

Database Management System for Automobile Manufacturing Operations

Group – 5

Agash Uthayasuriyan – NUID 002866025

Amisha Bhawsar – NUID 002292691

Kumar Navdisha Batra – NUID 002293379

Ronak Shah – NUID 002813456

Rachana Keshav – NUID 002896309

Background:

In the dynamic landscape of automobile manufacturing, where precision and adaptability are paramount, the imperative for an advanced Database Management System (DBMS) has never been more evident. Acknowledging this need, we embark on a transformative journey to develop a state-of-the-art DBMS specifically tailored for the automobile industry. This initiative is poised to redefine the manufacturing paradigm by addressing challenges across the entire supply chain, from raw material procurement to customer satisfaction. As the automobile sector grapples with intricate supply chains, evolving market trends, and heightened customer expectations, our mission is to revolutionize the industry through the creation of a sophisticated DBMS.

Mission Statement:

Our mission is to lead a paradigm shift in automobile manufacturing through the development of an advanced Database Management System. We intend to optimize inventory management, streamline marketing and sales, enhance dealership efficiency, analyse performance, optimize the supply chain, ensure quality control, stay attuned to market trends, and excel in warranty and after-sales service. From sourcing raw materials to customer sales, we aim to enhance efficiency, transparency, and reliability in procurement, distribution, and inventory management. Our goal is to create a data-driven platform that makes the business operate at ease.

We would like to streamline processes in automotive enterprises with tools for decision-making using data, minimizing operational costs, and providing personalized customer service. We aspire to have efficient operations in automobile manufacturing sector through our comprehensive database solution.

Mission Objectives:

1. Spare Parts Inventory Management:

- *Objective:* To maintain an accurate and up-to-date inventory of all spare parts used in the manufacturing process.
- *Functions:*
 - Track the quantity and availability of each spare part.
 - Provide real-time updates on the status of spare parts.

2. Marketing and Sales Department Integration:

- *Objective:* To streamline marketing and sales activities and enhance collaboration between departments.
- *Functions:*
 - Store customer information and preferences for targeted marketing.
 - Track and analyse sales data for better decision-making.

3. Dealership and Retailing Management:

- *Objective:* To manage relationships with dealerships and facilitate efficient retailing processes.
- *Functions:*
 - Maintain a database of authorized dealerships and their contact details.
 - Track inventory levels at each dealership for restocking purposes.
 - Monitor sales and performance metrics for each dealership.

4. Performance Analysis:

- *Objective:* To analyse and optimize the performance of the manufacturing process.
- *Functions:*
 - Collect and analyse data on production efficiency and timelines.
 - Monitor equipment and machinery performance for preventive maintenance.

5. Supply Chain Optimization:

- *Objective:* To ensure a smooth and efficient supply chain for sourcing raw materials and delivering finished products.
- *Functions:*
 - Track and manage the procurement of raw materials.
 - Collaborate with suppliers for better coordination.

6. Market Trend Analysis:

- *Objective:* To stay informed about market trends and consumer preferences.
- *Functions:*
 - Monitor sales data and customer feedback for market trends.
 - Analyse competitor offerings and customer reviews.
 - Provide insights for product development and marketing strategies.

7. Warranty and After-Sales Service:

- *Objective:* To manage warranty information and streamline after-sales service.
- *Functions:*
 - Maintain records of warranty terms for each vehicle model.
 - Track customer complaints and service requests.
 - Optimize inventory of spare parts for post-sales services.