Database Management System

IT 5312 / IT 5351

Mini Project for Assessment-2 / Laboratory

Automobile Service Centre Database System

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Project abstract:

Automobile service centre database system has many functionalities such as a separate login for customers and admin. It has a feature where new customers can sign up by keying in all their (and their vehicle's) details and there is also a feature that lets customers maintain service records for multiple vehicles. The customers can choose from a wide option of services provided and a bill will be generated accordingly. It has a feature that allows customers to view their history of services. From the admin's side, the system allows the admin to update and manage all the records. All transactions made are maintained in the database.

Problem statement:

Owners of vehicles can avoid unforeseen vehicle concerns by servicing their vehicles regularly. Any fault detected in a vehicle must also be addressed immediately. This is where automobile service centres step in. Majority of existing service centres handle their daily transactions (entering customer records, tracking vehicle repairs, billing, etc.) manually which slows down the functioning of the service centre as well as the response time to client inquiries. Hence, there is a requirement to improve operational efficiency of the system by digitalising it using a database management system.

Modules:

1. Existing customers can login and new customers can register in the online portal.
2. Each customer will have their own account through which they can opt for a service, view history of services and add new vehicles.
3. There's a service page where customers can choose from a wide option of services from general service to a specific service that addresses vehicle faults.
4. Upon choosing, the customers are redirected to a page where the generated bill is displayed.
5. The service can be free or paid depending on the insurance details of the vehicle at hand.
6. Details such as customer details, vehicle details, fault details, employee details, date of service and service centre details are managed by the automobile service centre and can be made handy.
7. Administrator can access all records and update cost of services, employee salary, introduce offers and manage all records.
8. Time consumption is low, operational efficiency is high, easy to navigate and use.

Database Schema:

Service_Centre_db (auto_man, auto_show, ser_center, cus, spares, employees, fault, vehicle, bill, transaction)

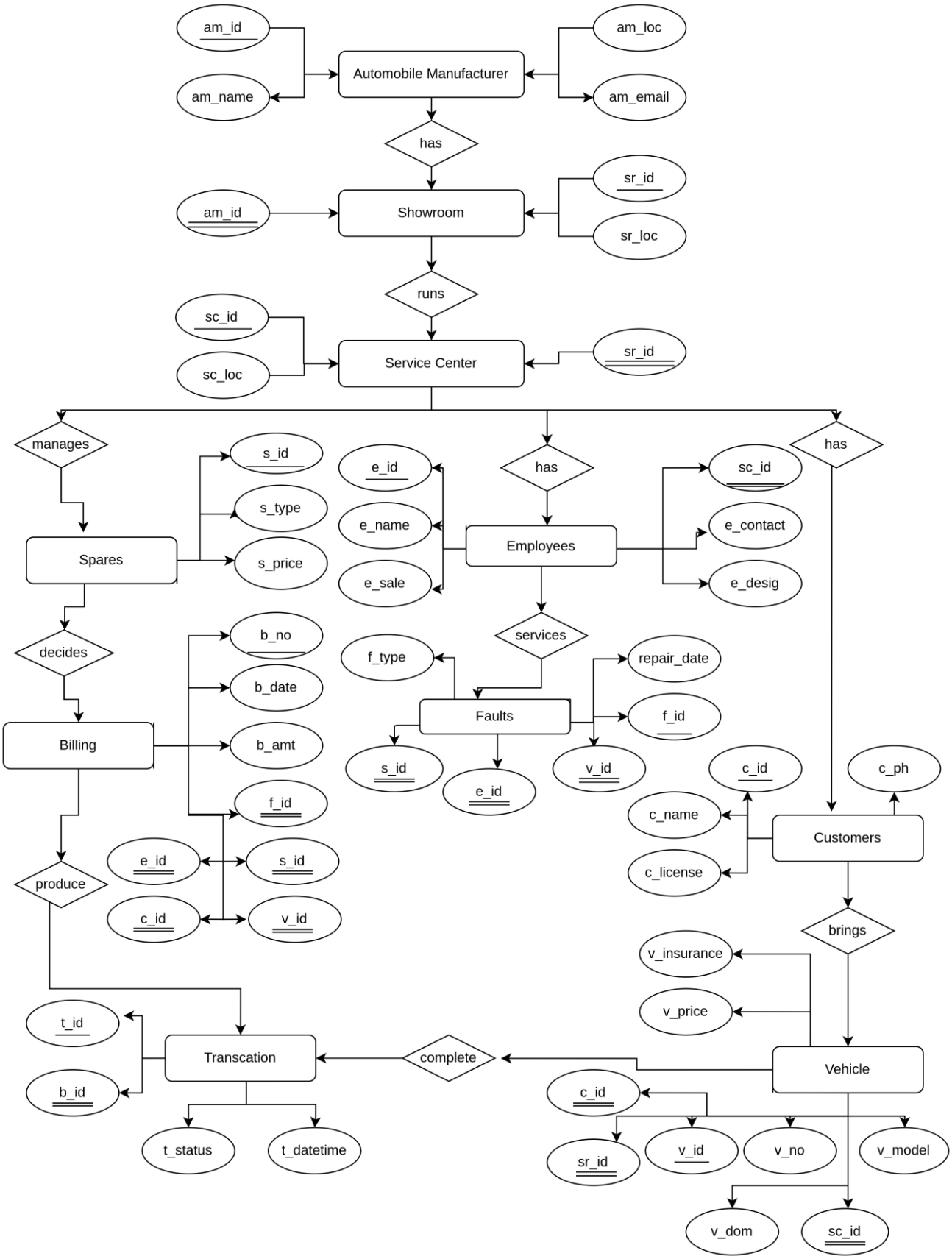
where,

Service_Centre_db is the name of the database design

auto_man, auto_show, ser_center, cus, spares, employees, fault, vehicle, bill, transaction are the tables / relations involved.

ER DIAGRAM :

Tables Involved:



Automobile manufacturer:

This table used to store an automobile manufacturer details.

Auto_man *(am_id, am_name, am_loc, am_email)*

Automobile showroom:

This table used to store the automobile showroom details.

Auto_show *(sr_id, sr_loc, am_id)*

Service centre:

This table used to store the Service centre details.

Ser_center *(sc_id, sc_loc, sr_id)*

Employee:

This table used to store the employee details.

Employees *(e_id, e_name, e_sal, e_contact, e_designation, sc_id).*

Customers:

This table used to store the customers details.

Cus *(c_id, c_name, c_license_no, c_ph)*

Spares:

This table used to store the Spares details.

Spares *(s_id, s_type, s_price).*

Fault:

This table used to store the Fault details.

Fault *(f_id, f_type, repair_date, s_id, v_id, e_id).*

Vehicle:

This table used to store the vehicle details.

Vehicle *(v_id, v_no, v_model, v_price, v_dom, c_id, sr_id, sc_id, v_insurance).*

Billing:

This table used to store the billing details.

Bill *(b_no, b_date, b_amt, f_id, s_id, v_id, e_id, c_id, sc_id).*

Transactions:

This table used to store the transactions details.

Transaction *(t_id, b_id, t_status, t_date_time).*

Snapshots :

//to be filled

Result:

Thus, a model automobile service centre was analysed, and the automobile service centre database management system mini project was implemented.