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Course Section: Database Systems CSCI-GA 2433 Section 001

**Database Systems Project Part 1: Modeling**

Total in Points (100 points in total):

Professors Comments:

Affirmation of my Independent Effort: Devesh Jaiswal

**Project Part 1 Report**

In the zip file there should be a screenshot of the ER diagram, a documentation PDF for the ER diagram, and this report document. I have attached a screenshot of the conceptual schema and the pdf file for clarity and since this was created in the DbSchema tool, so I was able to generate a pdf file that shows the documentation of the ER diagram. In total I have 25 entities that are described below. These are the necessary entities in order to fulfill the use cases mentioned in the project proposal. I took inspiration from the insurance EDA that was given from the powerpoint slides essentially. I extracted the necessary entities for the use cases of my project and adjusted to fulfill the requirements. I have also added all necessary relationships that I could come up with between the entities for now. I used DbSchema as the tool for creating this ER Diagram. I established the primary and foreign keys for each entity type as well as the respective data types for each attribute. I have not specified constraints except for cardinality constraints as I would plan to do this when collecting the data and basing it off of the data characteristics. Essentially the schema I design represents 7 aspects of the insurance business: customers, agents(employees), companies, health insurance, vehicle insurance, marketing, and feedback.I plan to optimize this once looking at the actual data that will be stored in the next step.

**Entities and Respective Relationships:**

1-Customer: represents an individual customer with necessary attributes.

2-CustomerAcct: represents a customer insurance account with necessary attributes. Has 1:1 relationship to Customer with CustSSN as the foreign key.

3-CustomerRelation: represents an individual that is related to a customer with necessary attributes. Has a N:1 relation to Customer with RelatedSSN as foreign key representing the customer we are related to and DependentSSN representing as a foreign key representing the individual related to the customer who is a customer as well.

4-CustomerAddress: represents the address of an individual customer with necessary attributes. Has a relation N:1 to Customer with CustSSN as foreign key.

5-Customer Billing: Represents the billing information of a customer with necessary attributes. Has relation to N:1 CustomerAcct with CustSSN as foreign key.

6-DependentAcct: Represents the account of the related individuals of customers with necessary attributes. Has a 1:1 relation with CustomerAcct with Dependent\_SSN as foreign key.

7-HealthInfo: Represents basic health information of a customer with necessary attributes. Has 1:1 relationship with Customer with CustSSN as foreign key.

8-MedicalHistory: Represents medical history of a customer with necessary attributes. Has a 1:1 relationship with HealthInfo with CustSSN as foreign key.

9-HealthPolicy:Represents the medical insurance policy customer owns with necessary attributes. Has N:1 Relationship with Customer and N:1 relationship with Agent with CustSSN and AgentID has foreign key respectively.

10-HealthClaim: Represents a claim made on a policy by a customer with necessary attributes. Has N:1 relationship with HealthPolicy with policyNUMClaimed as foreign key.

11-HealthTrends: Represents the societal health trends that may affect medical insurance prices with necessary attributes.

12-VehicleInfo: Represents the basic vehicle information that a customer owns. Has a N:1 relationship with Customer with CustSSN as foreign Key.

13-VehiclePolicy: Represents the vehicle policies the customer owns with necessary attributes. Has a N:1 relationship with Customer with CustSSN as foreign key.

14-VehicleClaim: Represents the vehicle claim a customer has made with a certain policy with necessary attributes. Has a N:1 relationship with Customer with CustSSN as foreign key and 1:1 relationship with VehiclePolicy with PolicyNUM as foreign key.

15-VehicleTrends: Represents society and vehicle related trends that may affect vehicle insurance prices with necessary attributes.

16-Invoice: Represents an invoice given by a company to a customer with necessary attributes. Has a N:1 relationship with Customer with CustSSN as foreign key and N:1 relationship with company with CompanyCode as foreign key.

17-InvoiceDetail: Represents the specific details for a certain invoice with necessary attributes. Has a 1:1 relationship with invoice where InvoiceID is the foreign key.

18-Agent: Represents an insurance agent with necessary attributes that works for a certain company. Has N:1 relationship with Company with CompanyCode as foreign key.

19-Company: Represents an insurance company with necessary attributes.

20-OfferedPoliciesHealth: Represents the specific medical insurance policies provided by a specific company with necessary attributes. Has a N:1 relationship with a company where companyCode is the foreign key.

21-OfferedPoliciesVehicle:Represents the specific vehicle insurance policies provided by a specific company with necessary attributes. Has a N:1 relationship with a company where companyCode is the foreign key.

22-Policy\_Company\_MarketingEmail: Represents the policy or company individual marketing campaign done by email by a certain company with necessary attributes. Has a N:1 relationship with Company where companyCode is the foreign key.

23-CompanyMarketingTelevision: Represents the individual television marketing campaign done by a certain company with necessary attributes. Has a N:1 relationship with a company where companyCode is the foreign key.

24-PotentialCustomers: Represents the individual potential customers the company was able to reach through marketing campaigns with necessary attributes. Has N:1 relationship with CompanyMarketingTelevision and Polciy\_Company\_Marketing\_Email where the campaignID serves as the foreign key.

25-FeedBack: Represents individual customer feedback to the company with necessary attributes. Has a N:1 relationship with a customer where CustSSN is foreign key and N:1 relationship with Agent where Agent\_id is the foreign key.