

# Case Study: Auto Parts Dealer Management System

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CS262-L Term Project



Session: 2021-2025

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## Description

Let's consider the case study for a motorcycle spare parts dealing company called '*Rider's Choice*'. Rider's Choice also deals in repairing services.

At an abstract level, Rider's Choice deals in:

- Motorcycle repairing services
- Spare Parts Distribution
- Retail Spare Parts Business (in case of selected parts)
- Producing Motorcycle Tyres

The tyre producing process also has certain technicalities involved to it:

1. Sourcing High-Grade Rubber from International Clients
2. Quality inspection of the sourced rubber
3. Manufacturing
4. Delivering the sourced rubber to the clients

Currently, the record of all these items is being stored manually. (In case of tyre manufacturing, this record isn't being kept on site, rather it is being handled through referrals).

## Features

You are required to digitize the above mentioned system having atleast (*but not limited to:*) the following features:

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, price
  - Metadata of the sparepart (date incoming, consortium Number)
3. A small scale distribution (*just for the spare part*) that has a delivery system embedded in it. This will be used to expand Rider's Choice network. Do not handle the fuel costs for the delivery, only address management and delivery itself. The fuel charges for the delivery will be added in the system as an overhead on the day of the delivery, by the number of kilometers involved.

4. Production Department also needs to have a record of the tyres:
  - (a) Rubber consortium batches
  - (b) Returning faulty rubber to supplier
  - (c) After the tyres are manufactured, they are fed into Rider's Choice Warehouses.
  - (d) Sometimes, small orders are directly sold from the factory channel itself. You need to automate this as well.
  - (e) Delivering tyres to wholesale dealers (integrated with main delivery system)
5. Customer Management
6. Orders Record(*Sometimes, the payment takes on a credit based system. What this means is that each order has some bill of it as a credit. On the next order, the previous credit is adjusted first from the client, and the rest of it is dealt with and remaining credit issued.*)
7. Employees record

## Reports

Rider's Choice will have following reports associated with it:

- Billing System
- Stock report
- Sales Report per individual part
- Profit/Loss report over a quarterly cycle
- Prediction report about next quarter per spare part

## Manually Existing Reports

ادھاری کھاتہ

حسن صاحب - نیانہ کھانہ

20/2	22/2	160/3	5000	4/3

عبدالغفور صاحب - وائش آؤٹ

5/3	15000	4/3		

Figure 1: A credit system Record of the process. Notice that against each customer, a record of the payment per date is kept.

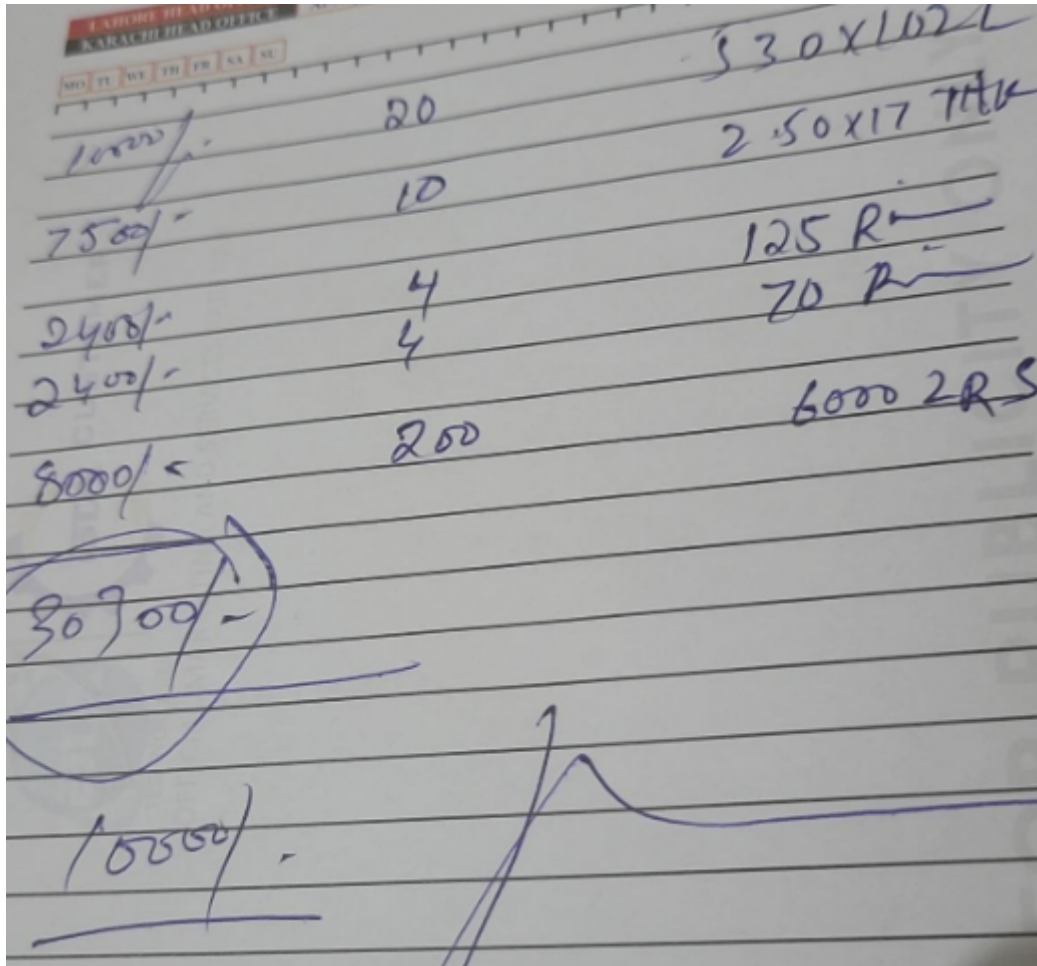


Figure 2: An Order bill in bulk delivered to a customer. 10000 is the new credit, left after the previous one and the payment was deducted from the bill.

**Fronus**  
SOLAR ENERGY

LAHORE HEAD OFFICE  
KARACHI HEAD OFFICE

Office No# 1104 Q Tower Jail Road, Lahore  
Al-Najeebi Electronics Market 11th floor Office# 1103-1104 Saddar, Karachi

DATE: .....

MO TU WE TH FR SA SU

800/-

750/-

250/-

150/-

4200

Figure 3: A retail bill of the spare parts.



S/N	MODEL	DESCRIPTION	C-P
<b>WHEEL CHAIN</b>			
1	420X100L	WHEEL CHAIN	254
2	420X104L	WHEEL CHAIN	293
3	428X100L	WHEEL CHAIN	373
4	428HX100L 'H'	WHEEL CHAIN	383
5	428X108L	WHEEL CHAIN	381
6	428HX118L 'H'	WHEEL CHAIN	480
7	530X102L	WHEEL CHAIN	590
8	420	CHAIN LOCK	9
9	428	CHAIN LOCK	10
<b>WHEEL RIMS</b>			
1	2.25X17	SPOKE (BUTTED)	692
2	2.50X17	SPOKE (BUTTED)	707
3	2.50X17 THICK	SPOKE (BUTTED) "HEAVY DUTY"	752
4	2.50X18	SPOKE (BUTTED)	752
5	3.00X17	SPOKE (BUTTED)	816
6	CG125-EURO2	SPOKE (IN/OUT) REAR & FRONT 3.00X17	923
<b>BALL BEARINGS</b>			
1	CD70-CDI	WHEEL RIM 1.20X17 (2.25-17)	494
2	CD70-CDI	WHEEL RIM 1.40X17 (2.50-17)	526
3	CD70-EUROII	WHEEL RIM 1.4X17 (2.50X17) BIG HOLE	579
4	CG125	WHEEL RIM 1.40X18 (2.50-18)	619
5	CG125	WHEEL RIM 1.60X17 (3.00-17)	661
6	3.00X18	WHEEL RIM 1.60X18	643
1	6000 2RS	BEARING	30
2	6001 2RS	BEARING	33
3	6004 2RS	BEARING	66
4	6201 2RS	BEARING	42
5	6202 2RS	BEARING	44

Figure 4: An incoming consortium of the spare parts. The warehouse record will be similar, except that it has a stock column.



Figure 5: The prediction graph/report will be similar to this for each spare part in the inventory. It will be adjusted in quarterly cycle instead of per month.