

Assignment1: Conceptual Model and Logical Model of a Database System

Instruction: For each case given, do the following:

1. Perform a conceptual design and logical design of the elaborated requirements discussed by the case.
2. For any missing details, explicitly state necessary assumptions or conditions you make. Make your assumptions rational and practical.
3. Be sure to make your design/diagram easy to read, consistent, conform to proper naming conventions, and best practices.

Case I: Motor Vehicle Insurance Policy Management

An insurance company writes policies for drivers. One policy can cover many drivers and also many vehicles, but a vehicle can be related to only one policy. Drivers can share one or more vehicles (e.g. a husband and wife own one vehicle and they both drive the same vehicle or a family can have multiple vehicles).

The company gets a master list of violations from the Department of Motor Vehicles. These violations are then input into the system and used to determine the price of the policy. A driver may commit more than one violation. One or more drivers can commit the same violation. The system should keep a track of all customers - active (with insurance) and inactive (held in an archive – for cancelled customers). All customers should be able to get a quote, insurance or cancel the insurance.

Case II: FixIT

The repair company “FixIT” has hired you to design a database system to keep track of its operations. FixIT gives services to repair any IT computing devices such as computer desktops, laptops and smartphones of any models and makes. The system should keep track of the repair jobs, the items (or parts) used for each repair job, the labor costs for each repair job, the repairmen performing each repair job, and the total cost of each repair job.

When a customer bring a device in to be repaired, he/she describes the device’s problem, makes a deposit on the repair job, and is given an estimated date to return and uplift their devices. Repairmen then perform repairs based on the repair job, and detail the labor costs and the items (parts) used for each repair job.

Each customer may check the status and details of his/her repair job from the online system by entering the job ID or customer name. When a customer returns, he/she pays the total cost of the repair job less the deposit, collects a receipt for the payment, and uplifts the repaired device.