UNIVERSIDAD DE PUERTO RICO

RECINTO UNIVERSITARIO DE MAYAGÜEZ

ICOM5016/CIIC4060 - Introduction to Database Systems

Term Project - Backend System for Disaster Site Resource Locator

Phase 1 - Conceptual Design

ER Diagram Report

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Entities

1. **Person -** This entity is in charge of managing the attributes of a person, which can be an administrator, a supplier or a consumer. It is the first in the hierarchy and generalizes common attributes between the ones mentioned before. It has the following attributes:
    a. **pid** - Person id. It is also a primary key with a serial type so that it can be auto generated.
    b. **pfirst_name** - Person's first name. It has a Variable Char type.
    c. **plast_name** - Person's last name. It has a Variable Char type.
    d. **pphone_number** - Person's phone number. It has a Multi Value type.
    e. **paddress** - Person's address. It has a Variable Char type.
    f. **pdate_of_birth** - Person's date of birth. It has a Date type.
2. **Administrator -** This entity is in charge of managing the administrator's attributes. This entity only counts with an administrator id because its other attributes are derived from its parent (Person). It has the following attribute:
    a. **aid -** Administrator id. It is also a primary key with a serial type so that it can be auto generated.
3. **Supplier -** This entity is in charge of managing the supplier attributes. This entity counts with a supplier id as well as company name. The rest of the attributes are derived from its parent (Person). It has the following attributes:
    a. **sid** - Supplier id. It is a serial primary key.
    b. **scompany_name** - Supplier Company Name. This attribute is utilized to store the suppliers company name.
4. **Consumer** - This entity is in charge of managing the consumer attributes. This entity only counts with a customer id because its other attributes are derived from its parent (Person). It has the following attribute:
    a. **cid** - Consumer id. It is also a primary serial key.
5. **Order** - This entity is in charge of managing the order attributes. This entity counts with an order id, a supplier id, a resource id and an order type. It has the following attributes:
    a. **oid** - Order id. This is a primary serial key.
    b. **sid** - Supplier id. This is a foreign key from the Supplier Entity.
    c. **rid** - Resource id. This is a foreign key from the Resource Entity.
    d. **otype** - Order type. This is a variable character type that stores the type of order.
6. **Resource** - This entity is in charge of managing the resource attributes. This entity counts with a resource id, resource quantity, resource type and resource price. It has the following attributes:
    a. **rid** - Resource id. This is a primary serial key.
    b. **rquantity** - Resource Quantity. This is an integer that keeps track of the amount of a specific resource.

c. **rtype** - Resource type. This is a variable character type that stores the resource type.
d. **rprice** - Resource price. This is a float that stores the price for the resource.

Relationships

1. **Manages -** This relationship is between a person and an administrator. It has a one-to-many relationship. This is because one administrator can manage many persons but not vice versa.
2. **Is a -** This relationship is between two sets of entities. This relationship is linked between the following entities: Person, Administrator, Supplier and Consumer. In all cases it is a one-to-one relationship.
3. **Supplies -** This is a relationship between a supplier and a resource. It is a many-to-many relationship. This is because many suppliers can supply many resources. At the same time, many resources can be supplied by a number of suppliers.
4. **Places -** This relationship is between a consumer and an order. This is a one-to-many relationship because a consumer can place many orders but a specific order must have just a consumer linked to it.
5. **Belongs -** This relationship is one between a resource and an order. It is a many-to-many relationship because many resources can be present in many orders and at the same time, many orders can have different resources linked to it.