Lab 2

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Question A

The following paragraph describes University Hospital’s nursing ERD requirements. A nurse must be either a Registered Nurse (RN) or a Licensed Practical Nurses (LPNs). A nurse cannot be a RN and a LPN at the same time. A RN may direct one, none, or several LPNs; a single LPN will be directed by only one RN. MVCH wishes to track these RN direction responsibilities for accountability and quality control purposes within the hospital. A nurse (both RN or LPN) may or may not be assigned to a care center. A nurse may also be assigned to multiple care centers. A care center must have at least one nurse. Each care center assignment must have a start and end date.

Diagram

Description automatically generated

Question B

A non-profit organization wants to keep track of people in its organization. A person has these attributes: SSN, Name, Address, City, State/Zip, and Phone. There are 3 types of persons: employees, volunteers, and donors. Employees have date hired attribute. Volunteers have skill attribute (multi-valued). Donors have relationship with donated items. One donor may donate one or multiple items while each item may belong to none or multiple donors. There are other types of persons that is not being tracked, otherwise ignored. A person may be any of the 3 types at the same time. (e.g. A person may be a donor and an employee at the same time).

Diagram

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Question C

Draw an EER diagram for the following description of a law firm: Each case handled by the firm has a unique case number; a date opened, date closed, and judgment description are also kept on each case. A case is brought by one or more plaintiffs, and the same plaintiff may be involved in many cases (at least involved in one case). A plaintiff has a requested judgment characteristic. A case is against one or more defendants, and the same defendant may be involved in many cases (at least involved in one case). A plaintiff or defendant may be a person or an organization. Over time, the same person or organization may be a defendant or a plaintiff in cases. In either situation, such legal entities are identified by an entity number, and other attributes are name and net worth.

**Assumption 1:** The Legal entity can only be either plaintiff or defendant; (total completeness)

Diagram

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Question D

A technology company provides offerings to its customers. Offerings are of two separate types: products and services. **Offerings** are identified by an **offering ID and an attribute of description**. In addition, products are described by product name, standard price, and date of first release; services are described by name of the company’s unit responsible for the service and conditions of service. There are repair, maintenance, and other types of services. A repair service has a cost and **is the repair of some product**; a maintenance service has an hourly rate. Fortunately, some **products never require repair**. However**, there are many potential repair services for a product**. A customer may purchase an offering, and the company needs to keep track of when the **offering was purchased and the contact person for that offering** with the customer. Unfortunately, **not all offerings are purchased.** Customers are identified by customer ID and have descriptive data of name, address, and phone number. When a service is performed, that service is billed to some customer. When a customer is billed for a service (although some may never require a service of any type), the company needs to keep track of the date the service was performed, the date the bill is due, and the amount due.

Assumption 1: One offering cannot be a product and a service.

Assumption 2: One service can be both repair and maintenance at the same time.

Diagram

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