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**EDA Project Part 1**

Our EDA Model Description: **Car Insurance Company Model.**

**Entity-Relationship (ER) Model Documentation**

**Entity Types and Attributes:**

COMPANY

* CompanyCode (Primary Key)
* CompanyName
* CompanyContact
  + Email
  + Phone

CUSTOMER

* CustomerSSN (Primary key)
* CustomerName
  + CastLastName
  + CustFirstName
  + CustMiddleInitial
* Customer DOB
* CustomerGender
* CustomerContact
  + Email
  + Phone
* CustomerLisc#

VEHICLE

* VIN (Primary key)
* Brand
* Model
* Year
* LicensePlateNumber
* Milage
* VehicleType
* CustomerSSN (Foreign Key)

CONTRACT

* ContractID (Primary key)
* CoverageType (plan)
* MaximumCoverage
* StartDate
* EndDate
* MonthlyPrice
* CompanyID (Foreign key)
* VIN (Foreign Key)
* CustomerSSN (Foreign key)

CLAIM

* ClaimID (Primary key)
* AccidentDate
* AccidentDesc
* ClaimAmount
* Status

AGENT

* AgentSSN (Primary key)
* CompanyCode(Foreign key)
* AgentName
  + AgentLastName
  + AgentFirstName
  + AgentMiddleInitial
* AgentDOB
* AgentContact
  + Email
  + Phone

PAYMENT

* PaymentID
* PaymentAmount
* PaymentMethod
* DateOfPayment
* ContractID ( Foreign key)

ADDRESS (weak)

* AddressLine1
* Zip
* CustomerSSN (Foreign key)
* AgentSSN (Foreign key)
* AddressLine2
* State
* City

**Relationship Types and Attributes:**

COMPANY\_CONTRACT : MANAGE

* Cardinality ratio:
  + One-to-many (1:N)
  + COMPANY participation (0,N)
  + CONTRACT participation (1,1)
* Attributes:
  + CompanyID
  + ContractID
* Explanation:
  + Each company can offer multiple insurance contracts, but they can also offer no contracts.
  + One contract must be linked to a company in order to exist

COMPANY\_AGENT : EMPLOY

* Cardinality ratio:
  + One-to-many(1:N)
  + Company participation (0,N)
  + Agent participation (1,1)
* Attributes:
  + CompanyID
  + AgentSSN
* Explanation
  + Companies may employ multiple agents
  + Each agent must only be employed by one company

CUSTOMER\_CONTRACT : BUY

* Cardinality ratio:
  + One-to-many (1:N)
  + CUSTOMER participation (1, N)
  + CONTRACT participation (1, 1)
* Attributes:
  + CustomerSSN
  + ContractID
  + DateIssued
* Explanation:
  + Each customer may purchase multiple contracts but must purchase at least one contract to be a customer
  + Each contract can only be assigned to one customer

CUSTOMER\_CLAIM : FILES

* Cardinality ratio:
  + One-to many (1:N)
  + CUSTOMER participation (0, N)
  + CLAIM participation (1,1)
* Attributes:
  + CustomerID
  + ClaimID
* Explanation:
  + Customers may file zero to multiple claims
  + Each claim can only be filed by one customer

CUSTOMER\_PAYMENT : PAYS

* Cardinality ratio:
  + One-to-many(1:N)
  + CUSTOMER participation (1,N)
  + PAYMENT participation(1,1)
* Attributes:
  + CustomerSSN
  + PAYMENTID
* Explanation:
  + A customer must have a payment, but can have multiple payments.
  + A payment should be assigned to one customer.

CUSTOMER\_ADDRESS : LIVES

* Cardinality ratio:
  + One-to-many(1:N)
  + CUSTOMER participation (1,N)
  + ADDRESS participation(1,1)
* Attributes:
  + CustomerSSN
  + AddressLine1
  + ZIP
* Explanation:
  + A customer must have an address, but can have multiple addresses.
  + An address should be assigned to one customer.

CUSTOMER\_VEHICLE: OWN

* Cardinality ratio:
  + One-to-many(1:N)
  + CUSTOMER participation ( 0,N)
  + VEHICLE participation(1,1)
* Attributes:
  + CustomerSSN
  + VIN
* Explanation:
  + A customer can have multiple vehicles, but doesn’t matter if they have none.
  + A vehicle must be assigned to one customer.

VEHICLE\_CONTRACT : ASSIGNED\_TO

* Cardinality ratio:
  + One-to-one (1:1)
  + VEHICLE participation (1,1)
  + CONTRACT participation (1,1)
* Attributes:
  + VIN
  + ContractID
* Explanation:
  + Each vehicle can only be assigned to one insurance contract
  + Each contract can only cover one vehicle

CONTRACT\_CLAIM : ASSOCIATED\_WITH

* Cardinality ratio:
  + One-to-many (1:N)
  + CONTRACT participation (0,N)
  + CLAIM participation (1,1)
* Attributes:
  + ContractID
  + ClaimID
* Explanation:
  + Each contract can be associated with zero to multiple claims
  + Each claim can only be linked to a single contract

AGENT\_CONTRACT : SELL

* Cardinality ratio:
  + One-to-many (1:N)
  + AGENT participation (0,N)
  + CONTRACT participation ( 1,1)
* Attributes:
  + AgentSSN
  + ContractID
* Explanation:
  + Each Agent can sell many contracts, but it does not matter if they sell none.
  + Each contract can only cover one agent.

AGENT\_ADDRESS : LIVES

* Cardinality ratio:
  + One-to-many (1:N)
  + AGENT participation (1,N)
  + ADDRESS participation (1,1)
* Attributes:
  + AgentSSN
  + AddressLine1
  + ZIP
* Explanation:
  + An agent must have an address, but can have multiple addresses.
  + An address should be assigned to one agent.

CONTRACT\_PAYMENT : LINKED\_TO

* Cardinality:
  + One-to-many (1:N)
  + PAYMENT participation (1,1)
  + CONTRACT participation (1,N)
* Attributes:
  + PaymentID
  + ContractID
* Explanation:
  + Each payment can only pay for one contract
  + Contracts can be paid by multiple payments over the course of its term