Design and Implementation of a Web-Based Delivery Service for President University: A Case Study of President's Pick-Up

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Abstract— The advent of web-based delivery services has brought about a revolutionary change in the transportation of packages and documents, offering unprecedented convenience and efficiency to users. In line with this trend, President's Pick-Up, a dedicated platform implemented with PHP and MySQL, emerged to cater to the package delivery needs of President University students. This thesis investigates the impact of President's Pick-Up as a web-based delivery service on user satisfaction, efficiency, and speed of package delivery within the President University community. Leveraging the power of PHP and MySQL, President's Pick-Up provides a user-friendly website platform for students to conveniently send packages to different dormitories on campus. The research evaluates the effectiveness of President's Pick-Up in meeting user needs, tracking package deliveries in real-time, and enhancing the overall package delivery experience for students. The study contributes valuable insights into PHP and MySQL-driven web-based delivery services and aims to guide future improvements in similar platforms catering to academic institutions.

Keywords— Web-based delivery services, PHP, MySQL, user satisfaction, efficiency, package delivery, President's Pick-Up, real-time tracking, academic institutions.

I. INTRODUCTION

The advent of web-based delivery services has revolutionized the transportation of packages and documents, offering unprecedented convenience and efficiency to users. In line with this trend, President's Pick-Up has emerged as a dedicated platform, created using PHP and MySQL, catering to the package delivery needs of President University students. This thesis investigates the impact of using President's Pick-Up, a web-based delivery service, implemented with PHP and MySQL, on user satisfaction, efficiency, and speed of package delivery within the President University community.

President University, renowned for its academic excellence, hosts a diverse community of students residing in different dormitories across the campus. However, traditional delivery methods often pose challenges and limitations, necessitating the development of an innovative solution tailored to the specific needs of the university community. Leveraging the power of PHP and MySQL, President's Pick-Up addresses these challenges by providing a user-friendly website platform for students to conveniently send packages or documents to any of the five dormitories: Student Boarding House, New Beverly Hills, Elvis, Dcataluna, and Djava. The implementation of PHP and MySQL enables efficient data management, seamless interactions, and robust functionalities on the President's Pick-Up website.

The delivery center, strategically located at Bandara Soekarno Hatta, serves as the hub for seamless and efficient package transportation, facilitated by the underlying PHP and MySQL infrastructure. This technology stack allows for secure storage, retrieval, and manipulation of data, ensuring smooth operations and reliable tracking of packages throughout the delivery process.

This research focuses on examining the effectiveness of President's Pick-Up, implemented with PHP and MySQL, as a web-based delivery service within the President University context. The study aims to evaluate how the usage of the PHP and MySQL-powered website platform influences user satisfaction, as well as the efficiency and speed of package delivery. By investigating these aspects, the research seeks to shed light on the effectiveness of web-based delivery services, driven by PHP and MySQL, in enhancing the overall package delivery experience for students.

The relevance of this research lies in the growing need for reliable and user-centric delivery services in

educational institutions. As students frequently require the transportation of packages or documents, an efficient and seamless delivery system becomes paramount. President's Pick-Up, utilizing the power of PHP and MySQL, bridges this gap by offering a web-based platform specifically designed to meet the unique requirements of President University students. Understanding the impact and effectiveness of this PHP and MySQL-powered service can provide valuable insights for both the university administration and the web-based delivery industry as a whole.

The primary objective of this research is to evaluate the effectiveness of President's Pick-Up, implemented with PHP and MySQL, as a web-based delivery service for President University students. Specifically, the study aims to achieve the following objectives:

1.   To assess the impact of using the PHP and MySQL-powered President's Pick-Up website on user satisfaction throughout the package delivery process.

2.   To analyze the influence of the PHP and MySQL implementation on the efficiency and speed of package delivery within the President University community.

By accomplishing these objectives, this research endeavors to contribute to the knowledge and understanding of PHP and MySQL-driven web-based delivery services, partic as a basis for enhancing the service provided by President's Pick-Up, leveraging the power of PHP and MySQL, and potentially guiding future improvements in similar platforms catering to academic institutions.

II.   LITERATURE REVIEW

The emergence of web-based delivery services, driven by technologies such as PHP and MySQL, has transformed package transportation, offering unprecedented convenience and efficiency to users. This section provides an overview of relevant literature, focusing on web-based delivery services, user satisfaction, efficiency, and the role of PHP and MySQL in enhancing the functionality and performance of such platforms.

A. Web-Based Delivery Services

Web-based delivery services have gained significant popularity due to their ability to streamline package transportation through online platforms. Previous studies have highlighted the advantages of web-based delivery services, emphasizing the ease of tracking for the users. For example, a study in [1] conduct a survey on customer preferences for web-based delivery services, finding that users/customers need access to track the package in real-

time using the provider's application or website. Hence, the admin must update the package position during the shipping process. This literature suggests that web-based delivery services have the potential to enhance the overall package delivery experience for users and provides them with transparency and convenience by allowing them to track their packages in real time.

B. User Satisfaction

User satisfaction is a critical factor in evaluating the effectiveness of web-based delivery services. The study in [2] explores that by offering services like quick deliveries, accurate deliveries, and friendliness, package delivery companies can provide exceptional service and boost customer satisfaction. Also, a study in [3] stated that high service quality is necessary to achieve high customer satisfaction levels, which frequently results in positive behavioral intentions. Understanding the factors that contribute to user satisfaction is crucial for the successful implementation of President's Pick-Up and its impact on user satisfaction within the President University community.

C. Efficiency and Speed of Delivery

Efficiency and speed are key performance indicators for web-based delivery services. Users expect their packages to be delivered promptly and in optimal condition. Previous studies have examined various factors that influence delivery efficiency and speed, including delivery methods, and tracking system. For instance, a study in [4] stated that delivery services such as PT. Pos Indonesia is providing excellent service to its consumers by offering a wide range of services. Not to mention, the study in [5] found out that all shipping service providers presently use a tracking system, which can aid with delivery timeliness and accuracy. Considering President's Pick-Up's implementation with PHP and MySQL, it is essential to explore how these technologies contribute to the efficiency and speed of package delivery within the President University community.

D. Role of PHP and MySQL in Web-Based Delivery Services

PHP and MySQL have become the most popular web development tools due to its free and open-source nature [6]. PHP, as a server-side scripting language, enables the dynamic generation of web content and seamless integration with databases. MySQL, a popular relational database management system, ensures efficient data storage, retrieval, and management. Several studies have examined the advantages of PHP and MySQL in web development, including their scalability, reliability, simplicity and convinience. For example, a study in [7] stated that MySQL offers a simple and reliable security

system while offering a free license, enabling you to add and delete data, sort, and conveniently and quickly search for relevant records. On the other hand, PHP provides frameworks to write original program code more efficiently and quickly, since Web applications have a complex structure. Also, frameworks support scalability, long-term upkeep, adherence to development standards, and code organization. Understanding the role of PHP and MySQL in the design and implementation of President's Pick-Up is crucial to evaluating its overall effectiveness and performance.

III.   DESIGN & IMPLEMENTATION

Implementation through the development of a user-friendly and effective platform that streamlines the parcel delivery procedure. The general architecture, user interface design, database schema, and key operations will all be covered.

A. System Architecture

The system for delivering websites uses a client-server architecture, with Native PHP used to build the server-side implementation and MySQL to control the database.

The client side of the system is a web browser where the user interacts with the website. The website is developed using PHP and combine it with TailwindCSS for the design

The server side is developed using the PHP with MySQL. It manages all of the website delivery package system's essential functions, using the concept of CRUD (Create, Read, Update, and Delete) to develop server-side websites.

First of all, CREATE is an operation to add data to the mysql database, The create operation adds one or more new records with distinct field values in a table.

Second of all, a database table's records are returned by READ depending on a set of search parameters. All records and any or all fields may be returned by the READ operation.

Third of all, UPDATE is used to modify existing records in the database. In case there is an error in CREATE data, we can fix it without having to delete the data in the database.

And last but not least, DELETE functions to delete a record or data contained in the database.

B. Database Schema

Figure 1. Entity Relationship Diagram

Based on Figure 1, we can see that the "order" table is the central table that has many relationships with other entities in this database program. The entities in the "order" table that are related to entities in other tables include sender_id, recipient_id, courier_id, service_id, item_id, and destination_id.

In the above ERD, sender_id in the "orders" table is a foreign key from the sender_id column in the "senders" table. Likewise, recipient_id in the "orders" table is connected to recipient_id in the "recipients" table, courier_id in the "orders" table is linked to courier_id in the "couriers" table, service_id in the "orders" table is related to service_id in the "services" table, destination_id in the "orders" table is associated with destination_id in the "destinations" table, and item_id in the "orders" table is connected to item_id in the "items" table.

This is done to maintain data security and prevent data loss. By creating foreign key relationships between two entities, data and information in the database are well-maintained, and it helps anticipate data loss or compromised data validity. The ERD also indicates that some entities in one table can be related to several entities in other tables, creating interrelated relationships among these entities.

With these relationships, referential integrity in the database can be well-preserved, and data in various tables are accurately linked, resulting in an efficient, consistent, and reliable database system.

It is essential to remember that the value of sender_id in the "order" table cannot be filled with data that does not exist in the sender_id column of the "sender" table. Instead, it is the responsibility of the administrator to update and add sender_id data, or the system is designed to update data automatically.

As a result, the data in the sender_id column of the "order" table will always be valid, as well as the foreign key data in other tables. Before inserting data into a column that refers to a foreign key, the relevant foreign key data must already exist in the referenced column of the reference table.

With this arrangement, referential integrity within the database remains intact, and the data in various tables will always be consistent and valid. This ensures that the relationships between data in different tables are well-maintained, making the database more efficient, consistent, and reliable.

This rule also applies to other columns that act as foreign keys in this program. Each column that acts as a foreign key must reference existing data in the referenced column of the reference table before data can be inserted.

C. User Interface Design

The user interface is made to be responsive and intuitive, giving senders and recipients a smooth experience. To avoid chaos and disarray, the design is kept simple and minimalistic.

The user interface will be divided into three sections, mainly the Admin Panel, User Page, and Courier Page.

1. Admin Panel

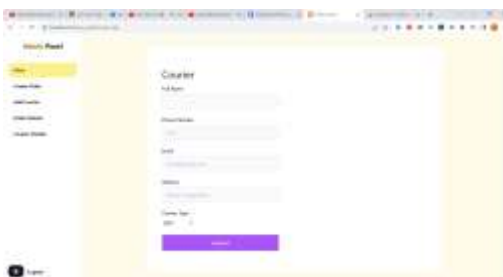Figure 2. Sender and Recipient Form

Figure 3. Courier Form

Figure 4. Courier Detail

Figure 5. Order Detail
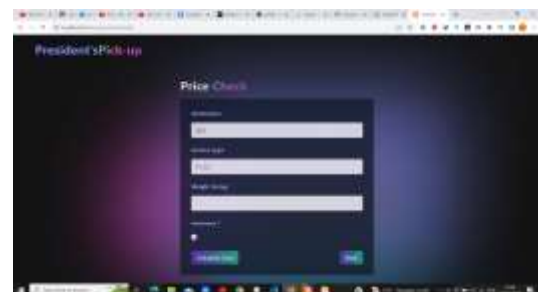
2. User Page

Figure 6. User Dashboard

Figure 7. Price Check Page

Figure 8. Price Check Page

Figure 9. Tracking Page in User Dashboard

3. Courier Page

Figure 10. Courier Dashboard

IV. RESULT

With the implementation of both PHP and MySQL, the website has four main features that will be highlighted.

A. Home Page and Package Tracking

The first page that can be accessed by universal users and admins. This page also has an interactive appearance, there are animations that spoil the eyes. so that it becomes one of the attractions for consumers to use President's Pick-up as a delivery service. On the home page, there is a text box that allows users to enter their delivery receipt number, then there is a search button to go further more about delivery status.

B. Admin Panel

On the admin panel, there are several pages, namely the main page, create order, add courier, order details, and courier details. on the main page, there is some information such as the total courier and the specific status of the package sent will be dropped off where. There is also the status of packages that have been delivered, lost and processed.

C. Courier Page

The courier page, a protected website, can only be accessed by approved couriers. Couriers can check the status of delivery orders, including whether they have been processed, delivered, or lost, under the Validate part of the website.

D. Sender and Recipient Dashboard

By inputting the location, service type, weight, and insurance information in the price check section of the website, users may find out how much it will cost to send their item. The user fills out a form with their location, service preference, weight, and insurance information. The choices are SBH, NBH, Elvis Tower, DJava Residence, and D'Cataluna; they are all available at the same delivery cost. There are five different service types available: EZ, Eco, immediate, super, and same-day, with different delivery costs for each. The user must enter the kilogram weight of the shipment.

If the user chooses insurance, shipping will cost them an extra 2%. After the website has computed the total cost based on the service type, weight, and insurance options the user has selected, it then displays it to them.

V. CONCLUSION

In conclusion, this thesis investigated the impact of President's Pick-Up, a web-based delivery service implemented with PHP and MySQL, on user satisfaction, efficiency, and speed of package delivery

within the President University community. By leveraging the power of PHP and MySQL, President's Pick-Up addressed the challenges posed by traditional delivery methods and provided a user-friendly platform for students to conveniently send packages or documents to different dormitories on campus.

Through the literature review, it was evident that web-based delivery services driven by PHP and MySQL offer convenience, transparency, and efficiency, as users can track their packages in real-time. User satisfaction was identified as a critical factor for successful delivery services, and efficiency and speed of delivery were key performance indicators.

The design and implementation of President's Pick-Up demonstrated a robust system architecture, employing Native PHP on the server-side and MySQL for database management. The database schema ensures data security and referential integrity, making the system efficient, consistent, and reliable.

The website's user interface was designed to be responsive and intuitive, providing a smooth experience for senders and recipients. The system also incorporated features like package tracking, admin panel, and sender/recipient dashboards, enhancing the overall user experience.

By accomplishing the objectives of evaluating user satisfaction, efficiency, and speed of package delivery, this research shed light on the effectiveness of web-based delivery services, specifically President's Pick-Up, in catering to the unique needs of President University students.

In conclusion, President's Pick-Up, implemented with PHP and MySQL, proved to be an effective and user-centric web-based delivery service for President University students. The platform offered convenience, transparency, and efficient package delivery, leading to increased user satisfaction. The combination of PHP and MySQL technologies enabled seamless interactions and reliable data management, contributing to the system's overall efficiency and speed of delivery.

This research provides valuable insights for both the university administration and the web-based delivery industry, serving as a basis for further enhancing President's Pick-Up and potentially guiding future improvements in similar platforms catering to academic institutions. The success of President's Pick-Up demonstrates the potential of PHP and MySQL-driven web-based delivery services in revolutionizing package transportation and meeting the evolving needs of modern educational communities.

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