

# **Auto Parts Management System**

**Database Systems Lab Final Term Project**



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## Project Description

Rider's Choice is a Pune-based company that deals in various aspects of the motorcycle industry. Their services include motorcycle repairing services, spare parts distribution, retail spare parts business, and even producing motorcycle tyres. They are a one-stop-shop for all motorcycle needs.

One of the key areas Rider's Choice specializes in is motorcycle repairing services. They have a team of experienced technicians who are skilled in fixing any issue with motorcycles. The company prides itself on providing fast and reliable services to its customers. To improve their customer service, Rider's Choice has decided to digitize their system and create a record of customer data. This will help them keep track of their customer base and provide better services to their customers. They will also keep a record of the bike data and parts involved, which are sourced from their warehouse itself.

Rider's Choice also deals in spare parts distribution. They have a wide range of spare parts available for motorcycles of different brands. They keep a record of the individual spare parts, their stocks, and prices. They also keep metadata of the spare parts, such as the date of incoming and consortium number. With the digitization of their system, Rider's Choice aims to improve the efficiency of their spare parts distribution.

In addition to spare parts distribution, Rider's Choice also has a small-scale distribution network that has a delivery system embedded in it. This is used to expand their network and reach more customers. The delivery system does not handle fuel costs for the delivery, only address management and delivery itself. The fuel charge for the delivery is added to the system as an overhead on the day of the delivery, based on the number of kilometers involved.

Rider's Choice also produces motorcycle tyres. The tyre production process involves sourcing high-grade rubber from international clients, quality inspection of the sourced rubber, and manufacturing. They also deliver the sourced rubber to the clients. However, currently, the record of all these items is being stored manually, or rather, it is being handled through referrals. To improve the efficiency of their tyre production process, Rider's Choice aims to digitize this system and keep a record of the rubber batches and returning faulty rubber to the supplier. After the tyres are manufactured, they are packaged and delivered from the factory to the wholesale dealers. This process will also be integrated with the main delivery system.

Rider's Choice understands the importance of customer management and aims to

improve this area through digitization. They will create an edit-based system to keep track of customer orders and communication. This will help them keep track of their customer interactions and improve their services accordingly. The system will also keep track of the previous orders, including the issues dealt with and the team involved in resolving them.

In addition to customer management, Rider's Choice also aims to keep a record of their orders. Sometimes, the payment takes on a credit-based system, meaning each order has some bill of credit issued. The credit is adjusted first from the client, and the rest of it is paid in cash. Rider's Choice aims to automate this system and create a record of each order, including the credit issued.

Rider's Choice also has an employee record system. They keep a record of their employees, including their personal details, employment details, and performance reports. This helps them keep track of their employees' performance and identify areas of improvement.

With the digitization of their system, Rider's Choice aims to generate several reports associated with their business. They plan to create a billing system that keeps track of all the orders and payments made. They will also create a stock report that keeps track of the inventory and helps them identify the items that need to be restocked. In addition to these reports, they also plan to create a sales report per individual part and a profit/loss report over a quarterly cycle.

## Project Features

Expected Features for the project are:

1. Motorcycle Repairing Service:

- Keep the record of customer data
- Keep the record of bike data and parts involved (assume that these parts are sourced from Rider's Choice warehouse itself)

2. Spare Parts Inventory:

- Record of individual spare parts, stocks, and price
- Metadata of the spare part (date incoming, consortium number)

3. Production Department:

- Record rubber consortium batches
- Return faulty rubber to the supplier
- Record of manufactured tires leaving the factory
- Small orders should be handled directly
- Delivering tires to wholesale dealers, integrated with the main delivery system

4. Customer Management:

- Create an order management system
- Keep track of past orders and issues dealt with
- Provide a credit-based system for future orders

5. Employee Record:

- Keep track of employee information and duties

These are the tentative features of the Project and will be increased or decrease based on the working model requirements.

## Technology Stack

Language	C#
Backend Framework	.NET Framework
Platform	Desktop Application
Frontend Technology	WPF
IDEs	Visual Studio Community 2022
DBMS	MS SQL Server



## Project Actors

There are 3 main actors:

- Customer
- Management Team
- Employees

## Use Cases

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## User Interface Details

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# Classes

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# ER Design

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# Transactions

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## Views

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## Stored Procedures

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# Triggers

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## Indexes

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## Exceptions

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# Project Plan

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