Parcel Tracking System

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Abstract: The Courier Parcel Tracking System project is developed to enhance delivery efficiency, transparency, and customer satisfaction by providing a modern solution for parcel management. It offers real-time tracking and instant notifications to keep users informed about the status of their deliveries. Replacing the traditional manual tracking method, the system introduces an intelligent, efficient, and user-friendly interface that ensures greater effectiveness in the delivery process. The project is built using HTML, CSS, JavaScript, PHP, and MySQL, making it a reliable and interactive platform for managing courier services.

Keywords: tracking, parcel, delivery, notification, staff offices management

INTRODUCTION

In today's digital era, efficient and transparent courier services are in high demand, as traditional tracking methods are often slow and error-prone. This project develops a modern courier tracking system using PHP for robust server-side functionality and JavaScript for dynamic, user-friendly front-end interactions. Designed with a modular architecture, the system supports real-time tracking, barcode scanning, delivery verification, admin reporting, and integration with payment systems and third-party APIs. By enhancing communication, reducing human errors, and promoting transparency, the system provides a scalable, secure, and adaptable solution that improves operational efficiency and ensures long-term customer satisfaction.

PROBLEM

Conventional courier services rely heavily on manual tracking and paperwork, which often results in delays, misplaced parcels, and weak communication among senders, receivers, and service providers. Customers are left uncertain about the real-time location and status of their parcels, while administrators face challenges in managing daily operations, monitoring delivery progress, and generating accurate records. These limitations cause frequent errors, higher operating costs, and reduced customer satisfaction. With the rapid growth of e-commerce and the increasing demand for faster, more reliable deliveries, there is a clear need for a digital courier parcel tracking system that ensures real-time updates, transparent communication, and streamlined management for both customers and service providers.

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APPROACH

This system consists of three roles: Admin, User and Delivery. For the User, they can easily view the home page, services, rules, branch information, and contact details. Users can also track parcels and calculate parcel prices. To access these features, the user must register and log in with a valid email and password. If the credentials match the records in the database, the user is granted access to available services. After completing their tasks, users can log out of the system whenever they want.

For the Admin, they also need to log in with an email and password. Once verified, the admin is directed to the dashboard, where they can view system statistics and manage different components. The administrator can manage states, regions, and offices, handle payments, manage staff, set parcel prices, assign deliveries, send and view notifications, manage parcels, and generate reports. This provides the administrator with full control over the courier system. Like users, administrators can also log out from the system. Figure 1 illustrates the System Flow Diagram for Admin and User, showing the processes and functionalities available for both roles.

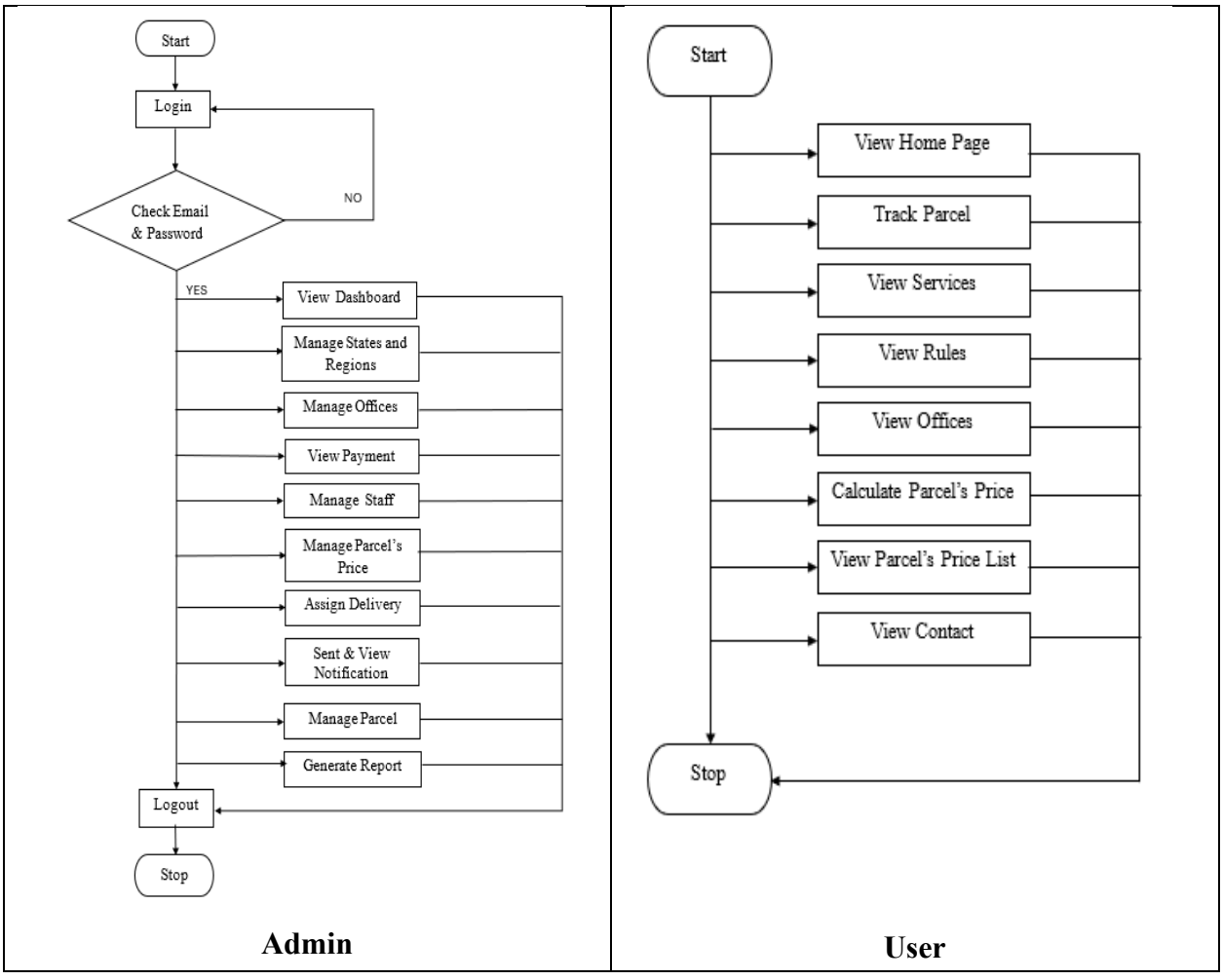

Figure 1: System Flow Diagram for Admin and User

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For the Delivery, staff can start with login and email/password verification. If the login is successful, users can view the dashboard, check parcels, or scan parcels. Finally, they log out and the system ends. Figure 2 illustrates the System Flow Diagram for Delivery Staff, showing the step-by-step process from login to parcel management and logout.

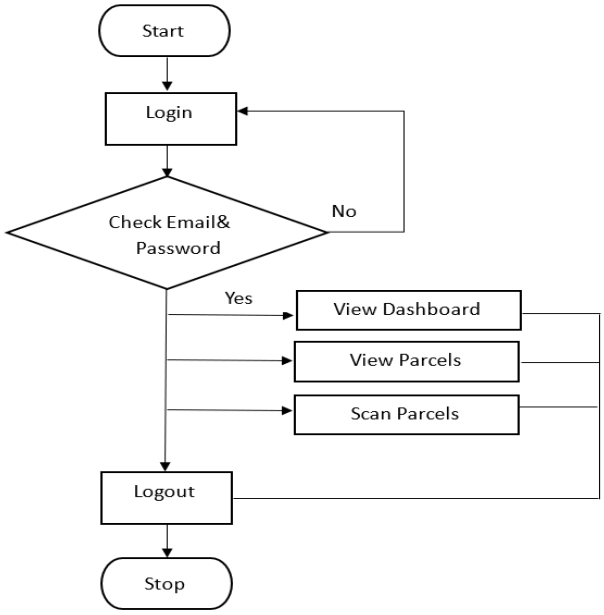

Figure 2: System Flow Diagram for Delivery

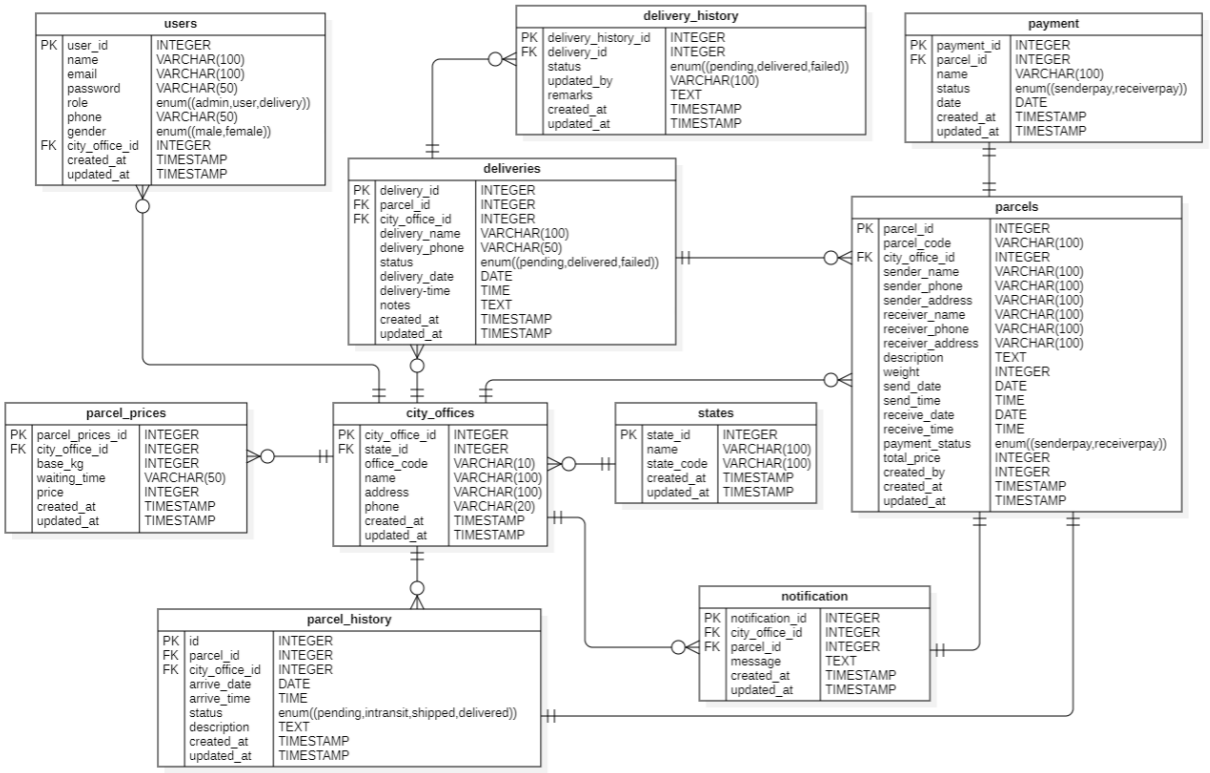

Figure 3: Database Design

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This database diagram is for a parcel delivery system, managing users, parcels, deliveries, payments, and notifications. The parcels table is central, storing sender/receiver information, addresses, weight, timing, and price. Linked tables include payments (who pays), delivery history and parcel history (tracking status and movement), and deliveries (actual delivery actions). Users manage roles (admin, customer, delivery staff), while city_offices and states define locations. Parcel_prices handle cost rules, and notifications keep customers updated. This database design includes the full process from parcel creation to delivery and payment. Figure 3 illustrates the Database Design of the courier parcel tracking system.

RESULTS

The implementation of the Courier Parcel Tracking System webpage enables users to check the delivery status of their parcels by entering a tracking number into the search field. Once submitted, the system retrieves data from the backend database and displays important details such as the sender's and receiver's information, ensuring transparency between both parties. The parcel's journey is presented in a chronological timeline, with each update including the date, time, and current status, showing the progress from parcel registration, sorting, dispatch, transit, out-for-delivery, and final delivery confirmation. To enhance accessibility, the system also supports QR code scanning, allowing customers to quickly access their parcel information without manually typing the tracking number. Designed with a simple, user-friendly interface, the webpage categorizes information clearly, making it easy for users to understand the status updates at a glance. Figure 4 illustrates the implementation of the system's parcel tracking interface, while Figure 5 demonstrates the calculation of parcel prices within the system. Figure 6 presents the parcel's price list, which provides customers with a clear overview of charges based on destination and parcel type. This implementation not only improves customer experience but also reduces the workload on courier service staff by enabling self-service tracking and real-time status monitoring.

Figure 4: Implementation of this System

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Figure 5: Calculate Parcel's Price of this System

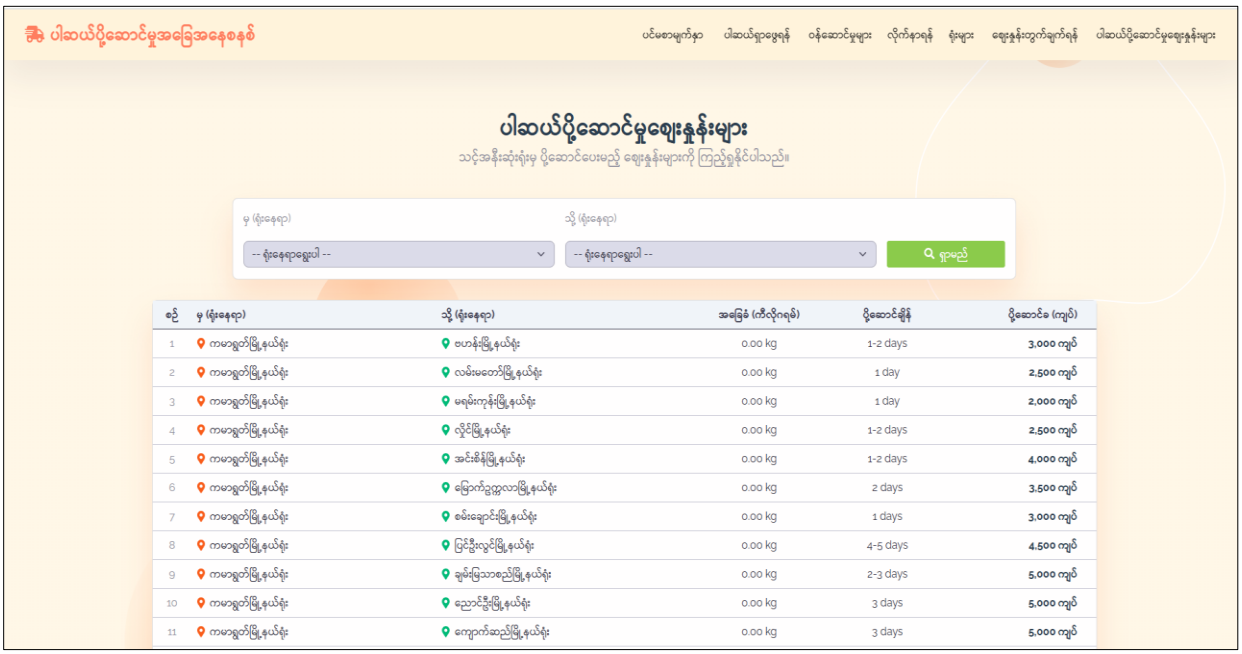

Figure 6: Parcel's Price Lists of this System

In conclusion, the courier parcel tracking system is an essential tool for both customers and logistics companies in today's fast-paced delivery environment. By providing real-time tracking, detailed status updates, and historical delivery records, it ensures that parcels are monitored accurately at every stage of transit. The system improves operational efficiency by automating processes, reducing human errors, and streamlining communication between offices, drivers, and customers. It also strengthens customer trust through transparency and reliability, while enabling courier companies to optimize routes, manage resources effectively, and respond promptly to

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issues. Ultimately, this system contributes to faster, safer, and more dependable delivery services, supporting the growth and competitiveness of the logistics industry.

REFERENCES

[1] Pressman, R.S,&Maxim,B.R,"Software Engineering: A Practitioner's Approach", 9th Edition, McGraw-Hill Education, 2020.

[2] Nixon, R. O'Reilly Media, " Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5", 5th Edition,2018.

[3] Ullman, J.D, & Widom, J, "A First Course in Database Systems ",3rd Edition, 2016.

[4] Nixon, R, " Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5", 9th Edition,2018.

[5] Heizer, J., Render, B., & Munson, C. "Operations Management: Sustainability and Supply Chain Management", 13th Edition,2020.

[6] Hoffer, J.A., Ramesh, V., & Topi, H. "Modern Database Management", 12th Edition, 2016.

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www.ucsh.edu.mm