PROJECT REPORT

ON

CAR WASH MANAGEMENT SYSTEM

SUBMITTED TO   **SUBMITTED BY**

Mr. Anuj Kumar   Harsh (AF04992116)

                                        Avinash (AF04990821)

Batch code :-

ANP- D2405

Course name:-

ITPR

DR. K. N. MODI INSTITUTE OF ENGINEERING AND TECHNOLOGY

Academic Year: 2025 – 2026

ABSTRACT :-

The **Car Wash Management System** is a software application developed to automate the process of managing car wash services such as **customer records, service booking, vehicle details, billing, and payment management**.

Manual car wash management is time-consuming and may lead to errors in billing, service tracking, and customer handling.

This system provides a computerized solution to **store, update, delete, and retrieve car wash-related data efficiently and accurately**.

INTRODUCTION :-

Car wash centers handle daily operations like customer entry, selecting services, tracking wash status, and generating bills.
Managing these tasks manually becomes difficult when the number of customers increases.

The **Car Wash Management System** helps to manage car wash operations in a structured and organized way. It ensures **fast data retrieval, accurate billing, and efficient service handling**.
The system improves customer satisfaction by reducing waiting time and providing clear service records.

OBJECTIVES :-

• To automate car wash center operations

• To reduce manual work and billing errors

• To maintain a centralized database of customers and vehicles

• To manage service booking and wash status efficiently

• To generate invoices and payment records

• To improve accuracy and efficiency

PROJECT CATEGORY :-

This project belongs to the **Database Management System (DBMS)** category.

It is an application that manages data related to:

• Customers

• Vehicles

• Services

• Bookings

• Payments

It demonstrates basic operations like **Create, Read, Update, and Delete (CRUD)**.

SYSTEM ANALYSIS :-

System analysis involves understanding user requirements and designing a system that fulfills those needs.

 The Car Wash Management System is designed to manage:

• Customer details

• Vehicle details

• Service selection

• Booking and scheduling

• Billing and payment tracking

The system is divided into different modules to simplify functionality and improve maintainability.

MODULES DESCRIPTION :-

1. **Customer Management**

   Add, update, view, and delete customer records

2. **Vehicle Management**

   Store vehicle number, type, model, and customer mapping

3. **Service Management**

   Manage services like basic wash, foam wash, polishing, interior cleaning, etc.

4. **Booking Management**

   Create and manage service bookings and schedules

5. **Billing & Payment Management**

   Generate bill, store payment mode, and payment status

DATABASE DESIGN :-

The database is designed to store and manage car wash data efficiently.

 It consists of tables such as:

• Customers

• Vehicles

• Services

• Bookings

• Payments

Each table is designed with proper **primary keys and foreign keys** to maintain data integrity and relationships.

ENTITY RELATIONSHIP DIAGRAM :-

The ER Diagram represents relationships between entities such as **Customer, Vehicle, Service, Booking, and Payment**.

It shows one-to-many relationships where:

• One customer can have multiple vehicles

• One vehicle can have multiple bookings

• One booking generates one payment record

DATA FLOW DIAGRAM :-

The Data Flow Diagram (DFD) illustrates how data flows within the system.

 • **Zero Level DFD**

 • **First Level DFD**

 • **Second Level DFD**

It shows interaction between user, system, and database for managing bookings and billing.

PROCESS LOGIC :-

The system follows a simple process logic:

1. User selects an operation from the menu
2. Input is taken through terminal
3. Data validation is performed
4. Database operation is executed
5. Output is displayed to the user

PLATFORM USED :-

Hardware Requirements :

• Intel i3 or higher

• 4GB RAM

• 500MB Storage

Software Requirements :

• JDK 8 or above

• MySQL Server

• Eclipse IDE

• JDBC Driver

IMPLEMENTATION DETAILS :-

The project is implemented using a structured approach where:

 • Data is stored in a database for secure access

 • CRUD operations are used to manage records

 • Validation is applied to avoid wrong data entry

 • Billing is calculated automatically based on selected services

This makes the system stable, reliable, and easy to manage.

TESTING :-

Testing ensures that the system works as expected.

Test cases include:

• Adding customers and vehicles

• Adding services

• Booking service for a vehicle

• Generating bill and payment entry

• Viewing records and reports

All modules were tested successfully.

RESULTS :-

The Car Wash Management System successfully manages car wash center records.
It provides:
- Fast data retrieval
- Accurate billing
- Secure record storage
- Efficient booking management

ADVANTAGES :-

• Easy to use

 • Reduces paperwork

 • Accurate billing and records

 • Secure and reliable

 • Saves time and improves customer handling

LIMITATIONS :-

• Basic version has limited features

 • No advanced online payment in offline version

 • No mobile app (if not implemented)

 • Limited user roles in simple project

FUTURE SCOPE :-

• Online booking system

 • SMS/WhatsApp notification to customers

• QR code invoice generation

• Mobile application

• Feedback and rating system

• Employee attendance & salary module

CONCLUSION :-

The Car Wash Management System successfully automates car wash center operations.
It provides an efficient way to manage customers, vehicles, bookings, and payments.
This project improves service management, reduces manual errors, and provides a strong
base for future enhancements.

THANK YOU