Assignment 3 ERD

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1. ER Model – Ice Cream Food Truck Business

The ERD is attached below.

2. Use Case

Goal

Order an ice cream cone.

Pre-condition(s)

Recipes are in the database, and the customers can choose basic recipes or make their own combinations.

Post-condition(s)

The customer's choice is recorded in the database, and ingredients inventories change.

Constraints

Ingredients remaining. Basic recipes.

Trigger events

 The ice cream truck is in the event and the customer order products.

Actors

The customer, the order taker and the ice cream maker.

Frequency of use

Every event, every customer, every order.

Basic flow

1. Customer comes to the ice cream truck in the event.
2. Customer orders an ice cream.
3. Order taker makes sure that the product ordered is available.
4. Customer requests for a cone and other choices, such as topping, flavor, etc.
5. Order taker records the order, ice cream maker makes product according to customer's demands.
6. Ingredients remaining change.

Exception flow

1. If the truck is out of the ingredient, the recipe is not available and the customer cannot make a choice of products including this ingredient.
2. If some customers make the choice of some ingredient which is out of stock, they should make another choice or cancel the order.
3. If some machines are in maintenance, customers cannot order a product made by that type of machine.

3. Our Food Truck

Damn Good Ice Cream

Entity-Relationship Diagram

Event entity attributes:
- Anticipated End Time
- Anticipated End Date
- Start Date/Time (underlined)
- Event Name (underlined)
- Status
- Actual End Date
- Actual End Time
- Total Dollar Sales

Event — (1,1) — **Has a** — (0,M) — **Log**

Log attributes:
- Event Name (underlined)
- Ingredient ID (underlined)
- Unit
- Quantity

Event — (1,M) — **Sells** — (1,M) — **Products**

Choices attributes:
- Choices ID (underlined)
- Quantity
- Name
- Unit of Measure

Choices — (0,M) — **Are Composed of** — (1,1) — **Recipes**

Choices — (0,M) — **Are composed of** — (1,M) — **Ingredients** — (0,M) — **Store in**

Ingredients attributes:
- Cost
- Status
- Ingredients ID (underlined)
- Names (underlined)
- Categories (underlined)

Recipes attributes:
- Quantity
- Ingredients ID
- Recipes ID (underlined)
- Unit of Measure

Products attributes:
- Code (underlined)
- Is Available
- name

Products — (1,1) — **Have** — (1,M) — **Prices**

Prices attributes:
- Dollars
- Start_date (underlined)
- Cents

Prices — (1,1) — **Are Determined by** — (1,M) — **Factors**

Factors attributes:
- Factor ID (underlined)
- Ingredient Cost
- Subsidized Event
- Labor Rates
- Target Demographic

Fee Amount attributes:
- Delivery Charge
- Expedite Charge
- Credit/Discount
- per mileage cost
- fixed transportation fee

Local Supplier / **National Supplier** — (D) — **Supplier**

Fee Amount — (1,1) — **includes** — (1,1) — **Quote**

Supplier — (1,1) — **Provides** — (0,M) — **Quote**

Supplier attributes:
- Phone Number
- Name (underlined)
- Location

Location attributes:
- Street Address
- State/Province
- Postal Code
- Country
- City

Quote attributes:
- Quote ID (underlined)
- Issue Date
- Expiration Date
- Total Pirce
- Ingredient Name
- Tax Amount
- Unit
- Unit Cost
- Quantity

Quote — (1,1) — **Becomes** — (0,1) — **Delivery**

Delivery attributes:
- OrderDate
- ArrivalDate
- Ingredient ID (underlined)

Delivery — (1,1) — **Arrives at** — (1,1) — **Inventory**

Inventory attributes:
- Unit
- Expiration Date
- Ingredient ID (underlined)
- Quantity
- Quantity Remaining

Ingredients — (0,M) — **Store in** — (1,1) — **Inventory**

Equipments — (1,1) — **Require** — (0,M) — **Maintenance** — (1,1) — **is recorded in** — (0,M) — **Maintenance Log**

Equipments attributes:
- Equipment Name (underlined)
- Equipment type
- Install Date

Maintenance attributes:
- Maintenance Name (underlined)
- Timing Trigger Indicator
- Trigger Quantity
- Trigger Unit
- Duration

Maintenance Log attributes:
- Equipment Name
- Maintenance Name
- Maintenance Date
- Actual Duration
- LogID (underlined)
- schedule status
- Note