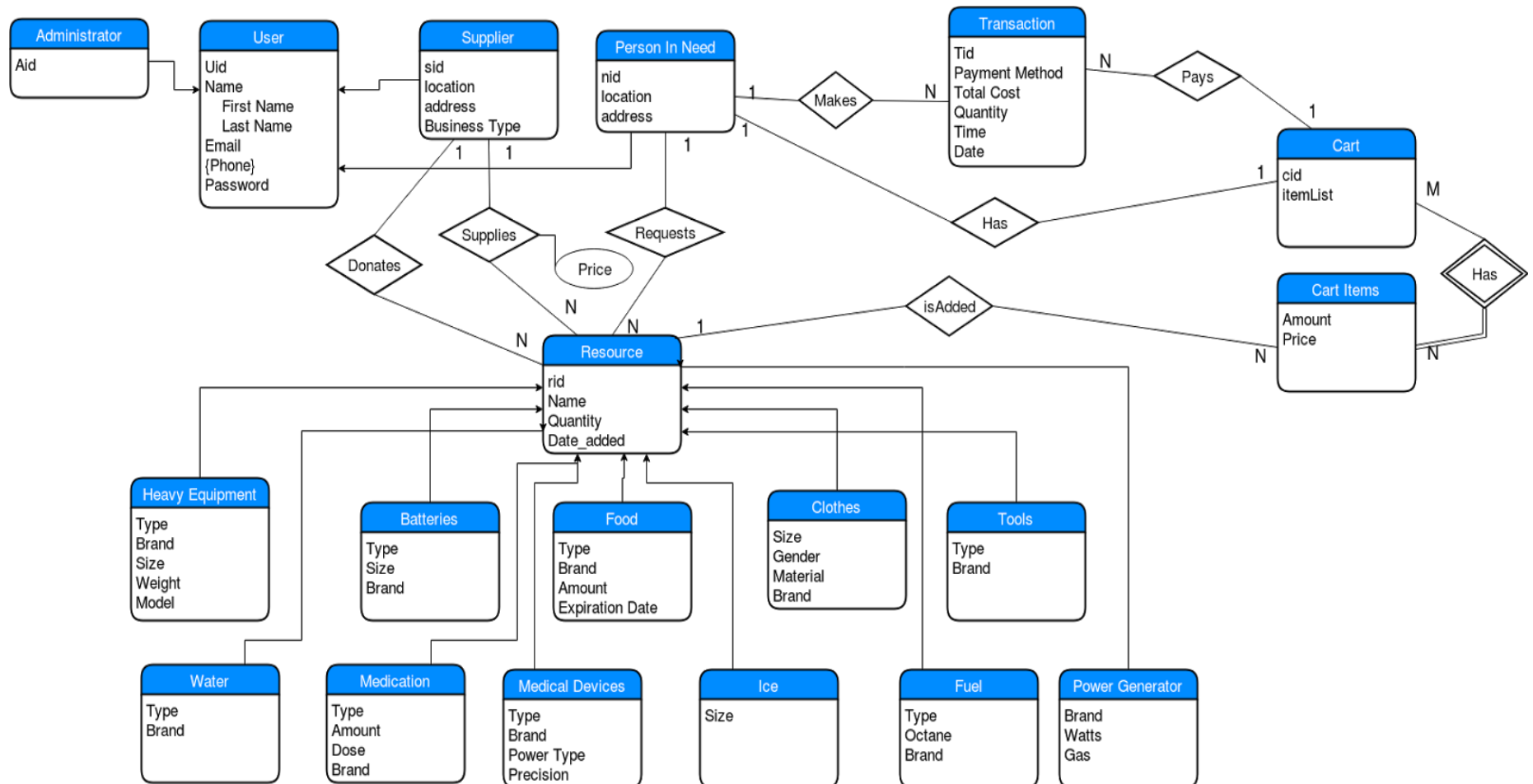


ICOM 5016 - Fase 1: E-R Model Diagram

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Description of Relations:

- **Supplier - Resource (Supplies):**
 - One to Many
 - A supplier can sell many different resources which are the supplies, but that specific resource can only be sold by one supplier. The price of the resource is also involved in the relation.
- **Supplier - Resource (Donates):**
 - One to Many
 - A supplier can donate many different resources, but that specific resource can only be donated by one supplier.
- **Person in Need - Resource (Request):**
 - One to Many
 - A person in need may need to request many resources, but that specific resource can only be requested by one person in need.
- **Person in Need - Transactions (Makes):**
 - One to Many
 - A person in need can make many transactions, but a transaction can only be made by one person in need.
- **Person in Need - Cart (Has):**
 - One to One
 - A person in need has only one cart, and a cart can only belong to one person in need.
- **Transactions - Cart (Pays):**
 - Many to One
 - A cart can have many transactions but a transaction is only linked to one cart. Meaning, that many transactions can pay for the contents of one cart, but a transaction belongs to only one cart.
- **Cart - Cart Items (Has):**
 - Many to Many
 - A cart has multiple cart items and cart items can be in multiple carts at the same time. Cart item is a weak entity because it can't exist without a cart. There must be total participation of cart items.
- **Resource - Cart Items (isAdded):**
 - One to Many
 - A resource is added as multiple cart items, but only one cart item can be identify as an specific resource.

Specialization / Generalization:

- **Generalization of Users:**
 - Administrator
 - Supplier
 - Person In Need
- **Generalization of Resources:**
 - Heavy Equipment
 - Batteries
 - Food
 - Clothes
 - Tools
 - Water
 - Medication
 - Medical Devices
 - Ice
 - Fuel
 - Power Generator

Description of Generalization:

- Users can be divided in specific or general groups so it can be easier to give roles when programing the webpage.
 - Users are divided in Administrators, Suppliers, and Person In need
- Resources can be divided in specific groups so the person in need can buy something more specific or a supplier can upload a specific resource.
 - Resources are divided in heavy equipment, batteries, food, clothes, tools, water, medication, medical devices, ice, fuel, and power generator.