Project Design Phase-II

Data Flow Diagram & User Stories

Date	07-11-2025
Team ID	NM2025TMID05731
Project Name	Garage Management System

Objective:

To streamline the operations of automotive repair facilities by managing customers, vehicles, job cards, billing, and inventory — ensuring smooth workflow and better customer satisfaction.

Data Flow Diagrams:

1. Level 0 (Context Diagram)

Shows the system as a single process interacting with external entities.

Entities & Data Flow:

- **Customer** → sends Vehicle Details, Service Request → Garage Management System
- **Garage Staff / Mechanic** ↔ Job Assignment, Service Updates ↔ Garage Management System
- **Admin** ↔ User Management, Reports ↔ Garage Management System
- **System** → sends Invoice, Status Updates, Notifications → Customer

2. Level 1 (Detailed System Processes)

Breaks down the system into functional components.

Main Processes

1. **Customer Management**
    - Input: Customer Registration, Vehicle Info
    - Output: Customer ID, Service History
    - Data Store: Customer Database
2. **Job Management**
    - Input: Service Request, Mechanic Assignment
    - Output: Job Card, Work Status
    - Data Store: Job Database
3. **Inventory Management**
    - Input: Parts Used, Stock Updates
    - Output: Inventory Report
    - Data Store: Inventory Database
4. **Billing System**
    - Input: Job Completion, Parts Used
    - Output: Invoice, Payment Record
    - Data Store: Billing Database
5. **Report Generation**
    - Input: Service Records, Revenue Data
    - Output: Daily/Monthly Reports for Admin

Level 2 (Example: Job Management Subsystem)

Processes

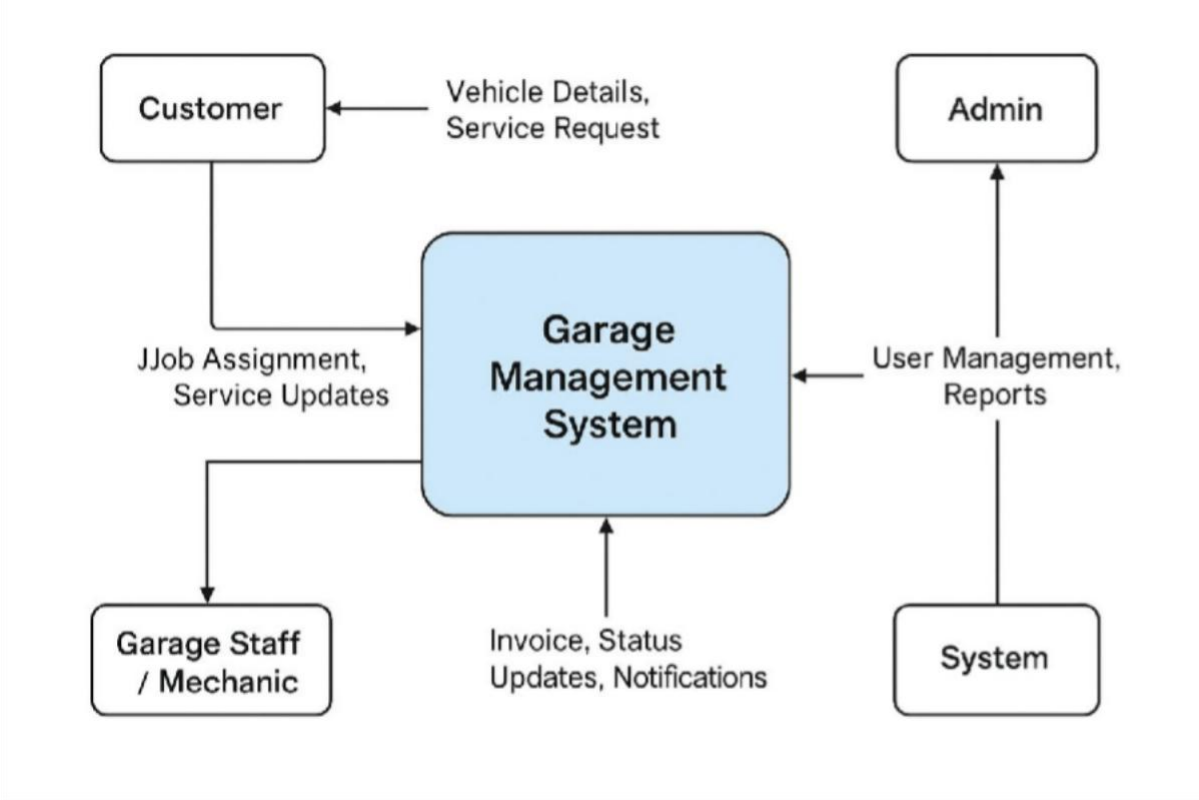
- 2.1 Create Job Card
- 2.2 Assign Mechanic
- 2.3 Update Job Progress
- 2.4 Close Job & Trigger Billing

Data Stores

- Customer Database
- Job Database
- Mechanic Database

Data Flow Example

Customer → *Service Request* → Create Job Card → Assign Mechanic → Update Progress → Close Job → Generate Invoice



User Stories:

User Stories are short, simple descriptions of a feature or function written from the perspective of the end user or stakeholder**.**They are used mainly in Agile software development to capture requirements in a user-focused and goal-oriented way.

Functional Requirement	User Type	User Story	Acceptance Criteria	Priority	Release Versio
Customer Registration and Login	Customer	As a customer, I want to register and log in to the system so that I can manage my vehicle services and view my service history.	User can successfully create an account, log in securely, and view their profile dashboard.	High	Release 1.0
Job Assignment	Mechanic	As a mechanic, I want to view all assigned repair jobs so that I can	Assigned jobs displayed on mechanic's dashboard with	High	Release 1.1

		plan and complete tasks efficiently.	due date and vehicle details.		
Customer Data Management	Receptionist	As a receptionist, I want to edit or update customer and vehicle information so that records remain accurate	Changes reflected in the central database immediately.	Medium	Release 1.1
Inventory Management	Admin	As an admin, I want to manage spare parts stock so that services are not delayed due to unavailability.	Stock updates automatically when parts are used; low-stock alerts displayed.	High	Release 1.2

Conclusion:

The Data Flow Diagrams (DFDs) and User Stories phase of the Garage Management System (GMS) provided a clear and structured understanding of how data moves within the system and how different users interact with it. Through the DFDs, the system's workflow — from customer service requests to job processing, billing, and reporting — was effectively visualized, ensuring that all modules and data exchanges are logically connected and efficient.