

Design and Development of an Online Legal Consultation Web Application

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ABSTRACT

Legal consultation services have become a widely discussed topic due to the increasing attention towards various legal issues that are currently prevalent. Legal consultation is considered a primary gateway to finding solutions in addressing legal challenges. In this research, the legal consultation process is conducted through a website platform. The research problem addressed is the implementation of a Web-based Rest API application to facilitate online legal consultations. The research methodology involves interviews, observations, and bibliometric research. The online legal consultation application, available in both Web and Mobile formats, is developed using the Javascript programming language and utilizes the Laravel framework integrated with PUSHER as the API, along with MySQL database as the server storage. The outcome of this research is the creation of a Rest API application for online legal consultations, providing a streamlined and efficient process for online legal consultations.

General Terms

Legal Technology, Online Consultation, Web Application Development.

Keywords

Legal Consultation, Online Legal Services, Online Legal Assistance, Web-Based Rest API.

1. INTRODUCTION

Legal assistance serves as a medium that can be utilized by everyone to assert their rights in the face of treatment that does not adhere to prevailing legal principles [1]. The law office of Satrio Tri Prabowo, S.H., as a unit providing legal services and consultations, is obligated to develop a strategic plan with objectives aligned with applicable legal norms. Legal services at the law office of Satrio Tri Prabowo, S.H., encompass information on legal services characterized by integrity and professional service. Corrupt legal services disregard ethical or moral principles as religious values [2]. In the realm of legal consultation, interviews play a crucial role as a method for collecting pertinent information. This approach often entails direct interaction between legal practitioners or consultants and clients, facilitating the acquisition of valuable data encompassing clients' perspectives, experiences, and perceptions regarding legal matters. The insights obtained through these interviews contribute significantly to a comprehensive understanding of clients needs and aid in formulating tailored legal solutions [3]. The author develops an online legal consultation application using the Laravel framework. Laravel is an open-source PHP framework with a Model-View-Controller (MVC) design used to build web applications [4]. The programming method for the system is carried out using the PHP programming language, which stands for "Hypertext Preprocessor" [5]. Relevant research refers to

prior or previous research that is pertinent to the research concept, serving as a reference or basis for developing the findings of earlier research [6]. Numerous studies have been conducted in the field of online legal consultation applications, including the research by Dihin Muriyatmoko et al. titled "Design and Development of Information Systems for Legal Consultation Services at Lpkbh Al-Baihaqy Surabaya." The aim of this research is to assist the underprivileged and legally uninformed individuals in understanding how to advocate for their rights by utilizing online legal consultation applications. Based on the identified issues, there is a need for legal consultation and assistance services to aid the community [7]. Another relevant study is conducted by Antonius Wahyu Sudrajat and Inayatullah titled "Design and Development of Android-Based Legal Consultation Information System." The objective of this research is to develop a web-based legal consultation application system on the Android platform to facilitate the public in obtaining legal information. Given the existing issues, there is a requirement for individuals or officials with legal expertise [8]. on the above issues, this research is conducted with the aim of designing a web-based application that prioritizes the privacy and security of individuals seeking legal consultation. The utilization of information technology is central to this research, involving data processing through computers and telecommunications. Information technology is the processing of data carried out by computers and telecommunications [9]. The author's hope is that this application will facilitate the legal consultation process for both clients and lawyer.

2. SYSTEM DESIGN

2.1 Flowchart System

Flowchart is a flowchart that illustrates the flow or work process of a system, flowchart is useful in order to understand the flow of the tool that can be explained in the system process. The design of this program is done by making a block diagram or Flowchart first, to make it easier when making the design login Users have the option to log in if they already have an account or register if they don't. If the login is successful, the user is directed to the chat page to start a consultation session with a consultant. For users not logged in, they fill out a registration form to create a new account before starting a consultation. The consultation process takes place through the chat feature, where the system connects the user with a consultant based on their needs. After the consultation is complete, the chat session ends. With this flow, users can efficiently utilize online legal consultation services, either through direct login or registration as needed.

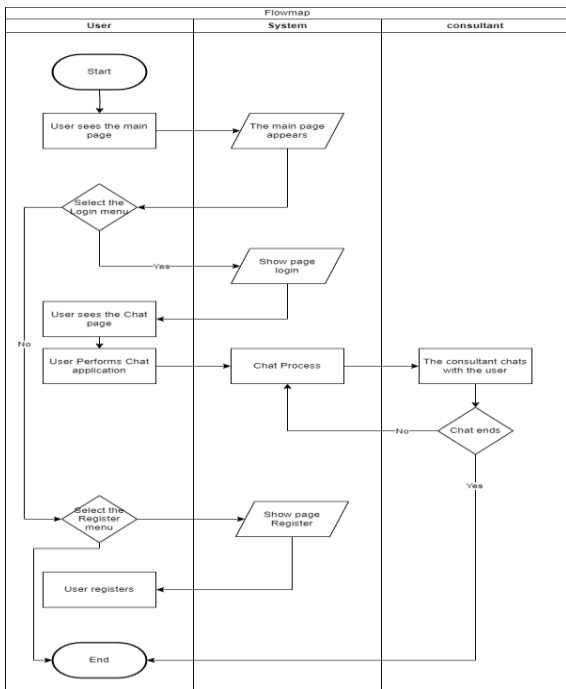


Figure 1 : Flowchart System

3. RESULT

3.1 Software Implementation

The following are the results of the overall software design of the Online Legal Consultation Web Application.

3.1.1 Dashboard Monitoring Interface

On this main menu page there is the name of the application, as well as an application report that contains a calculation of users who are active today and how many messages are sent today..

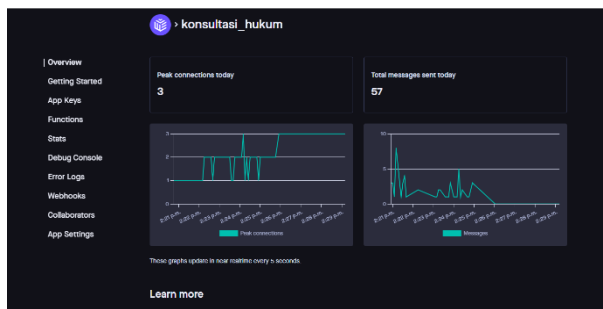


Figure 2 : Dashboard Monitoring

3.1.2 Login Menu Interface

The login menu is a page that displays a form for users to enter a username and password. If the data entered matches the database, the main menu will appear, but otherwise if the username and password are wrong, a login message will appear.

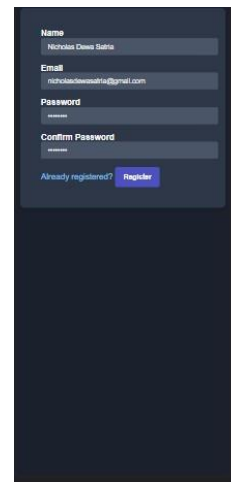


Figure 3 : Login Menu Display

3.1.3 Main Menu Interface

The main menu is a menu that appears after successful login and users can select the desired menu containing This page contains chat features with consultants and displays consultant name information. On this page there is also a select chat button that selects the consultant and a send button to send a message to the consultant.

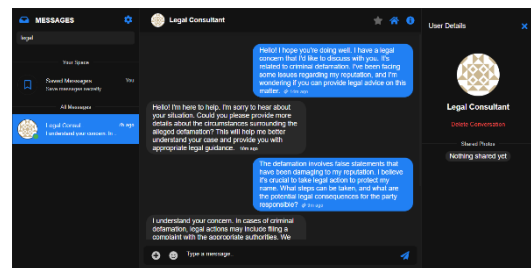


Figure 4 : Main Menu Interface

3.1.4 Delete Chat Interface

In this menu, users can select the chat message to be deleted by using the "Delete" button. After that, confirmation information will appear to confirm whether the user is sure they want to delete the message..

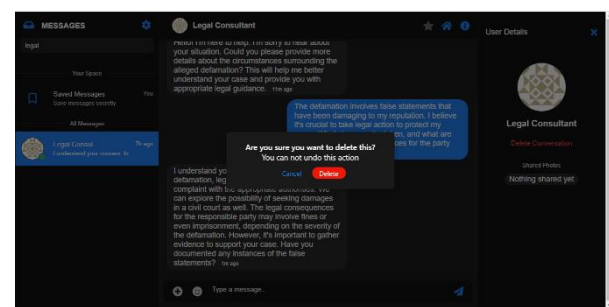


Figure 5 : Delete Chat Interface

3.1.5 Dark Mode Interface

When users switch to dark mode, the web display theme automatically changes to dark, and to enable or disable this, users can easily access the Dark Mode option available on the app's settings menu.

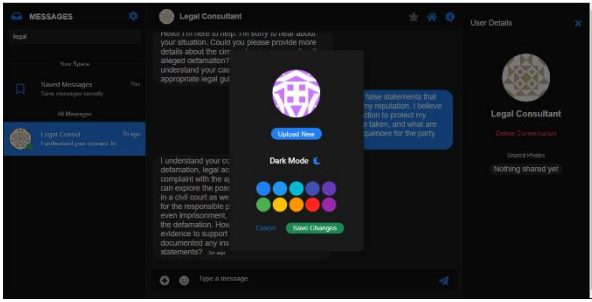


Figure 6 : Dark Mode Interface

3.1.6 Emoticon Selection Interface

In the Emoji feature, users can send a variety of emojis by selecting them through the emoji button..

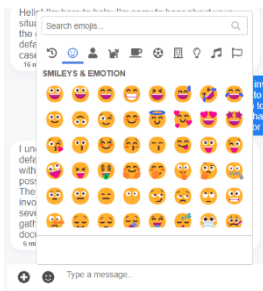


Figure 7 : Emoticon Selection Interface

3.1.7 Send File Menu Interface

In this feature, users can send files to consultants by pressing the "Send File" button and selecting the files to be sent from the user's device storage. File formats that can be sent include .txt, .docs, and .pdf..

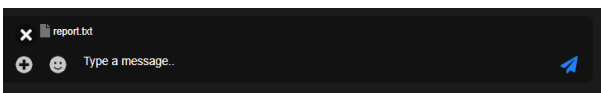


Figure 8 : Send File Menu Interface

3.1.8 Chat Yourself Notes Menu Interface

The chat yourself to take notes feature in the online legal consultation app allows users to jot down ideas, questions, or important information throughout the consultation process. With this feature, users can make personal notes directly in the chat, save questions they want to ask the legal consultant, or note down advice and information provided by the legal expert. This provides a more organized experience and makes it easier for users to better detail their legal issues, thus ensuring that the consultation runs efficiently and effectively..

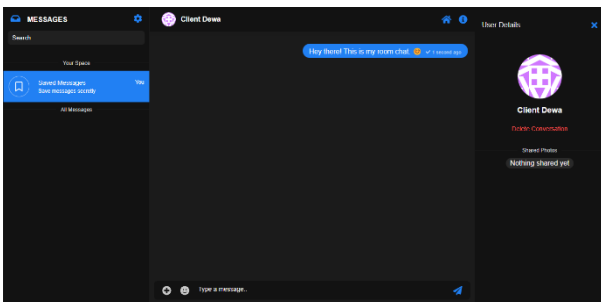


Figure 9 : Chat Yourself Notes Menu Interface

3.1.9 User Database Structure

This database table includes columns such as user ID, name, email (with index), email verification time, password, session token, data creation and change time, activation status, avatar file name, dark mode status, and user messenger color preference..

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	bigint(20)		UNSIGNED	No	None	AUTO_INCREMENT		Change Drop More
2	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
3	email	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	email_verified_at	timestamp			Yes	NULL			Change Drop More
5	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
6	remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
7	created_at	timestamp			Yes	NULL			Change Drop More
8	updated_at	timestamp			Yes	NULL			Change Drop More
9	active_status	tinyint(1)			No	0			Change Drop More
10	avatar	varchar(255)	utf8mb4_unicode_ci		No	avatar.png			Change Drop More
11	dark_mode	tinyint(1)			No	0			Change Drop More
12	messenger_color	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More

Figure 10 : User Database Structure

3.1.10 Messages Database Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	char(36)	utf8mb4_unicode_ci		No	None			Change Drop More
2	from_id	bigint(20)			No	None			Change Drop More
3	to_id	bigint(20)			No	None			Change Drop More
4	body	varchar(5000)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
5	attachment	varchar(255)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
6	seen	tinyint(1)			No	0			Change Drop More
7	created_at	timestamp			Yes	NULL			Change Drop More
8	updated_at	timestamp			Yes	NULL			Change Drop More

Figure 11 : Messages Database Structure

4. SYSTEM TESTING

The system testing phase for the online legal consultation web application is a comprehensive evaluation of its software components to ascertain their alignment with the intended functionality. In this testing process, the focus is placed on Black Box testing, a method that assesses the system based on its functional specifications without delving into the intricacies of design and code. The testing procedure initiates with a thorough examination of input-output interactions within the web application. This involves validating how data is received as input and processed, and subsequently, how the output is generated and presented to users. The goal is to ensure that these interactions operate seamlessly and accurately in accordance with the specified requirements. Following this, each web page of the application undergoes meticulous examination to verify its individual functionality. The objective is to assess whether all the features, services, and links embedded in each page operate as intended. This encompasses ensuring that user inputs are appropriately processed, relevant information is retrieved from databases, and the presentation of results is coherent and error-free. An integral part of system testing involves identifying and rectifying any errors or inconsistencies encountered during the testing process. This may include debugging code, addressing discrepancies in the user interface, and optimizing the performance of the web application to enhance user experience. By adopting a Black Box testing approach, the focus remains on the overall functionality of the online legal consultation web application, allowing for a systematic evaluation of its capabilities and performance. This testing methodology provides valuable insights into whether the application's functions and outputs align with the desired specifications, contributing to the overall robustness and reliability of the system.

4.1 Pusher API Testing

The exhaustive and methodical testing conducted on the Pusher API integration within the architecture of our online legal consultation web application has resulted in resounding success. This thorough examination has provided irrefutable

confirmation of the seamless assimilation of Pusher API functionalities, ensuring not only the fluid operation but also the optimal performance of pivotal real-time communication features, prominently featuring live chat and dynamic real-time updates. The triumph in this testing phase accentuates the heightened reliability and efficacy of the Pusher API within the intricate framework of our online legal consultation platform. The assurance that these real-time communication channels operate flawlessly and align precisely with the specific requirements of our platform represents a noteworthy achievement, significantly fortifying the overall functionality of our application. This successful integration of the Pusher API stands as a testament to our commitment to providing a technologically advanced and responsive platform for legal consultations. It not only bolsters the technical robustness of our system but also plays a pivotal role in elevating the end-user experience, fostering a dynamic and interactive environment conducive to seamless online legal consultations.

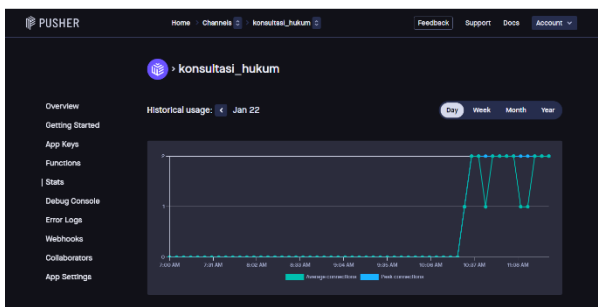


Figure 12 : Pusher API Testing

4.2 Android Responsive View Testing

The testing of Android responsive views within the web application involves a meticulous examination of the application's adaptability and responsiveness on Android devices. This testing phase scrutinizes various views, layouts, and components to ensure optimal display and functionality across a spectrum of Android devices, including different screen sizes, resolutions, and orientations. The Android responsive view testing process encompasses evaluating the alignment and scaling of graphical elements, such as images and icons, and assessing the fluidity and coherence of user interfaces across diverse Android platforms. The objective is to ensure that users accessing the web application from Android devices encounter a consistent and visually appealing interface, regardless of the device specifications. Furthermore, this testing phase delves into the examination of user interactions, navigation, and overall user experience on Android devices, ensuring that the web application seamlessly adapts to varying screen dimensions and orientations. The successful completion of Android responsive view testing attests to the application's commitment to delivering an optimal and user-friendly experience, reinforcing its adaptability and responsiveness across the diverse Android ecosystem.

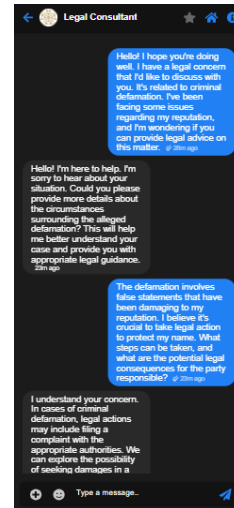


Figure 13 : Android Responsive View Testing

4.3 Error Logs Testing

In the specific context of our implementation of Pusher in the web application, I am pleased to report that, upon a thorough review of the error logs, there have been no instances of error logs recorded. This absence of error logs underscores the robustness and stability of the Pusher integration, signifying that the communication channels facilitated by Pusher, including real-time updates and live chat features, have been operating seamlessly without encountering significant issues or disruptions. This lack of recorded errors attests to the efficacy of our error-handling mechanisms, stringent testing protocols, and the successful mitigation of potential issues during the integration of Pusher. It reflects the meticulous attention to detail and the commitment to ensuring a smooth and error-free user experience within the online legal consultation platform. The absence of error logs in the Pusher integration is a positive indicator of the reliability and consistent performance of the real-time communication features. As we continue to monitor the application and its interactions with the Pusher API, we remain vigilant to swiftly address any emerging issues and proactively optimize the system's performance. This ongoing commitment to maintenance and improvement will further enhance the reliability of the Pusher integration, ensuring a seamless and uninterrupted user experience for our online legal consultation platform users.

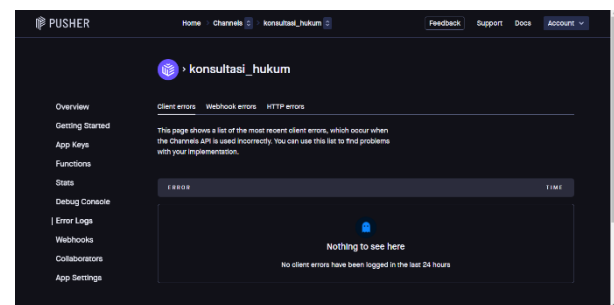


Figure 14 : Error Logs Testing

5. CONCLUSIONS

After successfully designing, developing, and integrating the Online Legal Consultation Web Application, it is crucial to recognize both its limitations and advantages that have influenced the outcomes of this research:

1. Leveraging JavaScript technology, integration with the Pusher API, and a MySQL database, the

application ensures reliable delivery of effective legal consultation services. The adoption of Visual Studio Code as the primary code editor and Laravel 8 as the framework reflects a commitment to a streamlined and expressive coding structure, enhancing overall development and functionality.

2. Users benefit significantly from time and cost savings, as the application eliminates the need for physical travel to legal consultation offices. Geographical barriers are removed, optimizing efficiency and reducing the financial burden associated with face-to-face meetings.
3. Online Legal Consultation Web Application successfully revolutionizes legal consultation by providing unparalleled accessibility. Users can seek legal advice without physical visits, accessing services efficiently through digital devices, eliminating time and travel constraints
4. While the Online Legal Consultation Web Application significantly enhances legal accessibility and efficiency, limitations include potential generalizability constraints, reliance on external technologies impacting reliability, success dependent on user adoption influenced by various factors, and challenges arising from complex legal and regulatory considerations beyond the study's scope.

For future enhancements in the Online Legal Consultation Web Application, the integration of advanced features such as real-time document collaboration and secure file sharing can be explored. However, potential limitations may arise concerning user data security and privacy, necessitating robust encryption measures to address these concerns effectively. Additionally, implementing an automated appointment scheduling system could further streamline the consultation process, although considerations for diverse user preferences and potential technical challenges should be addressed during implementation.

6. REFERENCES

- [1] A. R. Arif, "Pelaksanaan Pemberian Bantuan Hukum Terhadap Terdakwa Yang Tidak Mampu Dalam Perkara Pidana Di Kota Bandar Lampung," *FIAT JUSTISIA Jurnal Ilmu Huk.*, vol. 9, no. 1, pp. 103–113, 2016, doi: 10.25041/fiatjustisia.v9no1.591.
- [2] B. Manan, A. Abdurahman, and M. Susanto, "Pembangunan Hukum Nasional Yang Religius: Konsepsi Dan Tantangan Dalam Negara Berdasarkan Pancasila," *J. Bina Mulia Huk.*, vol. 5, no. 2, pp. 176–195, 2021, doi: 10.23920/jbmh.v5i2.303.
- [3] Ardiansyah, Risnita, and M. S. Jailani, "Teknik Pengumpulan Data Dan Instrumen Penelitian Ilmiah Pendidikan Pada Pendekatan Kualitatif dan Kuantitatif," *J. IHSAN J. Pendidik. Islam*, vol. 1, no. 2, pp. 1–9, 2023, doi: 10.61104/ihsan.v1i2.57.
- [4] D. Mediana and A. I. Nurhidayat, "Rancang Bangun Aplikasi Helpdesk (A-Desk) Berbasis Web Menggunakan Framework Laravel (Studi Kasus di PDAM Surya Sembada Kota Surabaya)," *J. Manaj. Inform.*, vol. 8, no. 2, pp. 75–81, 2018, [Online]. Available: <http://ejournal.ukrida.ac.id/ojs/index.php/TIK/article/view/1495/1617>
- [5] T. Rahmasari, "Perancangan Sistem Informasi Akuntansi Persediaan Barang Dagang Pada Toserba Selamat Menggunakan Php Dan Mysql," *is Best Account. Inf. Syst. Inf. Technol. Bus. Enterp. this is link OJS us*, vol. 4, no. 1, pp. 411–425, 2019, doi: 10.34010/aisthebest.v4i1.1830.
- [6] Y. Firdaus, S. Syaipuddin, and A. Suryadi, "Aplikasi Game Interaktif Pengenalan Huruf Berbasis Android," *J. Ris. dan Apl. Mhs. Inform.*, vol. 4, no. 02, pp. 280–287, 2023, doi: 10.30998/jrami.v4i02.2551.
- [7] D. Muriyatmoko, B. Sholeh, and S. N. Utama, "Rancang Bangun Sistem Informasi Layanan Konsultasi Bantuan Hukum Lpkbh Al-Baihaqy Surabaya," *J. Inform. Polinema*, vol. 7, no. 1, pp. 7–16, 2020, doi: 10.33795/jip.v7i1.386.
- [8] A. W. Sudrajat and I. Inayatullah, "Rancang Bangun Sistem Informasi Konsultasi Hukum Berbasis Android," *J. Teknol. Sist. Inf.*, vol. 2, no. 1, pp. 1–11, 2021, doi: 10.35957/jtsi.v2i1.844.
- [9] D. Setiawan, "Dampak Perkembangan Teknologi Informasi dan Komunikasi Terhadap Budaya," *J. SIMBOLIKA Res. Learn. Commun. Study*, vol. 4, no. 1, p. 62, 2018, doi: 10.31289/simbollika.v4i1.1474.