

WEB-BASED BICYCLE RENTAL SYSTEM WITH NOTIFICATION FEATURES

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ABSTRACT - One of the significant factors of the existence and growth of cities is transportation. The aim of this study to design and develop a bicycle rental system to make it easier and more effective for users and leasing businesses to complete bicycle rentals. The Software Development Life Cycle (SDLC) is a clearly laid out and organized series of steps used in software engineering to create a variety of software products. Waterfall model is one of the System Development Life Cycle (SDLC) method of the strategies for systematic and sequential software development, covering environmental analysis, application design, coding, testing and application maintenance to keep an application up and running. An online renting system were created to allows customers to rent at any time. It can also help reduce the number of missed or double-booked rentals. Various electronic payment methods, such as credit cards, debit cards, digital wallets, and online bank transfers, were introduced. The user receives a message or alarm via Telegram notification. Overall, this system was developed to maintain thorough records of both the bicycle and the customers. This approach will make the process more effective and ensure the security of bicycle rentals. It is also the finest technique to improve management standards and lessen time pressures.

Keywords: web-based, rental, Telegram notification

1. INTRODUCTION

Bicycles have played a significant part in transportation strategies in recent years due to their advantages for the environment and human health (Abidin et al., 2018). Cycling does not pollute the environment or release fumes, making it the most ecologically friendly mode of transportation. In this scenario, it is essential to develop more environmentally friendly modes of transportation, such as public transit, bicycles, and foot traffic to create a sustainable transportation system that strives for energy independence. As of right now, there is no manual that students may use as a resource when looking for bicycle rental in UiTM. The idea behind the bicycle rental system was to establish a modest system of rentals so that students could pick up bicycles on campus and ride them anywhere and whenever they pleased (Kiefer et. al., 2016). Therefore, this project will develop a system that can ease the business owner and users. This system will be implemented by using notification features so it will remind the users from time to time to return the bicycle.

2. METHODOLOGY

A waterfall model will be used to create a complete and successful web-based system. Waterfall model is one of the System Development Life Cycle (SDLC) method of the strategies for systematic and sequential software development, covering environmental analysis, application design, coding, testing and application maintenance to keep an application up and running. Software Development Life Cycle (SDLC) is described and defined using a variety of methods, stages and tools (Alexandra Florea et al., 2019). The development process itself is divided into several stages including the following: Planning, Analysis, Design, Implementation, Testing and Documentation.

3. RESULTS AND DISCUSSION

In conclusion, users have successfully evaluated each list that has to be checked to see whether it is functioning effectively or not. Users appreciated the convenience of being able to check bicycle availability, make reservations, and receive notifications about rental confirmations and updates through the web interface.

4. NOVELTY OF RESEARCH / PRODUCT

With the web-based bicycle rental system, there is a lot of benefits of the implementation include transport flexibility, reductions to vehicle emissions, health benefits, reduced congestion and fuel consumption, and financial savings for

individuals. Furthermore, the system allows flexibility and convenience for students in the UiTM Arau, who can automate the free rental bikes service by using the web-based rental system. Being a public service, bikes removal and return is very fast. With no need of doing proceed in desk with the service works continuously and does not depend on office hours or the availability of an operator.

5. CONCLUSION

In conclusion, web-based bicycle rental system with notification features will make the process more effective and ensure the security of bicycle rentals. This method makes it simpler for UiTM to rent bicycles and manage their income while assisting students in rapidly accessing bicycle information through all rental bicycle records and information online at any time using the campus bicycle rental system.

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