

Automobile Spares Inventory Management System

Introduction

With the rise in production of automobiles, there is also a rise in the need for their respective spare parts. Every auto spare part requires frequent change during their entire lifespan which makes this a competitive business field. This database model will be constructed in a way which will help to conduct a market research to identify target customers, highly demanded spare parts, make location based filters, make profit off seasonal sales and make strategic plans based on data to attract more customers by making lucrative offers thus beating competition.

Assumptions

- Profit / Loss = Earnings – Expenses – Tax – Staff Salary
- All products are assumed to be sold with a standard profit of 30%
- To avoid complexity, we have assumed that the store only operates at one branch
- Only two categories of automobiles are considered – motorbikes and cars
- The spares are sold in wholesale to other small scale spares outlets in different locations.

Data Description

Customer

- The database keeps track of everyone who makes a purchase
- Each customer is given a unique id and basic information is stored

Details: #customer_id, name, mobile number, address, city, state, zip code

Employee

- Each employee is given a unique id
- The database contains salary details of employees for tracking profit / loss

Details: #employee_id, name, dob, salary, address, bank_accountNo

Supplier

- Supplier is the manufacturer of the product which is supplied to the store for sale
- Each supplier is associated with a unique id and supplier details are stored

Details: #supplier_id, supplier_name, supplier_address, mobile_number

Product

- Products are the actual spare parts sold at the store
- Each product is given a unique product id
- Each product is associated with the supplier, vehicle type, vehicle brand, vehicle model to which they are compatible
- Each product has purchase cost, and selling cost
- Management will be able to track the stock quantity to place future orders from suppliers

Details: #product_id, category_id, product_name, category_name, supplier_id, vehicle_brand, vehicle_Model, quantity, purchase_cost, selling_cost.

Sales History

- A customer can buy any number of parts on a given day
- Each purchase is identified by a unique id
- It consists information of customer, the product purchased and the price
- It also consists of the date of purchase to keep track in order to generate monthly reports

Details: #purchase_id, customer_id, date, product_id, category_id, product_amount, purchase_total

Business Goals

- Ability to generate monthly reports to compare profit / loss.
- Get information on which auto spare part is the most demanded and the least demanded.
- Identify which month has the highest demand for a particular spare part.
- Identify the most preferred brand by customers. This will help in making higher number orders before stock runs out.
- Figure out which particular automobile requires frequent change of a spare part
- Identify relation between the season and the sudden rise in demand for a spare part
- Identify if there is a relation between location and demand of a spare part
- Meet monthly target by introducing price discount on highly demanded spare parts to attract more customers

Team Number: 15

Team Members:

1. Gokulakrishnan Sivakumar
2. Prithiviraj Eswaramoorthy
3. Sujitraj Thirumurthy
4. Vandhana Manivannan