Project Title:
Garage Management System

Branch Name:
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Track:
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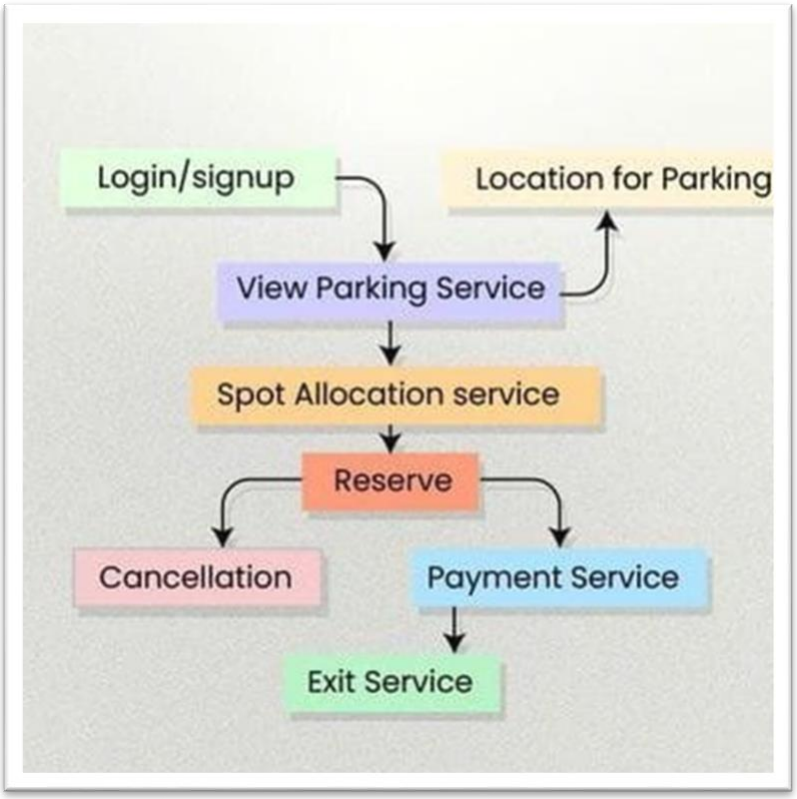
Abstract
The Garage Management System is a Salesforce-based platform designed to revolutionize garage operations through automation and digital transformation. It addresses modern service challenges such as real-time job tracking, customer communication, inventory management, and billing. This intelligent system reduces manual workload, minimizes errors, and enhances operational transparency while improving customer satisfaction and loyalty.

1. Project Overview
This platform consolidates critical garage operations, such as work order processing, inventory tracking, customer interactions, and service monitoring. It enables seamless service delivery and supports multichannel communication. With features like self-service portals, automated scheduling, and digital payments, the system increases user experience and operational efficiency.

The system employs a digital-first strategy to reduce human intervention in complex tasks, lower the chances of error, and streamline service delivery. Automation optimizes task delegation, parts tracking, and work order monitoring—ensuring real-time updates, role-based access, and efficient workflows across departments.

2. System Architecture

This section explains the structural design of the system, focusing on how different modules interact within the Salesforce platform. It covers backend services, frontend interfaces, and database components, ensuring scalability, performance, and security.



Overview

Built on Salesforce Lightning Experience, the architecture emphasizes scalability, security, and high performance. It integrates advanced automation tools and customized Salesforce objects to manage complex operations, maintaining data integrity and responsiveness.

Components

- Vehicle Object: Stores vehicle info like manufacturer, service history, and specifications.
- Service_Item__c Object: Tracks individual service tasks, labor, costs, and completion status.
- Parts_Inventory__c Object: Handles inventory levels, cost history, suppliers, and stock automation.
- Automation Tools: Salesforce Process Builder, Apex Triggers, and Flows for dynamic rule-based automation.

Integration Layer

- Payment processing gateways
- Parts supplier APIs

- Notification systems
- Diagnostic interfaces
- Accounting tools
- CRM tools

3. Features and Functionalities

Here, the key functions of the system are detailed. These include work order management, customer profiling, parts inventory control, and smart scheduling. Automation tools streamline tasks, reduce delays, and ensure consistent service delivery.

Core Functionalities

- Work Order Management: Manages lifecycle from intake to delivery.
- Customer Management: Tracks profiles, communication, warranties, and preferences.
- Inventory Management: Smart reorder prediction, supplier coordination, and bulk pricing optimization.
- Scheduling System: Auto-adjusts based on technician expertise, availability, and workload.

Automation Tools

- Real-time inventory updates
- Technician assignment
- Dynamic pricing & estimates
- Historical service time predictions
- Quality control checkpoints

Process Automation (Flows)

- Digital check-in procedures
- Work order progress tracking
- Approval and communication workflows
- Service and feedback collection

4. Security and Permissions

This section outlines how the system protects sensitive data and controls user access. It describes role-based permissions, encrypted data handling, and multi-factor authentication to ensure secure, compliant operations.

Access Control

- Service Managers: Full access including performance/financial data
- Service Advisors: Access to client schedules and transactions
- Technicians: Access to work orders and parts only
- Front Desk: Basic info and payment processing
- Customers: Portal-based access to own data

Data Sharing & Protection

- Territory and team-based permissions
- Customer-specific access for fleet clients

- Vendor access for suppliers
- Financial and personal data limited to relevant roles
- End-to-end encryption and audit logs

Authentication
- Multi-factor authentication
- IP-based access
- Session timeout enforcement
- SSO & biometric login for mobile

5. Tools and Technologies Used

- **Frontend:** HTML, CSS, Bootstrap, JavaScript
- **Backend:** PHP / Python Django / Node.js
- **Database:** MySQL
- **IDE:** VS Code
- **Version Control:** Git, GitHub
- **API Testing:** Postman

6. Testing and Quality Assurance

It details the rigorous testing methods applied to verify system reliability, accuracy, and performance. This includes unit testing, integration testing, and deployment strategies that support ongoing optimization and error resolution.

Testing Strategy
Unit Testing:
- Component-level verification
- Code coverage > 85%
- Boundary, error, and logic testing

Integration Testing:
- End-to-end flow and module connectivity

Deployment Testing:
- Rollout by department
- Real-time deployment tracking
- Rollback & validation readiness

Post-deployment:
- System monitoring
- Performance tuning
- Bug tracking and user support

7. Maintenance and Optimization

This section discusses the continuous improvement strategy for the system. It includes scheduled maintenance, performance monitoring, user feedback loops, and AI-based optimization to keep the platform efficient and up to date.

Maintenance Plan

- Weekly health checks
- Monthly performance tweaks
- Quarterly security patches
- Bi-annual feature upgrades

Monitoring

- Real-time KPIs
- Resource usage trends
- Error rate analysis
- User behavior insights
- Optimization suggestions

Conclusion

The Garage Management System represents a transformative solution for digitizing and streamlining automotive service operations. By integrating Salesforce's ecosystem with customized logic and intelligent automation, it ensures accuracy, speed, and transparency across every garage activity. The system supports scalable business growth, improves client communication, and guarantees high user satisfaction.

The Garage Management System provides a holistic view of service operations, reducing time lags, enhancing transparency, and simplifying customer communication. By digitizing task assignments and enabling real-time visibility into progress, garages can deliver faster, more reliable service experiences. This section highlights the adaptability and effectiveness of the system in dynamic environments.