Website Development: Educating Individuals on the Risks and Value of Personal Data.

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Abstract

A summary of your study with approximately 250 – 300 words following Hyland's structure for writing abstracts which covers brief background, purpose/objectives of the study, the methodology used, key results, and conclusions. Use Bookman Old Style Font in 10 pt. Use 1.15 spacing the document must be submitted in Word file using the prescribed format.
Keywords: up to five keywords; separated by semicolons

(Do this at the end of your research endeavor.)

INTRODUCTION

Students in this day and age are exposed more than ever. They are exposed to all kinds of information, opinions, news, and entertainment because of technological advancements - mainly the internet and social media. In turn, their lives can also be exposed to the public. Through sharing personal data or allowing cookies to track their online activity, students can potentially be a victim of identity theft, phishing attacks, data breaches, and other cybercrimes, exploitation, and privacy breaches.

In the digital age, personal data has become a valuable commodity that fuels communication and innovation. The sharing of information has grown immensely in the 21st century. According to a study on Statista.com (2024), it is estimated that 402.74 million terabytes of data are created each day. Data containing every movement, every thought, and every human being's life. As a result, this data carries unfathomable value if utilized wisely. An example is how Tik Tok's algorithm uses data algorithms to keep users engaged, helping it rise in popularity and compete for market share in the social media industry. From government monitoring for national security, to statistical treatment for academic research, to predicting trends in business ventures, all of this data has the power to change the world. On the other hand, cybersecurity threats, data breaches, and privacy violations have become common concerns as personal data is increasingly commodified - Issues regarding exploitation of data by conglomerates and unwarranted government surveillance. Additionally, many individuals are unaware that their data can be exploited without their consent through cookies or nefarious terms and conditions agreements. For students, especially those in senior high school, the internet serves as a platform for social interaction, education, and entertainment. However, the extent of personal information they share online may expose them to risks they are not fully aware of. This information can range from seemingly harmless data such as their name and age, to more sensitive information like location and even personal preferences. The consequences of data exposure may lead to privacy invasions, identity theft, or exploitation by data brokers and malicious entities.

Cybersecurity is critical in protecting people who use the internet through various electronic devices in their daily lives Sharma, P. (2023). Hackers and Data Brokers have posed a significant threat in unauthorized access data exploitation to personal data such as Names, Home Address, IP Address, and Phone Numbers. They must, however, be protected when using the internet and secure against unauthorized access and cyber security plays a critical role in securing such data. Crimes involving personal data are crimes or illegal activities that use the internet, network, computer and digital devices. Examples of cybercrimes and activities involving personal data are fraud, the trafficking of child pornography, identity theft, and privacy violations. With the ever expanding digital space, a rise in data has been correlated with a rise in incidents of data theft Vaidya (2023). According to Federal Law, the term personal data refers to any information relating directly or indirectly to a certain or definable person (subject of personal data). Due to this broad understanding of personal data, questions arise concerning the attribution of particular information about an individual to personal data. Soldatova, V. (2020). Personal data sharing of students is becoming more common and normal among students. In return, they get personalized services, learning experiences, and tailored media content with the aim to get enhanced engagement. Buggenhout et al. (2023).

Despite the importance of being literate on the risk and value of personal data, there is a lack of online resources that can directly teach students about personal data risks and value, and give an assessment on their vulnerability to personal data breaches. This is the purpose of this project. This project aims to develop a website that can inform students about personal data, and more importantly, develop a built in survey to calculate the

visitor's level of personal data risk. In developing this website, this study aims to present a useful resource for students.

Significance of the Study
This project will aspire to shed more light on personal data's risks and value, as well as educate students on the risks and value of personal data. Additionally, it will develop a way to calculate personal data risk levels for the safety of the viewer. This is through the creation of an educational website that can provide them the necessary knowledge to navigate the internet. Since this website is tailored to students, the development of this website will be more effective in teaching them than traditional methods. With the creation of this website, it will benefit students in their present and future use of technology, creating a safer and more productive online environment. Hence, without this project, students will be deprived of another potential resource in their journey in the modern age.

Scientific Basis and Theoretical Framework
In this project, the researchers are aiming to develop a website that aims to impart information on personal data's risks and value. As well as give an assessment on their susceptibility to personal data risks.

The project is built upon the fact that the sharing of personal data has risks and value for individuals. A part of an individual's activity online is sharing personal data. This is done consciously through inputting information on account creation or posting on accounts that is related to your identity. It can also be done unconsciously through the tracking of your activity on the internet by algorithms and cookies. And so, because of the vast amount of data, there will be entities who will consider them valuable. On the other hand, individuals will also find that there are risks in sharing personal data.

Hence, this study will increase public knowledge regarding personal data through the creation of a website. It will discuss personal data types, risks, value, and related industries. Information analyzed and sourced from trustworthy sources and dictionaries.

Personal data is any information that is related to an identified or identifiable living individual as defined by the European Commission (2024). Additionally, they have stated many types of personal data, which include: Names, Home Address, IP Address, Phone Numbers, and Medical Information. Furthermore, any information you share that can be traced back to your identity, even if under a pseudonym, is considered personal data. Only when that information cannot be identified to a person and is under anonymity can data not be considered personal. The importance of data in the 21st century can be overlooked. The Data Brokering Industry or Data brokers collect and gather many types of personal data to sell to third parties often without the individuals' consent. Data broker companies like Acxiom and Equifax have collected a large database full of personal data and the industry as a whole is estimated to be worth USD 471.25 Billion by 2032. Beauvisage et al. (2020). Governments worldwide have increasingly sought access to personal data for various administrative, regulatory, and security purposes. F. Cate et al. (2012). With the expansion of digital space, the government has taken more importance on individuals' activities and personal data to improve and develop a better administration and security capabilities. Personal data is essential in academic research as well, particularly in fields like biomedical research, where data from millions worldwide is analyzed to improve health outcomes. The digitalization of health data, aided by social media and devices like smartwatches, has increased the scope of research but also intensified concerns about privacy and secondary data use. Parimi et al. (2023).

Personal data has various categories or types. Personal data according to Privacy laws in the United States are information that can be used to distinguish or trace an individual's

identity, such as name, date and place of birth, mother's maiden name, or biometric records and any other information that is linked or linkable to an individual.

• Name, such as full name, maiden name, mother's maiden name, or alias.
• Address information, such as street address or e-mail address.
• Telephone numbers, including business, and personal numbers.
• Personal characteristics, including photographic image (especially of face or other identifying characteristic) or fingerprints
• IP Address
• Social Media Accounts social media platforms students are active on (e.g., Facebook, Instagram, X).

Milne (2017) created a typology of information types based on perceived associated risks. Information was analyzed with four perceived risks, physical, psychological, monetary, and social. It also included the respondents sensitivity or reluctance on sharing these informations and their willingness to provide it.

(1) monetary risk is the risk associated with potential financial loss,
(2) social risk is the risk associated with threats to an individual's self-esteem, reputation, and/or the perceptions of others,
(3) physical risk is the risk associated with bodily injury, and
(4) psychological risk is the risk associated with potential negative emotions such as anxiety, distress, and/or conflicts with self-image

		Probability of Personal Data Breaches				
		1	2	3	4	5
Significance of the Personal Data	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Table 1.1 (Personal Data Risk Assessment)

In this table, the level of risk is calculated based on two parameters: The Significance of the data and the Vulnerability to a breach in personal data.

Vulnerability refers to the individual's personal data exposure, i.e. the amount of data the individual has shared to the public, to websites, or to cookies.

Significance is based on the type of personal data. Wherein, address is a more significant type of personal data than first name.

The values of these two variables are multiplied to determine a score where a higher value has higher risk to damages

Statement of the Problem
Through researching for information on personal data's risk and value, the researchers have discovered a gap and lack of student tailored resources to educate themselves on personal data. Furthermore, a way to quickly calculate an individual's vulnerability to personal data breaches was not available. That is why this project's goal is to develop a website to supplement this.
For this project, the following questions will be asked so as to evaluate the created website:

● What is the website developed in this project?

- What is the evaluation of the website - in terms of content, aesthetics, effectiveness, and shareability - by professionals and students ?

METHODOLOGY

The following section encompasses the methodology of the study, and will be presenting the descriptive research design and conceptual model that will be the guide for the investigation. Additionally, operational definitions of terms will be specified so as to identify the variables and parameters. Since the project is a descriptive quantitative research, an IPOE format will be employed; The paper will state the detailed Input method, Process, Output, and Evaluation. And lastly, it will give the method for data collection. This section aims to establish this research as robust and replicable so as to convey the scientific integrity of the paper.

Research Design

Descriptive research design, as defined by John W. Creswell (2022), is a study that focuses on describing the characteristics of a population or phenomenon being studied. It is primarily used to gain an understanding of a particular group, situation, or case and employs methodologies such as observation, surveys, interviews, and experiments to collect data. This type of research answers fundamental questions like "Who, What, When, Where, Why, and How" related to the phenomenon under investigation. A format for Descriptive quantitative research is IPOE. The IPOE format—standing for Introduction, Purpose, Overview, and Evaluation—is a structured approach used in descriptive research design to provide clarity and organization to the research process. This paper will explore the development of a website and explain its content.

Conceptual Model

Website Development

Web development has been taught for decades. The world wide web was developed by Tim Berners-Lee in 1989 and has since evolved. For this project, the researchers will develop a website through programming languages such as Hyper Text MarkUp Language (HTML) and Javascript. For this particular project, the researchers will use:

HTML : For creating the layout and structure of the website.
CSS : In designing the aesthetic and style of the website.
JavaScript : To add the risk assessment calculation logic and moving parts of the website.
Live Server : For ensuring that the functions are running correctly.
Coding Software: VS (Visual Studio) Code for coding and testing

All of these come together to form a website.

Risk Assessment Calculation

	Probability of Exposure/Personal Data Breaches				
Significance of the type of Personal		1	2	3	4	5
	1	1	2	3	4	5
	2	2	4	6	8	10

Data	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Table 1.1 (Personal Data Risk Assessment)

As for the risk level calculation, the models used by Scarfone (2022) and Donn (2025) were used as a basis. These were modified to be tailored to students' personal data preferences and presented as a built-in form in the website.

The model assesses the level of risk an individual has in terms of the significance of the type of personal data and the probability of exposure/personal data breaches.

The product of the two parameters will determine the risk level of the individual.

The types of personal data calculated are: Name, Email Address, Location, Telephone/Phone Number, Photos, IP Address, Bank Account, Microphone, Signature, and Biometric Data.

With each type of data exposed, the probability of personal data breaches increases. And, the significance of each type of data is based on research on the importance of types of data. Once the data is calculated, a score will be presented to the individual determining whether they are of high, moderate, or low risk to personal data risks and exploitation.
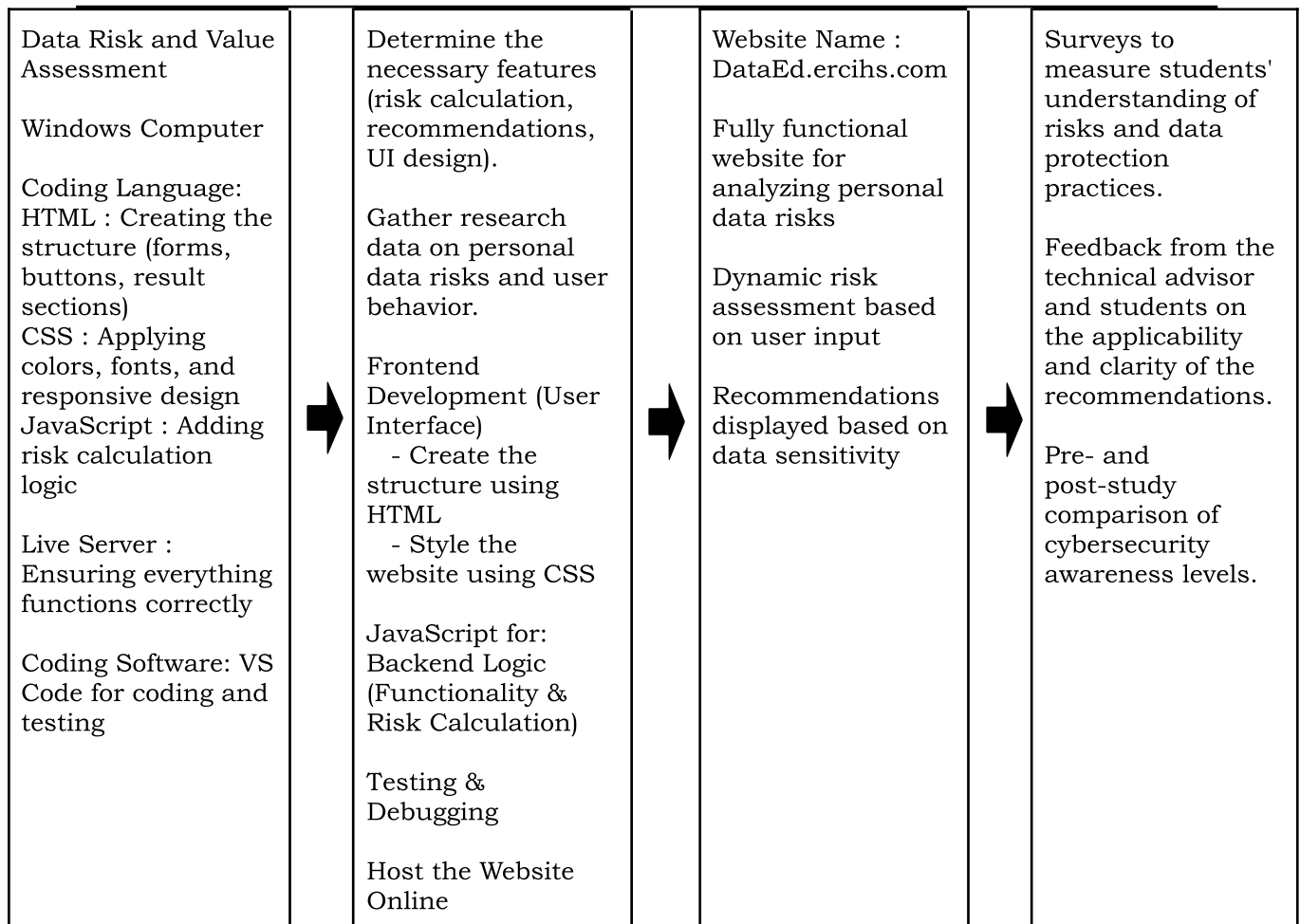
Content

The content is curated by the researchers. Sourced from reputable references, Information on personal data risks and value is presented and tailor made for the education of students.

Website Functions and Content
Personal Data Risk Assessment Personal Data Risks Personal Data Value This Research Paper References

Project Design

This Project is a descriptive project following the IPOE model. Where input contains the necessary resources and tools for the creation of the project. Process refers to the procedure and development of the project. Output is the final result which will be disseminated. After the sharing of the results to the target demographic, surveys for the evaluation of the website will be conducted.

Input		Process		Output		Evaluation

Data Risk and Value Assessment	Determine the necessary features (risk calculation, recommendations, UI design).	Website Name : DataEd.ercihs.com	Surveys to measure students' understanding of risks and data protection practices.
Windows Computer		Fully functional website for analyzing personal data risks	
Coding Language: HTML : Creating the structure (forms, buttons, result sections) CSS : Applying colors, fonts, and responsive design JavaScript : Adding risk calculation logic	Gather research data on personal data risks and user behavior.	Dynamic risk assessment based on user input	Feedback from the technical advisor and students on the applicability and clarity of the recommendations.
Live Server : Ensuring everything functions correctly	Frontend Development (User Interface) - Create the structure using HTML - Style the website using CSS	Recommendations displayed based on data sensitivity	Pre- and post-study comparison of cybersecurity awareness levels.
Coding Software: VS Code for coding and testing	JavaScript for: Backend Logic (Functionality & Risk Calculation) Testing & Debugging Host the Website Online		

Project Making or Product Making Procedure

Input:
Online resources for web development are naturally procured online. The download of software such as Notepad++ for HTML, CSS, and Javascript. Other resources are VS code for testing the website. On the other hand, the hardware includes a personal computer.

Process:
The development of the website will be done by the researchers over the course of a month. Wherein, code will be shared on GITHub and through messaging. The first step is planning. This is the designing of the layout of the website and its functions. Illustrating of the webpage and designing a criteria for the risk assessment function is done here. The next step is the actual coding of the website. This will be done through HTML with elements of Javascript and CSS - The code can be seen in appendix D. The researchers will code the website from scratch using Notepad++ without the use of web development template software. After the website is developed, it will be sent to the technical adviser for review and critiquing. After several rounds of taking feedback from the technical advisor and changing the website, it will then be published online.

Output:
The output will be **DataED.ercihs.com**. This website will have the functions of a risk assessment calculator for personal data as well as information regarding its risks and value. The research paper will also be available to view on this website.

Evaluation:
Apart from evaluation by the technical advisor, a sample of 15 random students that have visited the website will be invited to partake in a survey. This survey will evaluate the content, effectiveness, aesthetics, and shareability of the website. This evaluation will determine the success of the study's goal of creating a resource for students to be more informed on personal data.

Data Gathering Instrument or Testing Procedure
The data gathering instrument used in this study is a survey for evaluating the final output. This will be done both in person and through electronic means.

As the output is a website, the survey participants will be students that have visited the website. The sample will be 15 students randomly selected from visitors of the website. The survey will be a descriptive quantitative survey using the Likert scale to rate the website's: Content, Effectiveness, Aesthetics, and Shareability.

A consent form will also be included in the survey to protect the privacy and rights of the participants.

This survey is to be checked and validated by the technical advisor, so that the content of the survey is up to par with academic standards and is a robust way to determine the final output. This survey is seen in appendix B.

Statistical Tool
The assessment of the data will be a simple descriptive statistical analysis of the means. The four categories in the evaluation survey are: Content, Effectiveness, Aesthetics, and Shareability. These four categories will be scored on a Likert scale. The average of the scores will be taken and coded. The descriptive analysis will then be interpreted by the researchers so as to determine the success of the project.

RESULTS AND DISCUSSION

Results
The final output of this project is a website: DataED.com. Its functions include a risk assessment calculator and information on personal data. The website also included recommendations to the visitor depending on their risk value calculated. Another function of the website is the viewing of this research paper. The design is simple and it consists of only one page. Scrolling down, the calculations for the risk assessment calculator will be seen first. Followed by the actual risk calculator. Once the calculation is done, further down the page are the results. The assessment will state whether the visitor had high, moderate, or low risk and will give a recommendation accordingly. This is also the educational portion of the website. At the bottom of the page lay the references and the information of the authors. Additionally, on the right of the screen can be seen the button to view this research paper document.

As for the public evaluation, they yielded the following data:

How relevant and informative did you find the content on the website?
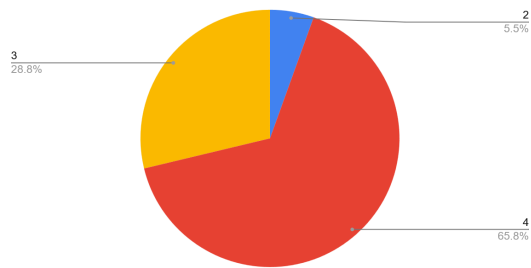

Table 2.1 (Relevance of the Content)

Did the website provide clear and understandable explanations of personal data risks?
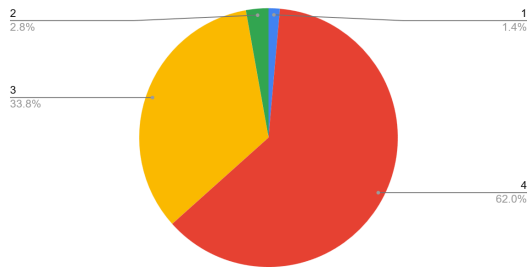

Table 2,2 (Clarity of the Content)

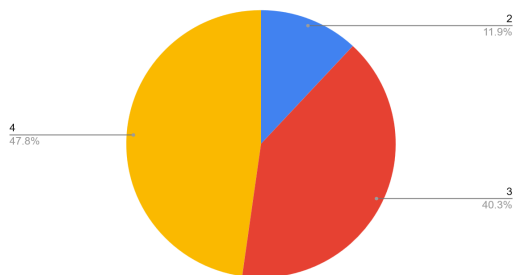How visually appealing was the design of the website?

Table 2.3 (Visual Appeal)

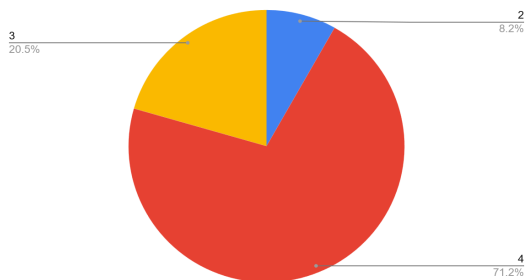Was the layout and color scheme easy to read and navigate?

Table 2.4 (Layout and Color Scheme)
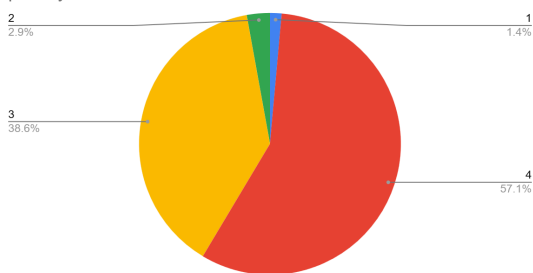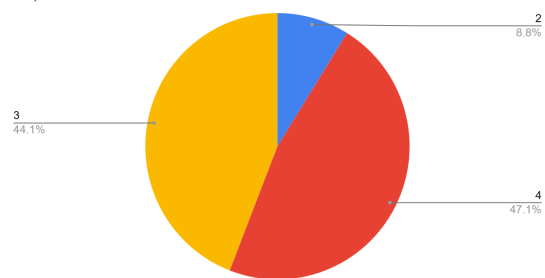
Did the recommendations encourage you to improve your data privacy habits?

Did the risk assessment tool help you understand your data exposure?

Table 2.5 (Effectiveness of the Recommendations) Table 2.6 (Risk Calculation Effectiveness)

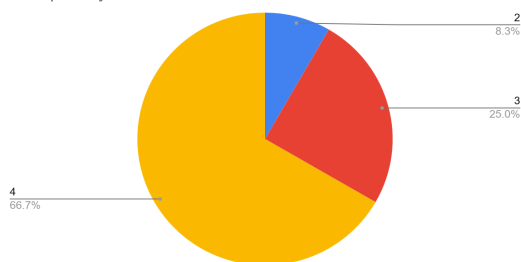Would you recommend this website to others concerned about data privacy?

Table 2.7 (Shareability)

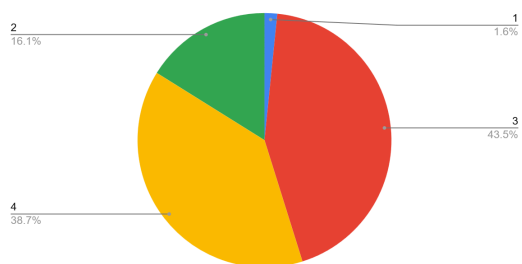How likely are you to share this website with friends or on social media?

Table 2.8 (Shareability)

If you have any suggestions or recommendations, feel free to add ;

> -"Difference choice of color in background to appear more appealing to various students and individuals."
> -"I wish there was bit more info on what the website is about."

Table 2.9 (Suggestions)

Conclusion

With the completion of the project, the researchers had to assess their results and to determine if their goal to create a website was successful. The final output was a website that contained various information and knowledge regarding personal data, and a personal data risk calculator. This website has completed the goal of creating a resource that can facilitate learning and increase awareness on personal data's risks and value. Additionally, it has given students a way to assess their personal data risk level, in turn, developing a tool to create a safer online environment. This project had gone as planned.

Subsequently, the website was also evaluated by professionals and students. The overall sentiment was that the website was generally well-received, with most users finding it informative and useful. In terms of content, the majority of respondents rated it as relevant and clear. As for Effectiveness, users found the risk assessment tool helpful in understanding data exposure, and the recommendations encouraged them to improve their privacy habits. The aesthetics were rated positively And finally, shareability was moderate. All of these results were encouraging and indicate that the website successfully fulfills its purpose, however, there were also suggestions for further development. These suggestions include; Adding more introductory information to clearly explain what the website does; Enhancing the color scheme to improve visual appeal; Refining the layout and text presentation for better readability. Despite that, the website was deemed as a success at its launch.

Recommendations

This website is the first step to creating more resources for students online. Resources that can facilitate learning, provide a tool, or be beneficial to a student in any way. Thus, it is the recommendation of this paper that others also develop for themselves a website, app, or any other similar material. So as to create an online culture conducive to learning.

And as for the website developed in this project, it is advised to follow the suggestions made by the evaluators. The website can definitely be improved and added upon. Such as; Adding more introductory information to clearly explain what the website does; Enhancing the color scheme to improve visual appeal; Refining the layout and text presentation for better readability. Additionally, other functions can be implemented to expand the utility of the website.

References

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Name of the Author 1 *(email address)* their affiliation and research interests.

Name of the Author 2 *(email address)* their affiliation and research interests.

Name of the Author 3 *(email address)* their affiliation and research interests.

Appendices

Appendix A - Acknowledgement

Appendix B - EVALUATION SURVEY

Appendix C - Acknowledgement

Appendix D - WEBSITE CODE

Appendix E - Acknowledgement

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