Deployment Documentation for a PARKING MANAGEMENT SYSTEM for SM MALL OF ASIA

A Thesis Project Presented to the

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DEPLOYMENT DOCUMENTATION

INTRODUCTION

The Parking Management System (PMS) is a desktop application designed to help SM City Grand Central modernize and streamline its parking operations. Developed using Visual Basic 2010 with a local database, this system replaces the mall's outdated manual methods of managing parking activities, which are often inefficient, prone to mistakes, and difficult to handle—especially during busy hours or when there's a high volume of vehicles.

At present, the parking process relies heavily on manual tasks such as issuing tickets, writing down vehicle details, and recording payments on paper. These traditional methods can lead to long wait times, lost or inaccurate records, incorrect billing, and difficulties in monitoring available parking spaces. This not only slows down operations but can also cause frustration for both mall staff and customers, affecting the overall shopping experience.

The Parking Management System addresses these challenges by offering a centralized, secure, and fully automated solution for handling parking operations. With this system, staff can register vehicles, track entry and exit times, calculate fees, and process payments efficiently and accurately. It also provides real-time reports, including daily revenue summaries, peak traffic hours, and current parking space availability. These insights help mall management make better decisions when it comes to space allocation and improving overall operations.

By automating repetitive and time-consuming tasks, the PMS significantly reduces paperwork and eliminates the need to manually sort through files to find information. For example, the system automatically calculates fees and tracks overdue payments, freeing up staff to focus on assisting customers and ensuring smooth traffic flow. Its user-friendly interface also makes it simple for employees to navigate the system, update records, and access information quickly, resulting in faster service and fewer errors.

Using Visual Basic 2010 ensures seamless integration with the mall's current Windows-based systems, making it cost-effective and easy to deploy. The local database provides an added layer of security by keeping all data stored safely within the organization's network, reducing the risk of data breaches and external threats.

As part of SM City Grand Central's commitment to modernization, the Parking Management System plays a key role in enhancing both customer experience and operational efficiency. With the growing number of vehicles visiting the mall, manually managing parking has become more challenging. This system provides a reliable, efficient, and secure solution, ensuring faster, more accurate parking operations that benefit customers, staff, and management alike.

Objective of the Deployment

The main objective of this deployment is to replace manual parking processes with an automated system that simplifies daily operations and improves accuracy. This includes tracking vehicle movement, managing payments, and generating reports more efficiently. It also aims to improve customer service by reducing wait times and providing a smoother parking experience, while ensuring that parking data is centralized, secure, and easily accessible for management use.

Scope of the Deployment

The deployment will be a full rollout, covering all computers and devices used by the mall's parking management team. It includes setting up the system, migrating necessary data, and training staff to use it effectively. The system will be strictly for internal use, with all data stored securely within the mall's network. This ensures a smooth transition from manual operations to a fully automated parking management process that improves both efficiency and service quality.

DEPLOYMENT PLAN

Outlines the overall strategy, phases, schedule, and milestones of the deployment process. It describes how the system will transition from preparation to installation, pilot testing, and full adoption, while also noting timelines and current progress.

Schedule & Milestone

Phase	Description	Start Date	End Date	Status
Pre-Deployment	Outlines the overall strategy, phases, schedule, and milestones of the deployment process. It describes how the system will transition from preparation to installation, pilot testing, and full adoption, while also noting timelines and current progress.	MM/ DD/ YYYY	MM/DD/ YYYY	Completed
Deployment	Installing the PMS, configuring the MySQL database, loading initial data (User Account, Parking History and Credentials), and verifying core functions.	MM/ DD/ YYYY	MM/DD/ YYYY	In Progress
Post-Deployment	Conducting pilot testing during off-peak hours, monitoring stability for 72	MM/ DD/ YYYY	MM/DD/ YYYY	Pending

	hours, training staff/administrators, and gathering user feedback. A 3-month free maintenance period will be provided.			

Table 1. Deployment Plan for Parking Management System

DEPLOYMENT ENVIRONMENT\

This chapter Specifies the hardware, software, and hosting requirements necessary for the successful installation of the TMS. This chapter ensures that the target environment is properly equipped to run the system offline.

Hardware Requirements – Intel Core i5 processor (or higher), 8GB RAM, 256GB SSD storage, running Windows 10/11 (64-bit). A stable LAN connection is recommended for multi-device access.

Software Requirements – Microsoft Visual Basic .NET, XAMPP (Apache and MySQL), MySQL Workbench (for verification), and Microsoft Office tools for reporting.

Hosting Information – The system will be hosted on a local machine (standalone desktop deployment). Database and system files are stored locally with scheduled backups. No external hosting or domain configuration is required.

DEPLOYMENT PROCEDURES

This section outlines the phases of deployment, including preparation, execution, and post-deployment activities.

4.1 Pre-Deployment Steps

- Backup any existing parking records from prior manual systems (if applicable).
- Install Microsoft Visual Basic .NET, XAMPP, and MySQL.
- Configure the MySQL database and create schema for tenants, units, contracts, invoices, and payments.
- Verify system compatibility with the host machine and ensure all drivers are updated

4.2 Deployment Execution

- Copy PMS system files into the designated application folder.
- Import database tables and load initial records (ex. Parking history and User Information).
- Configure database connection strings within the application settings.
- Initialize the system and run a first-time login test.
- Check for application errors and resolve configuration issues immediately.

4.3 Post-Deployment Steps

- Run predefined test cases to verify that all modules (Dashboard, Slot Managemnet, Parking History, Alert History) are functioning correctly.
- Monitor the system for at least 72 hours of live test usage to ensure stability.
- Conduct staff training sessions to familiarize users with the system.
- Collect user feedback for possible adjustments before full adoption.

USER TRAINING & SUPPORT

To ensure smooth adoption of the Parking Management System, proper training and support will be provided to both staff and administrators. This will allow them to operate the system confidently, minimize errors in parking records, and ensure accurate management.

Training Schedule:

Training will be conducted during the pre-deployment phase, following the system installation and initial pilot test. The sessions will cover:

- Logging in and managing user accounts.
- Adding, updating, parking records.
- Managing slot for parking.
- Recording payments and generating reports.
- Error handling and basic troubleshooting steps.
- Administrative functions such as database maintenance and contract management.

Documentation and Manuals:

A User Guide and Quick Reference Manual will be distributed to staff and administrators. These materials will include step-by-step instructions, screenshots, and FAQs for common tasks. Additional video demonstrations may also be prepared for easier reference and training continuity.

Support and Maintenance:

The development team will provide three (3) months of free technical support and maintenance after deployment. Support will include:

- On-call or message-based assistance for troubleshooting issues.
- Regular monitoring and application of system patches or updates when necessary.
- Guidance on database backup, recovery, and data security procedures.

Technical team contact information:

Email: PMSdevteam@email.com

Contact Number: +63 908 866 2317

RISKS & CONTINGENCY PLAN

Risks such as system downtime, database errors, user resistance, and data loss are considered. Each risk is assessed by severity, and corresponding contingency plans such as backups, rollback procedures, and training are provided to minimize disruption.

Risk	Impact	Mitigation Strategy
System downtime	High	Ensure backup copies of the system and database are available. Schedule deployment during off-peak hours.
Database connection error	Medium	Test database connections in advance. Keep a rollback script to restore schema if needed.
User resistance to change	Low	Provide training, demo sessions, and continuous support.
Data loss during migration	High	Backup all records before deployment and verify imported data.

Table 2. Risk & Contingency Plan for Parking Management System

DEPLOYMENT VERIFICATION & SIGN-OFF

Following the successful completion of the deployment, the system will undergo verification through functional tests and UAT feedback. Once confirmed stable, stakeholders will sign off to acknowledge acceptance and readiness for full use.

Stakeholder	Role	Signature	Date
Name: Kim Razel Torrazo	Project Manager		
Name:	Client Representative		

Table 3. Deployment verification & sign-off for Parking Management System