STORE MANAGEMENT: GARAGE MANAGEMENT SYSTEM

PROJECT OVERVIEW

The **Garage Management System (GMS)** is a Salesforce-based solution designed to modernize and streamline the operations of automotive repair facilities. The project leverages Salesforce's platform to integrate customer relationship management (CRM), service scheduling, inventory tracking, and financial processes into a unified system. By addressing the unique needs of garages and workshops, GMS aims to enhance operational efficiency, improve service quality, and foster lasting customer relationships.

PURPOSE

The **Garage Management System (GMS)** is designed to address the unique operational challenges of automotive repair facilities, workshops, and service centers. Its purpose is to provide a centralized platform for managing all aspects of garage operations, ensuring efficiency, transparency, and superior customer service.

Key Purposes

1. Enhance Operational Efficiency

- **Streamline Workflows**: Automate routine tasks such as scheduling, job assignments, and service reminders to save time and reduce errors.
- **Optimize Resource Utilization**: Manage technician workloads, allocate resources effectively, and minimize downtime.

2. Improve Customer Service

- **Personalized Interactions**: Store customer preferences and service history to provide tailored experiences.
- **Transparent Communication**: Keep customers informed with real-time updates on service status and cost estimates.

3. Ensure Accurate Record Keeping

- Maintain a comprehensive database of customer, vehicle, and service details.

- Track inventory usage and monitor stock levels to avoid service delays.

4. Increase Revenue and Profitability

- **Upsell Opportunities**: Identify additional service or product needs based on vehicle history.
- **Billing Accuracy**: Generate detailed invoices and ensure prompt payments.
- **Reduce Costs**: Optimize inventory management to prevent overstocking or shortages.

5. Facilitate Data-Driven Decision Making

- Leverage reports and analytics to track service trends, revenue, and customer retention.
- Identify growth opportunities and operational bottlenecks with actionable insights.

6. Build Lasting Customer Relationships

- Foster trust by maintaining accurate service records and delivering consistent quality.
- Engage customers through timely reminders, loyalty programs, and feedback collection.

7. Support Business Growth and Scalability

- Provide a scalable solution that can adapt to growing customer and service demands.
- Integrate with additional tools and technologies to meet evolving business needs.

Objectives:

The Garage Management System aims to:

- Provide an intuitive, user-friendly platform to manage garage operations.
- Enhance customer satisfaction through efficient service tracking and communication.
- Automate repetitive tasks to improve operational efficiency.
- Deliver actionable insights into business performance with detailed reporting.

Key Features:

1. Customer Management

- Centralized storage of customer information, including contact details and service preferences.
- Tracking of service history and communication records.
- Personalized notifications for service reminders and promotions.

2. Vehicle Management

- Maintain detailed vehicle records (make, model, year, VIN, etc.).
- Service history tracking for every vehicle.
- Automated scheduling of routine maintenance reminders.

3. Service Operations

- Create and manage service orders efficiently.
- Assign tasks to technicians based on availability and expertise.
- Real-time job tracking and status updates for customers.

4. Inventory Control

- Track spare parts and tools, with visibility into stock levels.
- Automate reorder alerts for low-stock items.
- Link inventory usage directly to service orders.

5. Billing and Invoicing

- Automated generation of invoices for services and parts.
- Flexible payment tracking for cash, card, or online transactions.
- Integration with accounting tools for seamless financial management.

6. Analytics and Reporting

- Custom dashboards to monitor revenue, customer retention, and technician performance.
- Reports on inventory turnover and service trends.
- Insights to identify growth opportunities and improve decision-making.

Users and Roles in Garage Management System :

A user is anyone who logs in to Salesforce. Users are employees at your company, such as sales reps, managers, and IT specialists, who need access to the company's records. Every user in Salesforce has a user account. The user account identifies the user, and the user account settings determine what features and records the user can access.

Administrator

Role Purpose: The Administrator oversees the overall configuration and management of the GMS. They ensure the system runs smoothly and is customized to meet the garage's needs.
Responsibilities:

- Configure Salesforce objects, fields, workflows, and automation.
- Manage user accounts, roles, and permissions.
- Monitor system performance and troubleshoot issues.
- Generate and customize reports and dashboards.
- Ensure data security and compliance with organizational policies.

2. Service Manager

Role Purpose: The Service Manager oversees daily service operations and ensures efficient task allocation and service delivery.
Responsibilities:

- Create and manage service orders.
- Assign service jobs to technicians based on workload and expertise.
- Monitor job progress and ensure timely completion.
- Communicate with customers about job status and service updates.
- Review and approve invoices before sending them to customers

Role Hierarchy and Access Control

Example Role Hierarchy:

1. **Administrator**: Full access to all modules and features.

2. **Service Manager**: Access to service orders, job assignments, and customer communication.
3. **Technician**: Limited access to assigned service orders and job details.
4. **Inventory Manager**: Access to inventory-related data and workflows only.
5. **Accountant**: Access to invoices, payments, and financial reports.

Access Control Highlights:

- **Role-Based Access**: Each user role is granted specific permissions based on their responsibilities.
- **Data Visibility**: Technicians and Inventory Managers only access data relevant to their tasks. Customer and financial data remain restricted.
- **Auditing and Tracking**: The system logs user actions to ensure accountability and compliance.

Benefits of garage management system:

The Garage Management System (GMS) powered by Salesforce provides numerous benefits to automotive repair facilities, enabling them to enhance efficiency, improve

The Garage Management System (GMS) powered by Salesforce provides numerous benefits to automotive repair facilities, enabling them to enhance efficiency, improve customer satisfaction, and drive business growth. Below are the key advantages of using this system:

1. Operational Efficiency

- **Automation of Tasks**: Replaces manual processes with automated workflows for service reminders, job scheduling, and inventory management, saving time and reducing errors.
- **Streamlined Workflows**: Integrates all aspects of garage operations into a centralized platform, ensuring smooth and coordinated processes.
- **Real-Time Updates**: Provides live updates on service orders, technician assignments, and inventory levels, enabling faster decision-making.

2. Improved Customer Experience

- **Personalized Communication**: Stores customer preferences and service history, enabling personalized interactions and targeted marketing.
- **Transparency**: Keeps customers informed with real-time updates on job status, cost estimates, and service completion timelines.
- **Convenience**: Allows customers to book appointments, view service history, and make payments online.

3. Better Resource Management

- **Technician Allocation**: Assigns jobs to technicians based on their availability and expertise, optimizing workforce utilization.
- **Inventory Optimization**: Tracks spare parts and tools, ensures timely reordering, and prevents delays caused by stock shortages.
- **Time Tracking**: Logs time spent on each task, enabling better workload management and productivity analysis.

4. Data-Driven Decision Making

- **Detailed Analytics**: Dashboards and reports provide insights into key metrics such as revenue, customer retention, service trends, and technician performance.
- **Predictive Insights**: Uses Salesforce Einstein AI to identify potential upselling opportunities and predict customer needs.
- **Performance Monitoring**: Tracks the efficiency of operations, allowing managers to identify and address bottlenecks.

5. Increased Revenue

- **Upselling Opportunities**: Analyzes customer and vehicle history to recommend additional services or replacement parts.
- **Timely Billing**: Generates accurate invoices and sends automated payment reminders to ensure faster collection.
- **Customer Retention**: Builds trust and loyalty through personalized service and timely follow-ups, leading to repeat business.

6. Enhanced Data Security

- **Role-Based Access Control**: Ensures sensitive information is only accessible to authorized users.
- **Data Integrity**: Reduces the risk of errors or loss by centralizing data in Salesforce's secure cloud environment.
- **Compliance**: Helps meet regulatory requirements related to customer and financial data protection.

7. Scalability and Flexibility

- **Customizable Solution**: Tailors the system to meet specific business requirements, accommodating the unique needs of any garage.
- **Scalable for Growth**: Adapts to increasing service volumes, customer numbers, and additional locations as the business expands..

8. Mobile Accessibility

- **On-the-Go Management**: The Salesforce Mobile App enables managers and technicians to access job details, update statuses, and monitor operations from anywhere.

Technician Efficiency: Technicians can log job details and access service instructions without returning to a workstation

9. Enhanced Customer Relationships

- **360-Degree Customer View**: Consolidates all customer interactions and service history, providing a comprehensive view of customer engagement.
- **Proactive Engagement**: Sends service reminders, follow-up messages, and loyalty rewards, improving customer retention.
- **Feedback Integration**: Collects and analyzes customer feedback to refine services and address concerns.

Example Workflow

Below is a step-by-step example workflow demonstrating how a Garage Management System (GMS) in Salesforce streamlines operations from customer booking to service completion and follow-up.

Step 1: Customer Booking

Action:

- A customer books a vehicle service appointment through:
- Online customer portal.
- Phone call or walk-in (entered manually by a customer support representative).

System Process:

1. **Salesforce Workflow**:
- The system automatically creates a **Service Order** linked to the customer and their vehicle record.
- The customer receives a confirmation email or SMS with appointment details.
2. **Inventory Check**:
- Salesforce Flow triggers a check on spare parts or tools needed for the job.
- If stock is low, an alert is sent to the **Inventory Manager** to reorder.

Step 2: Job Scheduling

Action:

- The **Service Manager** reviews the service order and assigns it to an available technician based on workload and expertise.

System Process:

1. **Job Assignment**:
- The system uses Salesforce **Omni-Channel Routing** to suggest technicians based on their skills and availability.
- The technician receives a notification with job details, including vehicle information, customer notes, and tasks.
2. **Calendar Update**:

- The service job is added to the technician's schedule.
- Both the customer and technician receive reminders about the appointment.

Step 3: Service Execution

Action:

- The technician performs the service, updating the system throughout the process.

System Process:

1. **Real-Time Updates**:
- The technician uses the Salesforce Mobile App to:
- Mark the job as **In Progress**.
- Log details of the service performed, parts used, and time spent.
- Update the job status to **Completed** after finishing the service.
2. **Customer Notification**:
- The customer receives an SMS or email update that the service.

Benefits of This Workflow

- **Automation**: Minimizes manual tasks and errors.
- **Transparency**: Keeps customers informed throughout the process.
- **Efficiency**: Ensures timely job completion and resource optimization.
- **Customer Satisfaction**: Enhances trust and builds loyalty with seamless service and proactive communication.

Summary of Workflow:

The **Garage Management System (GMS)** in Salesforce integrates and automates garage operations, from booking to reporting, creating a seamless workflow that ensures efficiency, customer satisfaction, and business growth.

Detailed Steps to Solution Design

Salesforce Object Manager - Fields & Relationships Configuration

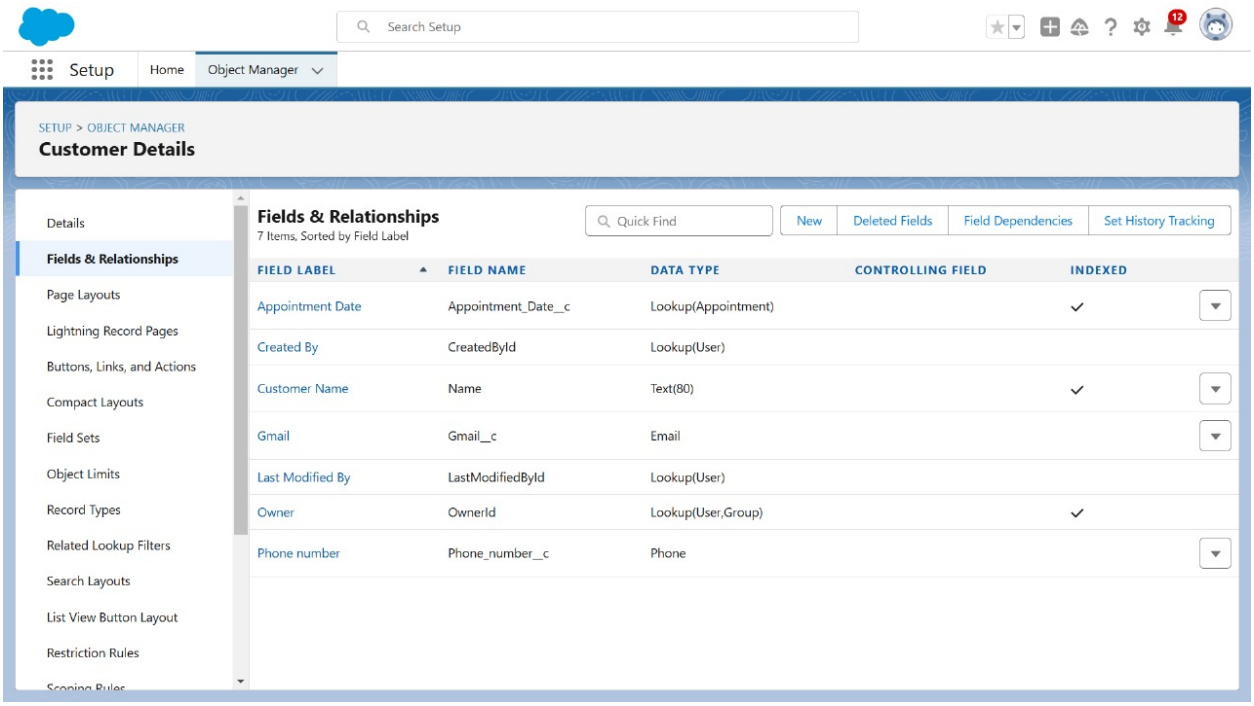
Context:

This screenshot shows the configuration of fields and relationships for the **Customer Details** object in Salesforce Object Manager. It highlights the custom fields and their respective data types, which are used to manage customer data effectively.

Description:

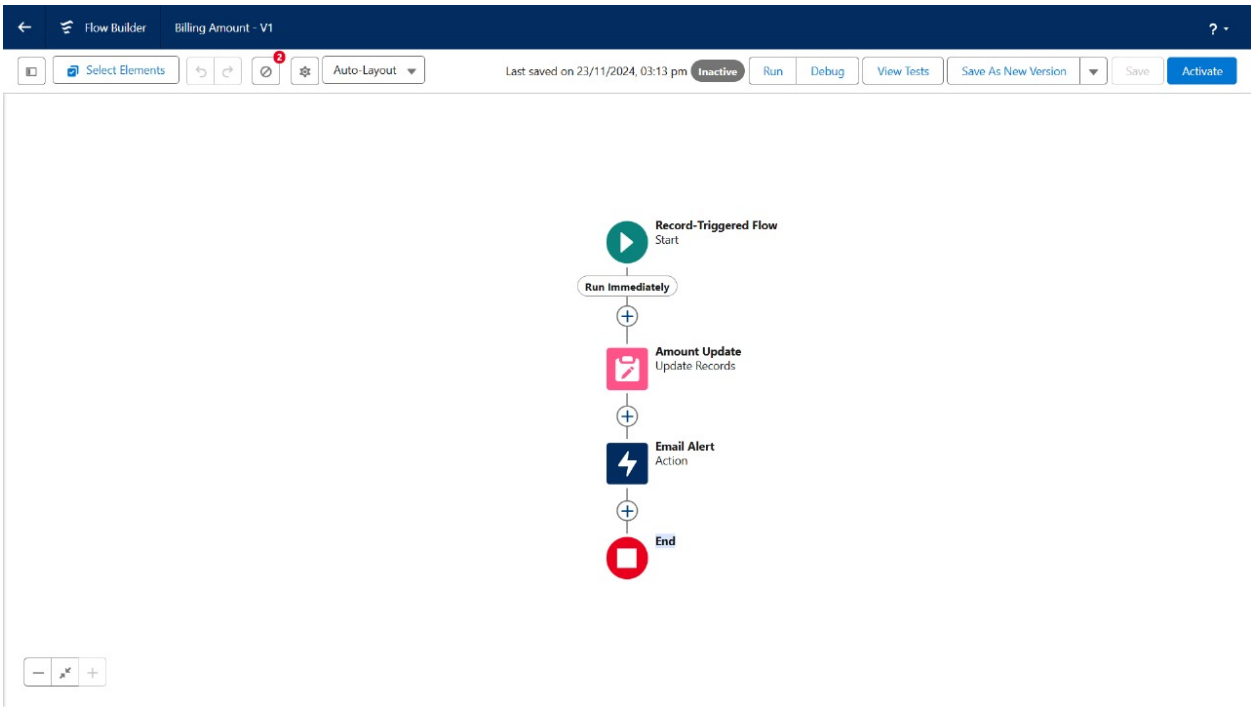
Fields Defined in the Object:

- **Appointment Date (Appointment_Date__c):** A lookup field pointing to the **Appointment** object, used to associate customer records with their scheduled appointments.
- **Customer Name (Name):** A text field with a maximum length of 80 characters, serving as the primary identifier for customer records.
- **Gmail (Gmail__c):** An email field to store customer email addresses.
- **Phone Number (Phone_number__c):** A phone field for recording customer contact numbers.
- **Created By (CreatedById):** A standard lookup field pointing to the **User** object, indicating the user who created the record.
- **Last Modified By (LastModifiedById):** A standard lookup field pointing to the **User** object, tracking the user who last modified the record.
- **Owner (OwnerId):** A lookup field to **User** or **Group**, representing the owner of the record.



Salesforce Flow Builder - Update Records

- **Context**: This screenshot illustrates a **Record-Triggered Flow** in Salesforce Flow Builder for updating records.
- **Description**:
    - The **Flow** starts with a trigger, likely when a record is created or updated.
    - The highlighted element, "Update Records," is configured to update records with specific conditions:
        - The **Condition**: `Payment_Status__c` equals "Completed."
        - The **Field to Update**: `Payment_Paid__c` (its value is being dynamically set).
    - An error is displayed: *The "Service_records__r" field doesn't exist on the "Billing_details_and_feedback__c" object or you don't have access to the field.*
- **Relevance to the Project**:
    - This showcases an example of automating data updates, such as payment processing or status tracking in the Garage Management System.
    - The issue suggests either a **field access problem** or **incorrect object references** in the flow configuration.



Salesforce Custom Report Type - Define Report Records Set

Context:

This screenshot illustrates the configuration process in Salesforce for defining report records in a custom report type. The report type is designed to include data from related objects, enabling advanced reporting capabilities for the Garage Management System.

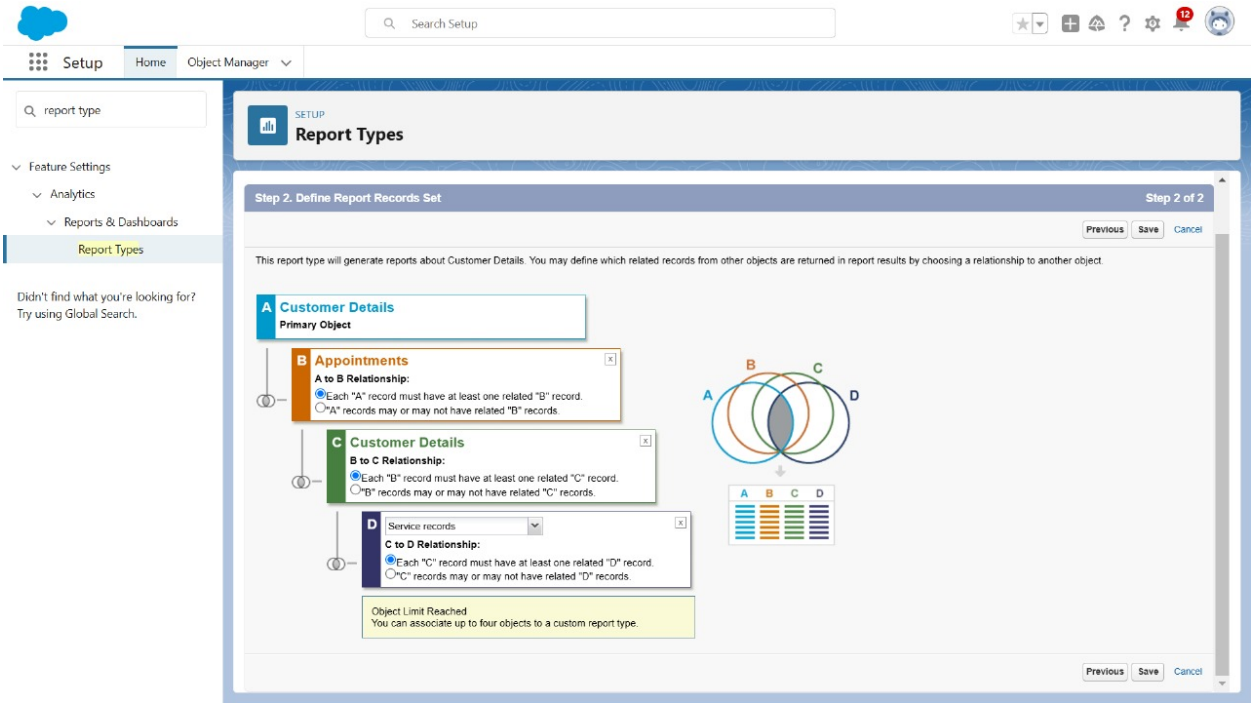
Description:

- **Primary Object:**
    1. **Customer Details** is the central object of this report type, representing the starting point for data extraction.
- **Related Object Relationships:**
    1. **Appointments (A to B Relationship):**
        1. Each **Customer Details** record must have at least one associated **Appointments** record.
        2. Flexibility is allowed where a Customer Details record may or may not include associated Appointments.
    2. **Customer Details (B to C Relationship):**

1. Each **Appointments** record must have at least one related **Customer Details** record (e.g., representing linked customer-specific details).

3. **Service Records (C to D Relationship):**
    1. Each **Customer Details** record can relate to **Service Records**, representing services completed for the customer.

- **Object Limit Reached:**
  Salesforce restricts custom report types to a maximum of four related objects. As seen here, **Customer Details, Appointments, and Service Records** fill the allowed limit.



Testing Approach for Garage Management System in Salesforce

1. Test Planning:

Define objectives, scope, and resources. Prepare a test plan and identify key modules (e.g., Customer Details, Appointments, Service Records, Payments).

2. Types of Testing:

- **Unit Testing:** Validate Apex classes, triggers, and flows with at least 75% code coverage.
- **Functional Testing:** Ensure system features like customer creation, appointment scheduling, and automation meet requirements.

- **Integration Testing:** Test data flow between Salesforce and external systems.
- **Regression Testing:** Revalidate existing functionalities after updates.
- **Performance Testing:** Measure system performance under load (e.g., bulk data uploads, report generation).
- **User Acceptance Testing (UAT):** Involve end-users to confirm usability and requirements are met.

3. Test Case Development:

Write test cases for scenarios such as record creation, automation, and reporting. Example:

- **TC001:** Verify new customer record creation.
- **TC002:** Validate appointment scheduling.

4. Test Environment Setup:

Use Salesforce Sandbox to test with realistic data. Ensure proper user access for testers.

5. Test Execution:

Run test cases, track bugs, and collaborate with developers for fixes.

6. Automation (Optional):

Automate repetitive tests like regression using tools like **Provar** or **Selenium**.

7. Reporting and Post-Testing:

Maintain test reports, track defects, and conduct post-deployment testing in production to confirm functionality.