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Jan. 17, 2021

COMP 3421: A1

(a) Database Description: Auto Insurance Company's Customer Database

 This database is about the customers registered in an auto insurance company. The database aims to help the auto company to record the customers' information and their insurances condition. The customer's information including the customer ID, name, age, gender, SSN, and driving license number. The company will be supposed to have customers from different city, and each customer can have multiple cars. Each city has the different climate, and population density, which can affect the premium. Cars will be registered by their VIN code, brands, colors, and types. The company will have different coverage plan can be chosen by the customers. Each customer can choose a specific plan of the insurance. Each plan can have multiple different coverage and deductible amount choices, which will affect the premium of the insurance. Finally, each insurant can have multiple accident driving records, which will affect the premium as well. Record will include Record ID, date, and type (or severity) these three properties. Premium will include two properties: amount and payment period. This database might meet difficulty on collecting customer data, such as the customer's name and driver license number. However, I think this can be a good practice topic of the data management.

(b) ER Diagram (see the next page)

(c) High Level Interactions
   1) *change premium*

      A function which given the customer ID, location, plan, coverage, and driving record information, then the function will return the new premium of the insurance plan, and update the entities' information if any of them has been changed based on the new information.

   2) *driving record update*

      A function takes a customer's new driving record and updates the customer's premium based on the new accident record type (severity). Also, the new record should be added into the customer's driving record database.

Customer

***customer ID: int
name: string
age: int
gender: string
SSN : string
Driving License #: int

1 — **Owns** — M

Car

***VIN code: string
brand : string
color : string
type : string

N — **Chooses**

1

N — **Lives in**

1

1 — **Has** — M

Plan and Type of the Insurance

***plan name: string

1

Has — M

City

***name: string
climate: string
population density: int

1

Driving Record

***Record ID: string
date : string
type : string

N

Coverage and Deductibable Amount

***amount: int

1

Affects

1 — **Affects** — 1

Affects

1

1

Premium
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amount: int
payment period: string