



Design and Development of a Web-Based News Aggregator

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Abstract

This manuscript aims to develop a web-based application that provides the features of a news aggregator application that allow users to view news articles from multiple sources. Users will be able to stay up-to-date without having to browse through the news from various sources. At the same time, this application has the features of login, sign up, search functionality, and choosing the news sections based on our preferences. HTML, CSS, JavaScript, and PHP are used to develop the application.

Index Terms:

News aggregation

HTML

Web development

Web design

Web implementation

I. INTRODUCTION

Today is an era where technology is advancing rapidly at an unprecedented pace. Information such as news keeps changing, processing, and distributing to the whole world in milliseconds among citizens from all around the world. People nowadays can simply get information through mobile applications and web-based applications [7]. Convenience has been given to all the users of different gadgets such as handphones, laptops, and desktops by just clicking and entering the keywords of the information the users wanted. The Internet also gives us the freedom for us to upload, share, and create content including a personal website or through certain social media platforms such as Facebook, Instagram, and Snapchat [2]. Lots of choices on the internet fulfill the user requirements and demands in this fast-paced life. Users can go through different sources of information until they get the information that they wanted. However, issues of difficulty collecting or gathering content or pieces of information due to this new way of sharing, distributing information, and creating content are undeniable [2].

Information distribution causes the time consumed to obtain information increases rapidly as the users need to go through too many different sources. For example, there are too many news sources such as BBC, CNN, and The Stars as different countries may have different primary news sources while one country can have many news sources occurring simultaneously [2]. At the same time, fake news issues arise due to the freedom of creating content and sharing

information. Thus, the users also need to track whether the information is true or false [2]. The users face the burdensome of gathering news information as more fake news occurs and too many different sources for the news [2].

For many users worldwide, this has become a problem as news is important to get to know about the world's situation and the issues happening worldwide [7]. The problem is how to filter fake news and gather authentic news information for the users of the internet. Hence, a web server that gathers news from different trustworthy sources is needed for the purpose of being time-efficient and reducing the spreading of fake news. This research aims to design and develop a news aggregator that provides reliable news from different sources.

II. METHODOLOGY

In this project, the methodology that will be used is the Agile methodology as Agile methods have proved to be successful for small and medium-sized projects that can be developed by a small co-located team[8]. At the same time, the Agile method is also cost-efficient and time efficient[10]. Thus, the Agile methodology is suitable for this project[8]. The agile method involves breaking down the development process into smaller and more manageable chunks called iterations or sprints. Each sprint is lengthed two to four weeks. At the end of each iteration, a working software product is presented to the stakeholders for feedback and the

feedback is available for the team members to make necessary adjustments to the project plan.

The following steps will be implemented to achieve the objective of this study which is to create a news aggregator that provides reliable news from different sources. Firstly, we identify the problems that the users are facing and list down the features that require for our news aggregator. The purpose of this step is for the requirement analysis. We do this through group discussion to come out with solutions for this problem. Next, we started to design the HyperText Markup Language(HTML) for our news aggregator's front page with the features we have designed to implement. In this step, Cascading Style Sheets(CSS) are used to unify the design of our news aggregator as the CSS can be implemented to different HTML easily. After that, we will implement Hypertext Preprocessor(PHP) to store the user's data. All databases, both relational and non-relational, can be connected to PHP with ease using MySQL. The functions of this project are:

- Makes the website more presentable using CSS
- Keep the data for user login using MySQL

After all the coding is done, we will move to the next step which is testing the news aggregator. This testing is done by stakeholders. Then, we will be planning our next step based on the feedback from the testing.

The overview of the methodology is shown in the diagram and flowchart below.



Figure 1 Overview of the methodology

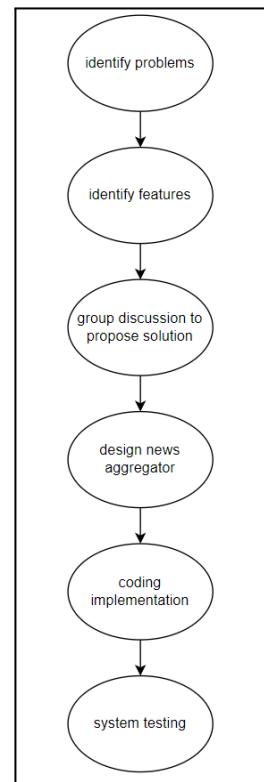


Figure 2 Flowchart of the methodology

To evaluate the website, we will be using WAMMI (Website Analysis and Measurement Inventory)[4]. The evaluation is conducted through questionnaires. Thus, we will need to recruit participants. In our project, we find the participants within the people around us. For example, our family, friends, and classmates. Then, all the responses received from the respondents through questionnaires will be analyzed and visualized.

III. RESULT

A. Key Features, Functionalities, and Improvements Implemented

News aggregator created have the features of gathering the news from different sources, login in, signing in, editing profiles, viewing user lists, and deleting accounts. In this session, we will be explaining the features, functionalities, and user experience of the users.

First and foremost, this is the homepage of our news aggregator website. On this page, the user can view all the latest news from different sources. Other features such as logging in and creating an account also can be clicked on this page. The user can simply log in by just clicking on "Log in" on the left-hand side and create an account by clicking on "Create acc" on the right side of the page.



Figure 3.1 Screenshot of the homepage

To create an account, a page that enables the users to create an account is as follows. On this page, the users can enter their information to create an account.

 A screenshot of a 'Create Account' form. It features a title 'Create Account' at the top. Below it are four input fields: 'First Name', 'Last Name', 'Username' (with a note 'within 8-15 characters'), and 'Contact number'. Each field has a placeholder text and a small descriptive note below it.

Figure 3.2 Screenshot of the Create account page

By clicking on “Log in”, a page that enables the users to log in is shown. On this page, the users can enter their email address and password to log in. The users can also create an account by clicking on “Sign up” and reset their password by clicking on “Reset password”. For the user who forgets their password, they can find their account when they clicked on the reset password. The account information will be shown and the user can choose to reset their password. When the user login, a cookie will be created.

 A screenshot of a 'Log in to your NEWS account' form. It includes a title, a note 'Don't have an account? [Sign up.](#)', and two input fields for 'Email Address' and 'Password'. Below the fields is a 'Login' button. At the bottom, there's a link 'Forgot password? [Reset password.](#)'.

Figure 3.3 Screenshot of the login page

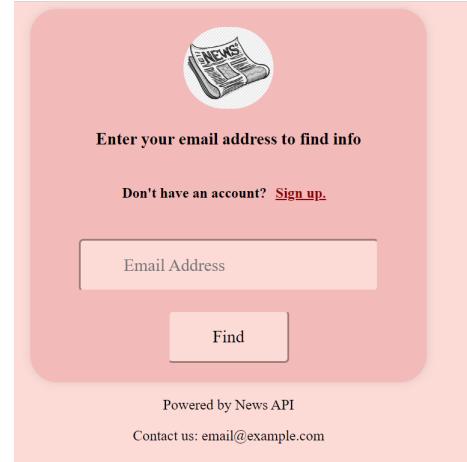


Figure 3.4 Screenshot of the find info page

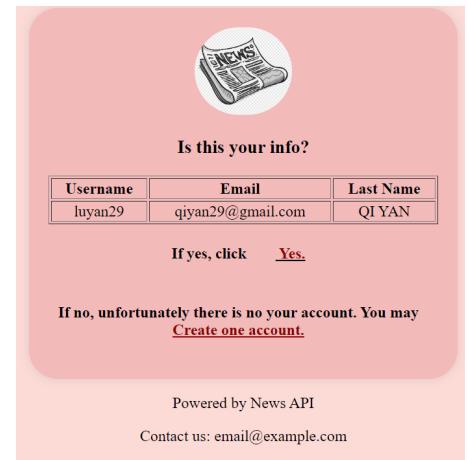


Figure 3.5 Screenshot of the info page

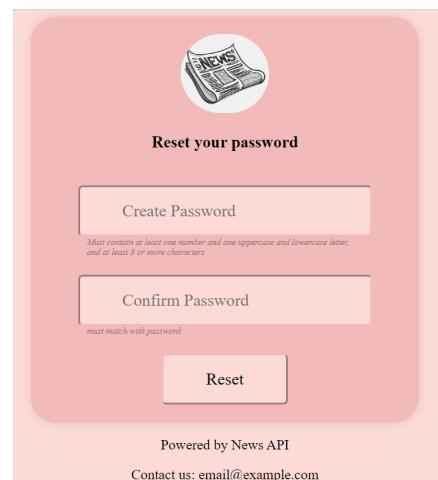


Figure 3.6 Screenshot of the reset password page

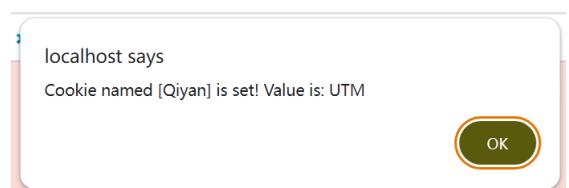


Figure 3.7 Screenshot of the cookies set

The user will then be redirected to the homepage again, it can be seen that the homepage has changed to a login interface. On this page, the user that login can view their information by clicking on “Profile” and change the settings by clicking on “Settings”. Users can edit their information, view the user list, delete an account and log out on the settings page.



Figure 3.8 Screenshot of the login interface



Figure 3.9 Screenshot of the user's information

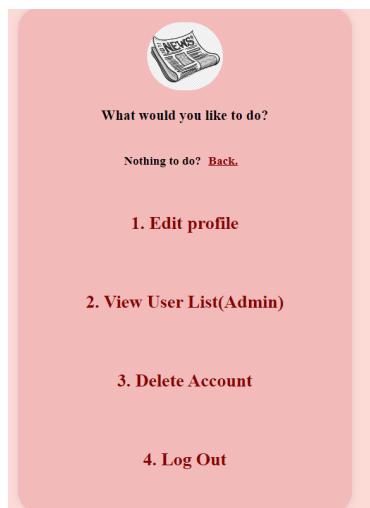


Figure 3.10 Screenshot of the settings option

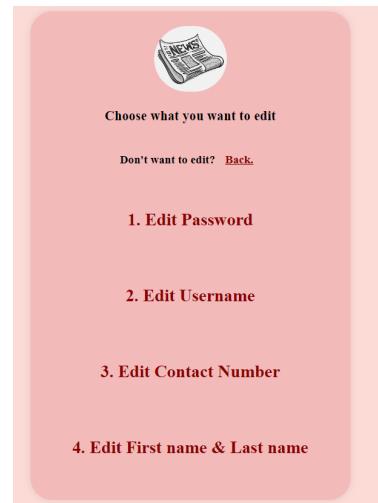


Figure 3.11 Screenshot of the edit profile option

View user list is the functionality that can only be accessed by the administrator of the website. By clicking on the “View User List(Admin)”, the user will be redirected to the verification page to verify the administrator's identity. The user list will be displayed only when the user enters the correct administrator's password.

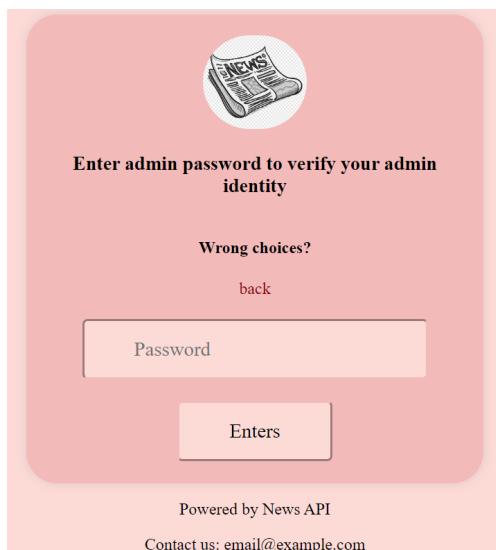


Figure 3.12 Screenshot of the administrator verification page



Figure 3.13 Screenshot of the user list

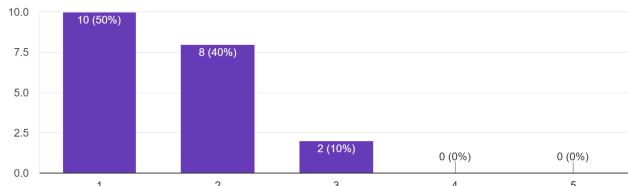
B. Results of Evaluation

Below are the results of the user evaluation through Google Forms.

Graph 3.1

This website has much that is of interest to me.

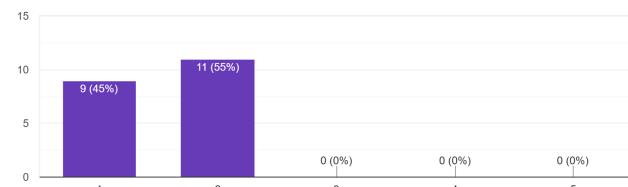
20 responses



Graph 3.2

I can quickly find what I want on this website.

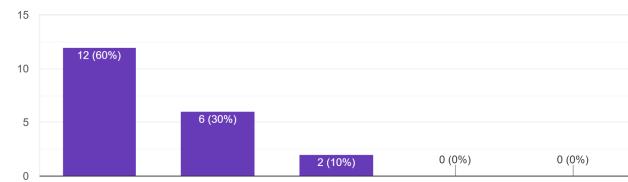
20 responses



Graph 3.3

I feel in control when I'm using this website.

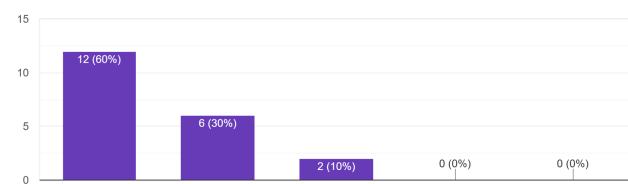
20 responses



Graph 3.4

Everything on this website is easy to understand.

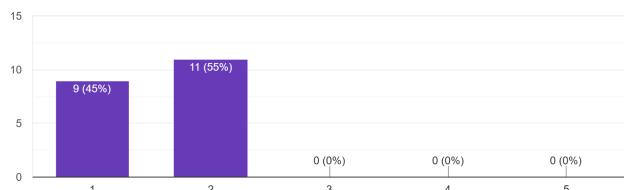
20 responses



Graph 3.5

This website seems logical to me.

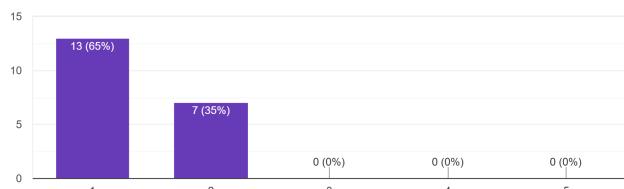
20 responses



Graph 3.6

I feel efficient when I'm using this website.

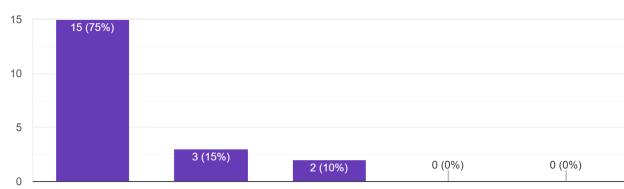
20 responses



Graph 3.7

Using this website for the first time is easy.

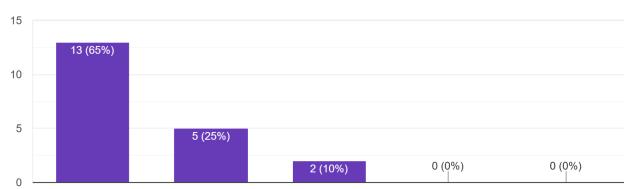
20 responses



Graph 3.8

I get what I expect when I click on things on this website.

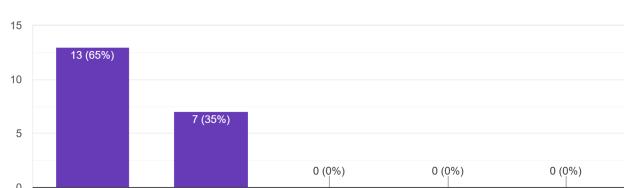
20 responses



Graph 3.9

The pages on this website are very attractive.

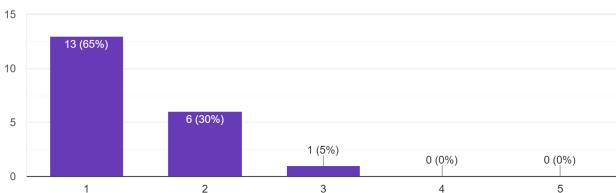
20 responses



Graph 3.10

This website helps me find what I am looking for.

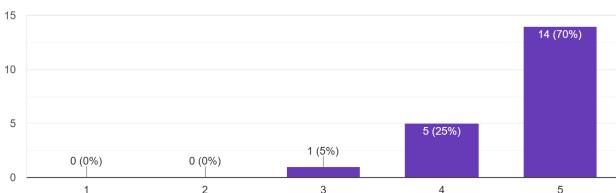
20 responses



Graph 3.11

It is difficult to move around this website.

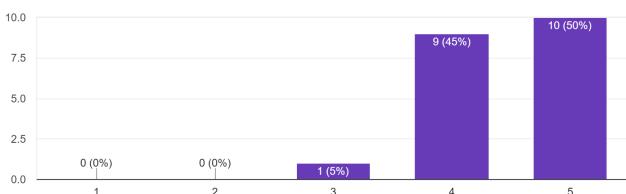
20 responses



Graph 3.12

This website needs more introductory explanations.

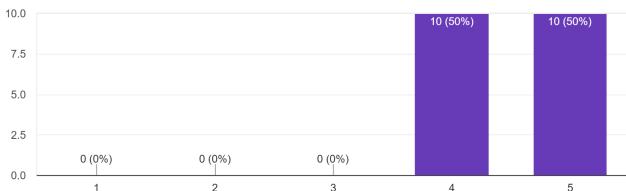
20 responses



Graph 3.13

I don't like using this website.

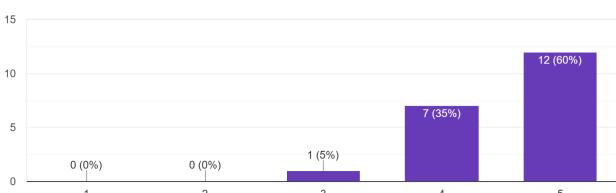
20 responses



Graph 3.14

This website is too slow.

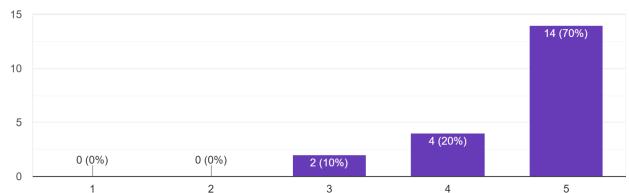
20 responses



Graph 3.15

This website is a poor User Interface(UI) design.

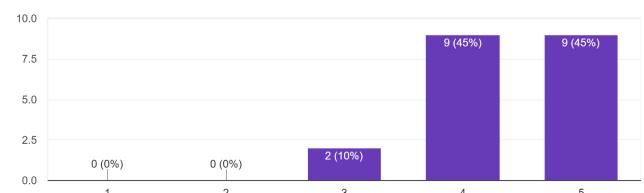
20 responses



Graph 3.16

Learning to find my way around this website is a problem.

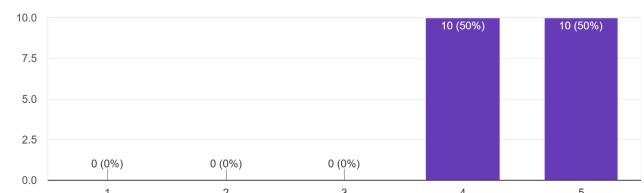
20 responses



Graph 3.17

It is difficult to tell if this website has what I want.

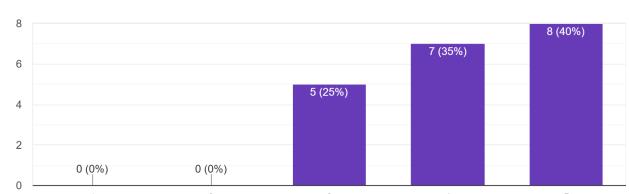
20 responses



Graph 3.18

This website has some annoying features.

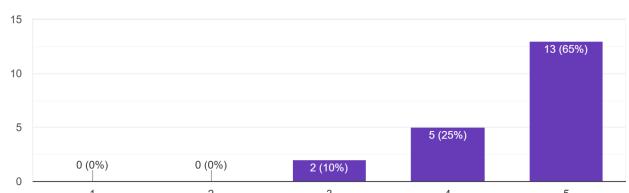
20 responses



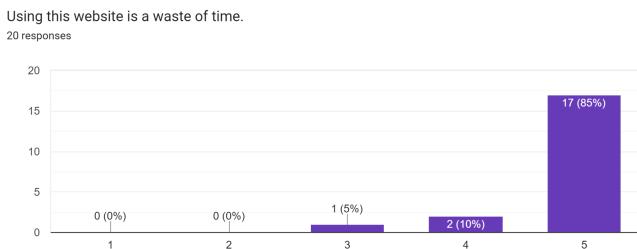
Graph 3.19

Remembering where I am on this website is difficult.

20 responses



Graph 3.20



The result is hence tabulated below.

QUESTION	Rate				
	1	2	3	4	5
1 This website has much that is of interest to me.	10(50%)	8(40%)	2(10%)	0	0
2 I can quickly find what I want on this website.	9(45%)	11(55%)	0	0	0
3 I feel in control when I'm using this website.	12(60%)	2(10%)	2(10%)	0	0
4 Everything on this website is easy to understand.	12(60%)	6(30%)	2(10%)	0	0
5 This website seems logical to me.	9(45%)	11(55%)	0	0	0
6 I feel efficient when I'm using this website.	13(65%)	7(35%)	0	0	0
7 Using this website for the first time is easy.	15(75%)	3(15%)	2(10%)	0	0
8 I get what I expect when I click on things on this website.	13(65%)	5(25%)	2(10%)	0	0
9 The pages on this website are very attractive.	13(65%)	7(35%)	0	0	0
10 This website helps me find what I am looking for.	13(65%)	6(30%)	1(5%)	0	0
11 It is difficult to move around this website.	0	0	1(5%)	5(25%)	14(70%)
12 This website needs more introductory explanations.	0	0	1(5%)	9(45%)	10(50%)
13 I don't like using this website.	0	0	0	10(50%)	10(50%)
14 This website is too slow.	0	0	1(5%)	7(35%)	12(60%)
15 This website is a poor User Interface(UI) design.	0	0	2(10%)	4(20%)	14(70%)
16 Learning to find my way around this website is a problem.	0	0	2(10%)	9(45%)	9(45%)
17 It is difficult to tell if this website has what I want.	0	0	0	10(50%)	10(50%)
18 This website has some annoying features.	0	0	5(25%)	7(35%)	8(40%)
19 Remembering where I am on this website is difficult.	0	0	2(10%)	5(25%)	13(65%)
20 Using this website is a waste of time.	0	0	1(5%)	2(10%)	17(85%)

Table 3.1 Result of evaluation

Remarks:

Rate of 1 - Strongly Agree

Rate of 2 - Agree

Rate of 3 - Average

Rate of 4 - Disagree

Rate of 5 - Strongly Disagree

IV. DISCUSSION

Based on the user testing, a significant majority of users (90%) expressed agreement that they have a strong interest in our website. Additionally, all users (100%) agreed that the pages on our website are very attractive. Furthermore, a portion of users (30%) disagreed with the statement that our website has a poor User Interface (UI) design. This positive feedback regarding the UI design can be attributed to the effective implementation of CSS, which has greatly enhanced the overall user experience and made the website looks more presentational.[1] Based on user feedback, the implementation of HTML which links pages together, has proven effective. This can be shown that all users (100%) reported being able to quickly find what they want on the

website, finding it logical, and feeling efficient while using it. Additionally, 90% of users expressed satisfaction with getting what they expect when clicking on elements and finding the website helpful in their search. With that, HTML is a crucial concept because HTML is a means of telling a website how to display a page. [5] Due to the implementation of PHP and MySQL, the majority of users (70%) felt in control, found everything easy to understand and disagreed that learning to navigate or remember their location on the website was problematic. All users (100%) disagreed with disliking the website, while over 75% disagreed that it needed more introductory explanations, was too slow, or was a waste of time. Hence, it is proven that the objective we are applying PHP is achieved because PHP is a server-side scripting language that allows our website to be truly dynamic and user interactive.[6] Moreover, CRUD (Create, Read, Update, and Delete) operations are manipulated through MySQL has proven that our website has fulfilled users' expectations. [3]

V. CONCLUSION

To wrap it up, The result section presents the key features and functionalities of the news aggregator, including news aggregation from different sources, user login, account creation, profile editing, user list viewing (admin only), and account deletion. User testing feedback indicates high satisfaction with the website, including the ability to quickly find the desired information, logical navigation, and efficient user experience. The implementation of important concepts such as CSS, HTML linking, PHP, and MySQL contributes to positive feedback on the user interface design. In brief, the developed news aggregator successfully addresses the challenges of information overload and fake news by providing a reliable platform for accessing news articles from diverse sources. The positive user feedback highlights the effectiveness of the implemented features and the user-friendly design. Future enhancements could involve further refining the UI design, addressing any remaining issues or suggestions from user feedback, and expanding the scope of news sources for aggregation.

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contributed to our knowledge and understanding of web development and related concepts. Overall, the collective efforts and support from everyone involved have been crucial in the successful completion of this manuscript. Thank you all for your contributions and assistance.

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