Development of a Journal Reading Website (Reading Room) as a Learning Media for Students in PTIK

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Abstract. The development of a journal reading website is a new modern approach for students to read various scientific journals. Along with the advancement of technology, various media for delivering learning materials to students have emerged, one of which is a website used by students to find sources of knowledge. However, there are still few websites that provide knowledge about journal materials to these students, resulting in low interest in reading journals. Therefore, a website has been created that contains various journals with different subjects. This website is developed using Tailwind CSS and HTML. The result of this research is a reading room website that contains scientific journals related to learning materials. Blackbox testing results show that all features function according to the website's intended functionality.

Keywords: Website, Journal, Tailwind CSS, HTML.

1 Introduction

As time progresses, technology also advances in the dissemination of information, including in the delivery of learning materials for students of the Informatics and Computer Technology Education program. One way to find learning materials is through scientific journals available on the internet. While to access journals available on the internet is through websites.

However, there are still few websites that contain journals that can be accessed at any time by students[1]. In addition, many journals are paid or locked on various other websites, making it difficult for students to access the journals they want to read[2]. Moreover, some students are still unfamiliar with journals, so they do not know how to open or read them[3]. Therefore, to address these issues, a solution was developed by creating a website for reading journals for free and informing students on how to open and read the journals available on the website.

The website was designed with the goal of providing a platform for PTIK students to read journals for free and to provide information to students on how to access and read journals.

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Thus, with the development of this journal reading website, it is hoped that it can enhance students' interest in reading and provide a source of information through journals to students.

2 Literature Review

2.1 Website

According to Fristanto, A website is a medium for delivering information or as a promotional tool that is effective and efficient, which can be accessed anywhere as long as it is connected to the internet[4]. While other said that A website is a series or a number of pages on the internet that have interrelated topics to present information[5]. Web also can be defined as a collection of pages that display information in the form of text data, image data, animation data, sound, video, and a combination of all of them, whether static or dynamic, forming an interconnected structure, where each is linked by networks of pages (hyperlinks)[6]. Based on the description, the author concludes that a website is an online medium for delivering information, consisting of a series of interconnected pages that are programmed in such a way as to display information.

2.2 Tailwind CSS

According to Yudhistira, Tailwind CSS is a CSS framework library used by web developers to quickly create website layouts, easily edit class styles, and make websites responsive[7]. Tailwind CSS is a utility-based CSS framework for creating the UI or appearance of web applications[8]. Being utility-based means that Tailwind only contains utility classes and does not have component classes like Navbar, Button, Card, Modal, etc. These components can be created using utility classes.

2.3 HTML

HTML, which stands for Hyper Text Markup Language, is a set of program codes that serve as the foundation for the visual representation of a web page[9]. It contains a collection of information stored within specific tags, which are used to format the intended information. As time and technology have advanced, various developments have been made to HTML, leading to the emergence of new technologies in the world of web programming[10]. Despite these advancements, HTML continues to stand firm as the foundation of web languages such as PHP, ASP, JSP, and others. The use of HTML itself is to build a website's layout that has applied semantic methods to facilitate each developer in the development and maintenance process[9].

2.2 Microsoft Visual Studio Code

Visual Studio Code (VS Code) is a lightweight and reliable text editor created by Microsoft for multi-platform operating systems, meaning it is also available for Linux, Mac, and Windows versions[11]. This text editor directly supports programming languages like JavaScript, Typescript, and Node.js, as well as other programming languages with the help of plugins that can be installed via the Visual Studio Code marketplace (such as C++, C#, Python, Go, Java, etc.) [12]. There are many features within Visual Studio Code, including IntelliSense, Git Integration, Debugging, and an extension feature that enhances the text

editor's capabilities[11]. These features continue to grow as Visual Studio Code versions evolve. Version updates for Visual Studio Code are also done regularly every month, setting it apart from other text editors[12]. One of the advantages of VS Code is the ability to install extensions or plugins that can help expand its functionality[13]. These extensions are available in a marketplace integrated with VS Code and can help optimize developers' time and productivity.

3 Methods

3.1 Use Case Diagram for Website

The first step in building this website is creating a use case diagram to simplify the development process[14]. A use case diagram helps visualize the interactions between users (actors) and the system (website), outlining the various functionalities that the website needs to support[15]. This diagram is essential because it provides a clear overview of the user's journey through the website, ensuring that all necessary features and interactions are identified and planned for[16]. This diagram will provide an overview of how users access the website and what they can access while using it, as well as the relationships between the pages within the Ruang Baca website. Below is the Use Case diagram for the Ruang Baca website:

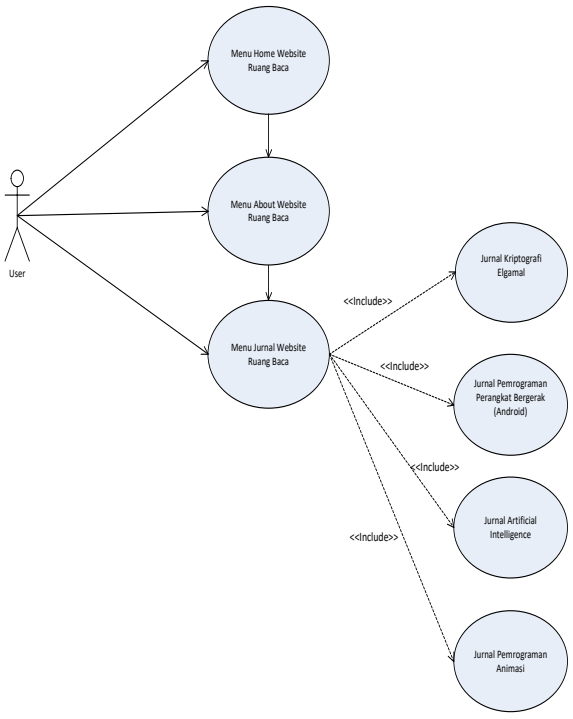

Figure 1. Use Case Diagram

3.2 Identification of Website Journal Materials

We conducted a survey by asking several PTIK students about materials they have not yet studied through journals, which will be included on the website. The materials they have not yet studied are presented in the table below:

Tabel 1 Material of Journals

No	Material	Details/Description
1	Advanced Web Development	Topics related to advanced front-end and back-end development techniques.
2	Machine Learning Applications	Introduction to machine learning and its applications in real-world scenarios.
3	Data Security in Cloud Computing	Exploration of security measures in cloud computing environments.
4	Internet of Things (IoT)	Understanding the integration and usage of IoT in modern systems.
5	Artificial Intelligence Ethics	Discussion on the ethical considerations of AI development and deployment.

4 Results and Discussion

4.1 Website Development

In the development process of this website, the steps involved include writing the website page code using Visual Studio Code software. Here, the author uses HTML and Tailwind CSS. The author will divide the website into several pages, including the main page, developer page, and journal list page.

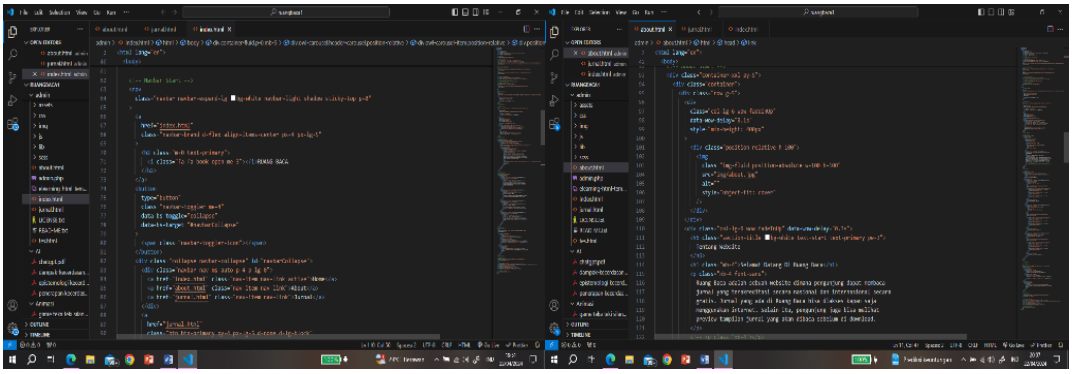

Figure 2. Website Development Code

On the home page, there is the title of the Ruang Baca website, information about the journals available on the Ruang Baca website, and the motto of the Ruang Baca website. On the main

page of the website, there is the motto of the Ruang Baca website and an explanation of what the website is about. Then, on the About page, a brief description is provided, explaining what the Ruang Baca website is and how to access the journals available on the website. After each page has been created, the next step is to link the pages together. The main page of the Ruang Baca website will contain the website's motto and a list of available journal materials.

Figure 3. Website Home Page

Below is the result of the code that was previously created, where this page will display a brief description of the Ruang Baca website and information about the website's developers.

Figure 4. Website About Page

Below is the display result of the journal list page code that has been created. There are four journal materials available on the Ruang Baca website: Mobile Programming (Android),

ElGamal Cryptography, AI Development, and Animation Programming. Each material contains three different journals. When one of the journals is clicked, a preview of the journal will appear, which can then be downloaded by the website users.

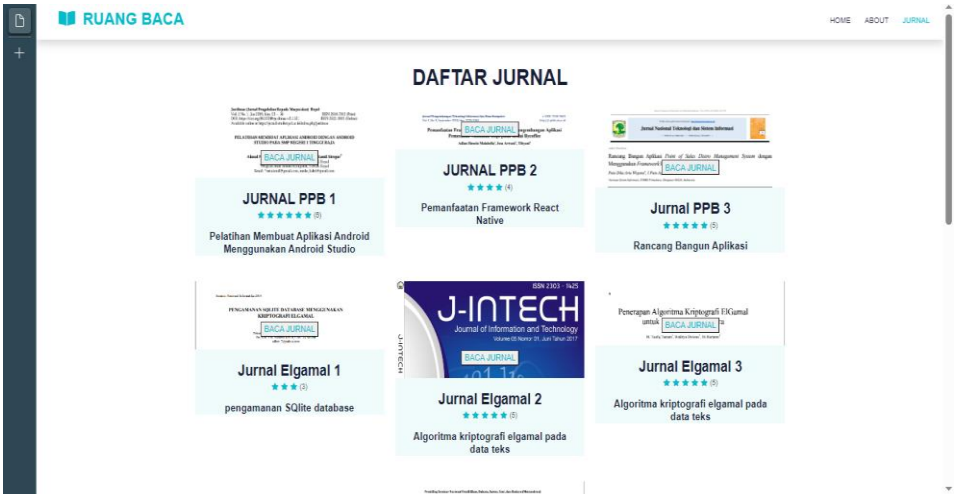

Figure 5. Website Journal List Page

4.2 Black Box Testing

Black box testing is a crucial part of the website development process. It focuses on testing the functionality of the website based on its specifications to ensure everything works as intended[17]. Below is a table summarizing the results of the black box testing for the Ruang Baca website:

Table 2 Black Box Testing Result

No	Test Case	Test Scenario	Expected Result	Result
1	Home Page of Ruang Baca Website	Press the "Read Now" button	When the button is pressed, the user is directed to the journal list menu	√
2	Home Page of Ruang Baca Website	Press the "About" and "Journal" buttons	When each button is pressed, the user is directed to the About and Journal pages	√
3	About Page of Ruang Baca Website	Press the "Home" and "Journal" buttons	When each button is pressed, the user is directed to the Home and Journal pages	√
4	Journal Page of Ruang Baca Website	Press the "Home" and "About" buttons	When each button is pressed, the user is directed to the Home and About pages	√

5	Journal Page of Ruang Baca Website	Press the "Read Journal" button on each journal	When the button is pressed, the user is directed to the journal's source website	√

Based on the results of the black box testing table for the Ruang Baca website, it can be concluded that the website's functionality operates smoothly and can be effectively used by PTIK students. The testing confirms that all key features and navigation elements work as expected, ensuring a user-friendly experience for accessing the journal materials.

4 Conclusion

The development of the Ruang Baca website has followed a structured process, starting with planning and the creation of Use Case diagrams, which guided the development of the website's functionality and layout. The website is designed to provide PTIK students and other users with easy access to a variety of journals, categorized under different topics such as Mobile Programming (Android), Cryptography, AI Development, and Animation Programming. The website consists of key pages including the Home, About, and Journal List pages. The Home page introduces users to the website's motto and purpose, while the About page provides a brief description of the website and its developers. The Journal List page allows users to browse through available journals, with the option to preview and download content. Through black box testing, the website's functionality has been thoroughly evaluated. The tests covered navigation between pages, accessing journal materials, and interacting with the website's features, such as the preview and download options. The results of these tests indicate that the website functions as expected, with all key features performing correctly. In conclusion, the Ruang Baca website is fully functional, user-friendly, and ready to be utilized by PTIK students for accessing a wide range of academic journals. The website's design and functionality meet the project's goals, providing a reliable resource for independent learning and research.

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