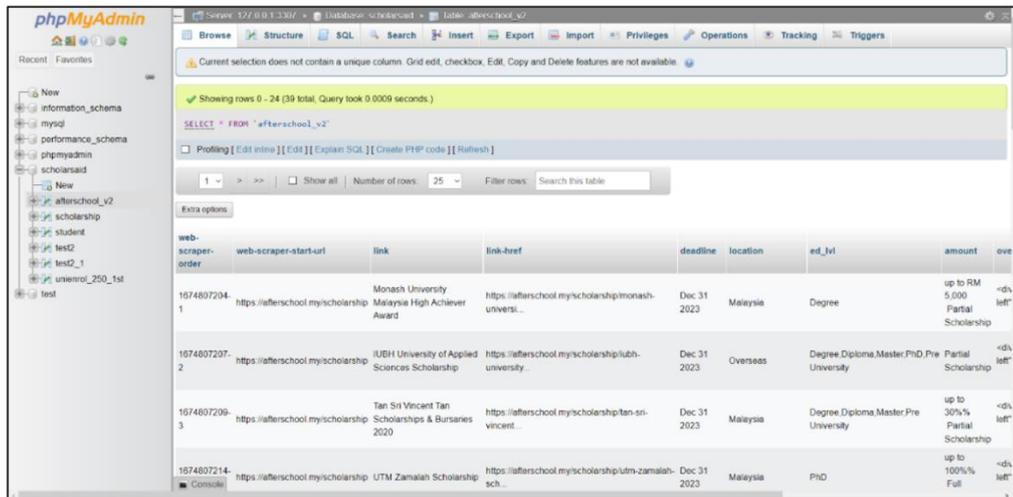


Figure 8. Convert CSV to database

To use the web application, users need to register an account, which the user' details are recorded. The flowchart for registering an account and to use the web application can be seen in Figure 9. Based on the input data of each user account, personalization of scholarship can be filtered through the processes depicted in Figure 10.

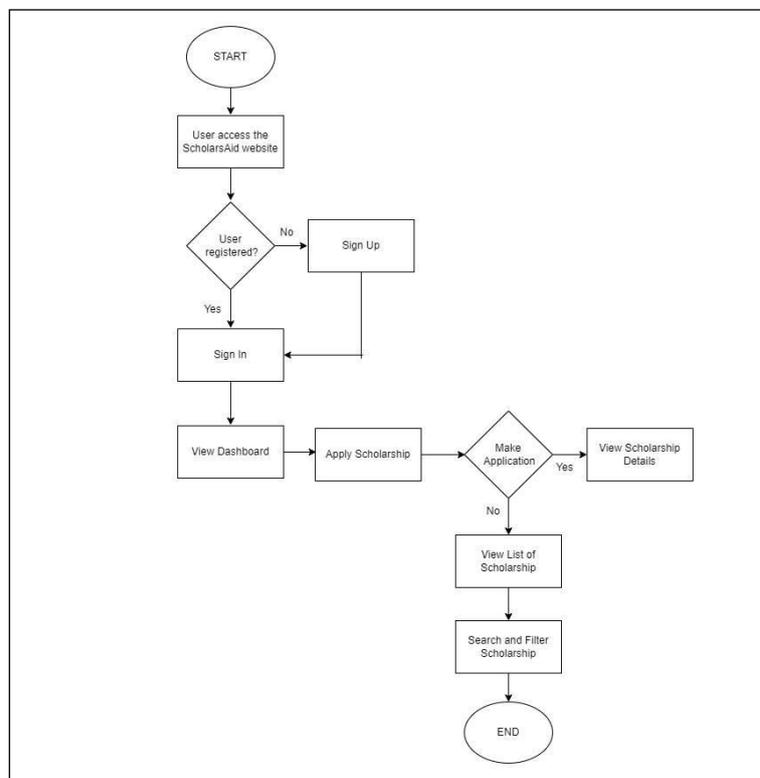


Figure 9. Flowchart to register and view dashboard

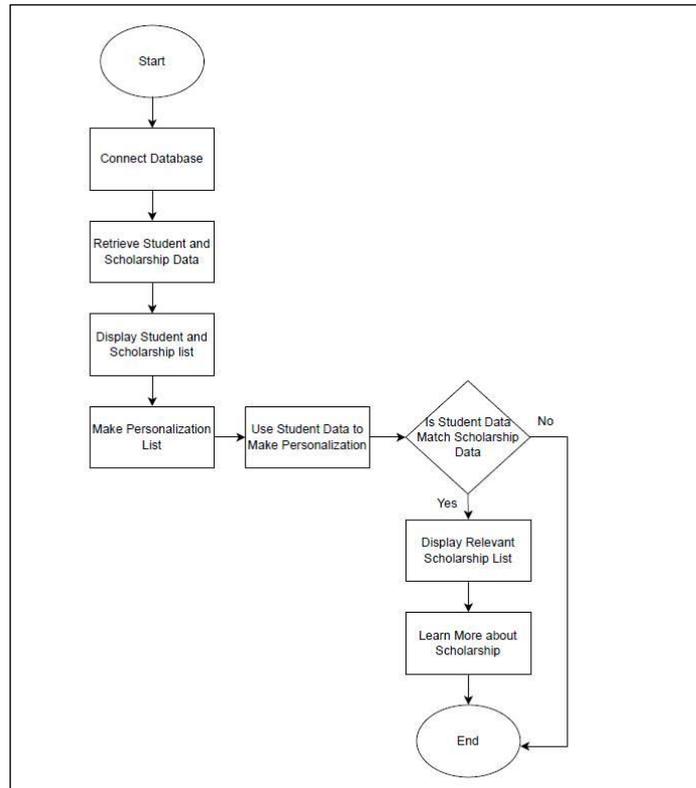


Figure 10. Flowchart to filter scholarships

4. Results and Discussion

4.1 The interfaces

To support users with easy and efficient scholarship searching, GUIs are provided for the web application. The main interface of the web application is depicted in Figure 11, which provides link to users to sign in to retrieve the personalized scholarship. Users need to enter the relevant data through the online form and the user dashboard will be displayed as seen in Figure 12.

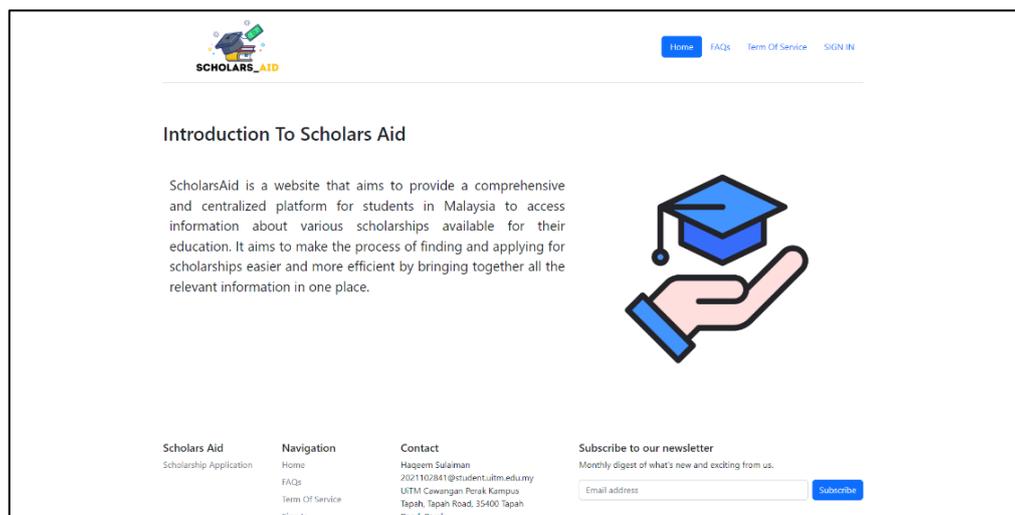


Figure 11. Main interface

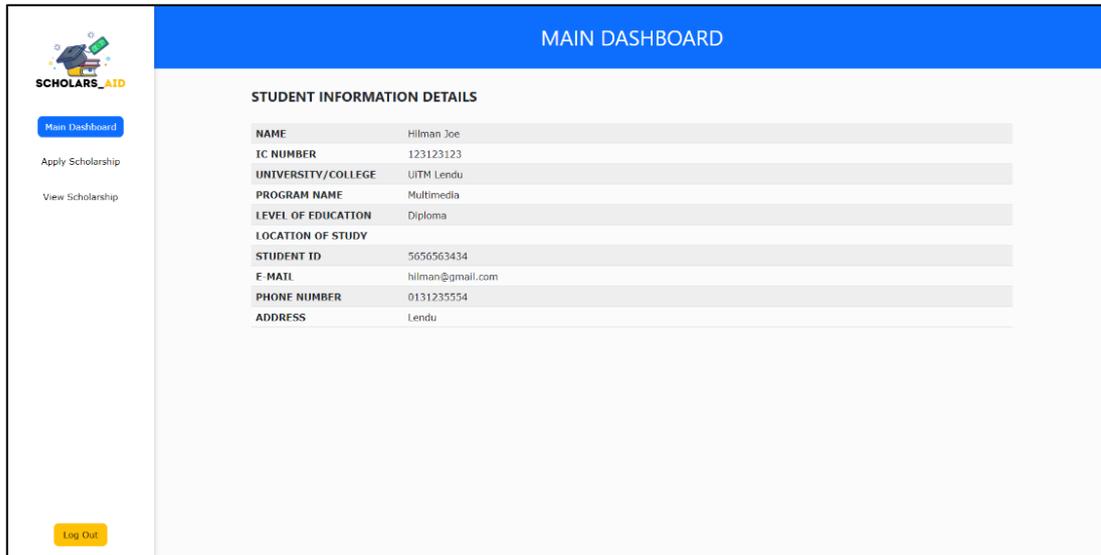


Figure 12. Main dashboard

To apply scholarship, there is blue button to be clicked to direct user to the scholarship lists personalized to the user background. Additionally, users can sort the list either by level of education or location as depicted in Figure 13. To provide more scholarships in the lists, only the important data is provided namely scholarship provider, deadline, location (Malaysia, Overseas) and Level of education.

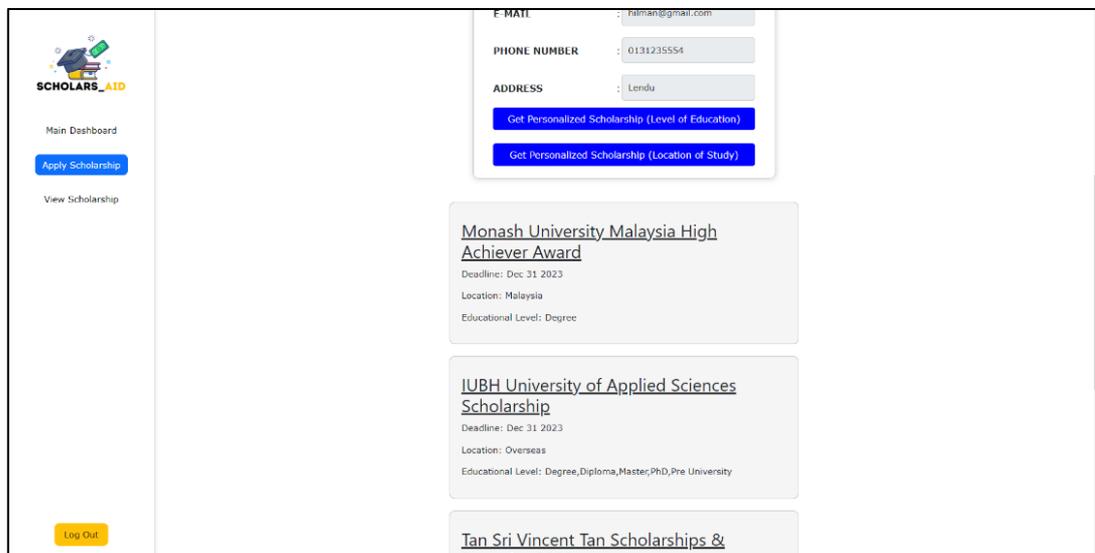


Figure 13. List of personalized scholarships

4.2 Usability test

The purpose of a usability test is to identify any issues that users may encounter when using the website application, and to gather feedback on how to improve the user experience. The usability test for the web application has been conducted based on in-person testing that involved 30 users from various level of educations (SPM, Diploma, Degree). Table 1 shows the sample of a respond from the survey question. The results from the 30 respondents on each of the item are depicted in Figure 14.

Table 1. Sample of a respond from the usability survey

Item	StudyMalaysia	AfterSchool	Malaysia Scholarships	UniEnroll	ScholarsAid
1. Website is user-friendly and easy to use.		✓		✓	✓
2. Offer personalized scholarship list		✓		✓	✓
3. Information provided are relevant to the user.	✓	✓	✓	✓	✓
4. Easy to navigate between pages.		✓		✓	✓

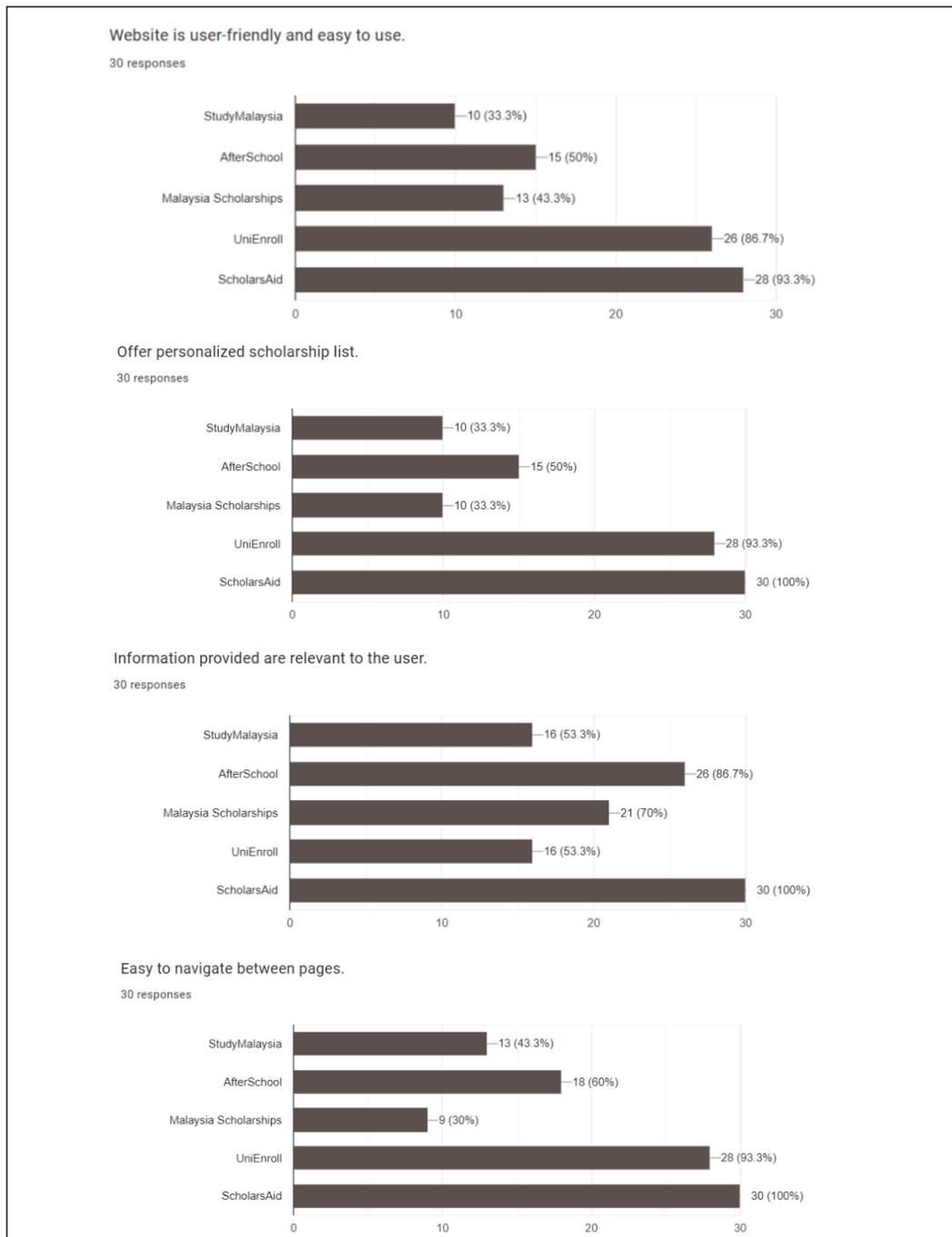


Figure 14. Results of Usability Test

Based on the findings, *ScholarsAid* appears to be comparable to *UniEnroll* regarding the user experience. Both systems offer similar features and ease of use from the perception of most users from the survey. However, some users highlighted that *ScholarsAid* stands out due to its superior level of personalization. As a result, *ScholarsAid* can be considered more user-friendly and better tailored to individual user needs.

5. Conclusion

In conclusion, the development of a web application for personalized scholarship has a great potential for revolutionizing the scholarship application process. The findings from this research indicate that such a system can provide a more efficient and effective way of matching students with relevant scholarship opportunities based on their personal characteristics and qualifications. Furthermore, the results highlight the importance of personalization in improving the user experience of scholarship application systems. By allowing users to customize their search criteria and providing targeted recommendations, a web application for personalized scholarships can simplify the process and increase the likelihood of successful scholarship applications.

However, this project also reveals several opportunities for further development and improvement of the system. These include expanding the scholarship database, introducing additional search and filter criteria, and improving the personalization algorithm.

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Conflict of Interest

The authors declare no conflict of interest in the subject matter or materials discussed in this manuscript.

References

- [1] S. Heleta and T. Bagus, "Sustainable development goals and higher education: leaving many behind," *High. Educ.*, vol. 81, no. 1, pp. 163–177, 2021.
- [2] V. Subramaniaswamy *et al.*, "An ontology-driven personalized food recommendation in IoT-based healthcare system," *J. Supercomput.*, vol. 75, no. 6, pp. 3184–3216, 2019.
- [3] A. B. Kocaballi *et al.*, "The personalization of conversational agents in health care: systematic review," *J. Med. Internet Res.*, vol. 21, no. 11, p. e15360, 2019.
- [4] W. Chen *et al.*, "POG: personalized outfit generation for fashion recommendation at Alibaba iFashion," in *Proceedings of the 25th ACM SIGKDD international conference on knowledge discovery & data mining*, 2019, pp. 2662–2670.
- [5] J. Xiong *et al.*, "A personalized privacy protection framework for mobile crowdsensing in IIoT," *IEEE Trans. Ind. Informatics*, vol. 16, no. 6, pp. 4231–4241, 2019.
- [6] D. Pratiba, M. S. Abhay, A. Dua, G. K. Shanbhag, N. Bhandari, and U. SINGH, "Web scraping and data acquisition using Google scholar," in *2018 3rd International Conference on Computational Systems and Information Technology for Sustainable Solutions (CSITSS)*, 2018, pp. 277–281.
- [7] N. D. Grawe, *Demographics and the demand for higher education*. JHU Press, 2018.
- [8] E. M. Lee and J. Harris, "Counterspaces, Counterstructures: Low-Income, First-Generation, And Working-Class Students' Peer Support At Selective Colleges 1," in *Sociological forum*, 2020, vol. 35, no. 4, pp. 1135–1156.
- [9] A. Oleksiyenko *et al.*, "Comparative and international higher education in a new key? Thoughts on the post-pandemic prospects of scholarship," *Comp. A J. Comp. Int. Educ.*, vol. 51, no. 4, pp. 612–628, 2021.
- [10] E. Sugiyarti, K. A. Jasmi, B. Basiron, M. Huda, K. Shankar, and A. Maselena, "Decision support system of scholarship grantee selection using data mining," *Int. J. Pure Appl. Math.*, vol. 119, no. 15, pp. 2239–2249, 2018.
- [11] A. K. Yatskov, M. I. Varlamov, and D. Y. Turdakov, "Extraction of data from mass media web

- sites," *Program. Comput. Softw.*, vol. 44, pp. 344–352, 2018.
- [12] R. Diouf, E. N. Sarr, O. Sall, B. Birregah, M. Bousso, and S. N. Mbaye, "Web scraping: state-of-the-art and areas of application," in *2019 IEEE International Conference on Big Data (Big Data)*, 2019, pp. 6040–6042.
- [13] S. Thivaharan, G. Srivatsun, and S. Sarathambekai, "A survey on python libraries used for social media content scraping," in *2020 International Conference on Smart Electronics and Communication (ICOSEC)*, 2020, pp. 361–366.
- [14] M. A. Khder, "Web Scraping or Web Crawling: State of Art, Techniques, Approaches and Application.," *Int. J. Adv. Soft Comput. Its Appl.*, vol. 13, no. 3, 2021.
- [15] S. Mehak, R. Zafar, S. Aslam, and S. M. Bhatti, "Exploiting filtering approach with web scrapping for smart online shopping: Penny wise: A wise tool for online shopping," in *2019 2nd International Conference on Computing, Mathematics and Engineering Technologies (iCoMET)*, 2019, pp. 1–5.
- [16] B. B. P. Maurya, A. Ray, A. Upadhyay, B. Gour, and A. U. Khan, "Recursive stock price prediction with machine learning and web scrapping for specified time period," in *2019 Sixteenth International Conference on Wireless and Optical Communication Networks (WOCN)*, 2019, pp. 1–3.
- [17] A. Ez-Zahout, S. Chakouk, S. Mitouilli, and M. A. El Bouni, "A Numerical Real Time Web Tracking and Scrapping Strategy Applied to Analysing COVID-19 Datasets," in *2021 7th Annual International Conference on Network and Information Systems for Computers (ICNISC)*, 2021, pp. 536–542.
- [18] A. L. Ostrom *et al.*, "Service research priorities: managing and delivering service in turbulent times," *J. Serv. Res.*, vol. 24, no. 3, pp. 329–353, 2021.
- [19] S. Peroni and D. Shotton, "OpenCitations, an infrastructure organization for open scholarship," *Quant. Sci. Stud.*, vol. 1, no. 1, pp. 428–444, 2020.
- [20] N. D. F. Mohd Fauzi, "E-scholarship system for UiTM Jasin student using Web scraping technique," *Universiti Teknologi MARA, Melaka*, 2018.

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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,

Setuju.

27.1.2023

SITI BASRIYAH SHAIK BAHARUDIN
Timbalan Ketua Pustakawan

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