

Design and Implementation of a Secure Web-Based Parking Management System

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Abstract: *The transition from manual to digital administrative processes is essential for modern logistical infrastructure. This paper presents the design and implementation of a Web-Based Parking Management System (PMS) aimed at rectifying systemic inefficiencies, data redundancy, and lack of financial transparency in vehicle parking facilities. The system utilizes a Three-Tier Web Architecture leveraging the LAMP stack (Linux, Apache, MySQL, PHP) to establish a centralized solution for real-time occupancy tracking and financial transaction management. A significant focus of this work is the security hardening of the application, specifically the mitigation of SQL Injection vulnerabilities through Prepared Statements and the implementation of modern cryptographic password hashing. The resulting system automates vehicle identification, enforces data integrity, and provides dynamic decision support through a real-time administrative dashboard.*

Keywords: Parking Management System, Web Application, PHP, MySQL, SQL Injection, Three-Tier Architecture

