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**Term Project – Backend System for Disaster Site Resources Locator**

**Entity Relationship Diagram Report**

The following are descriptions that illustrate the behavior and interactions of the entities within the Entity Relationship diagram.

**Tables:**

Resources: This table holds information on which all resource names, their resource id and a foreign key linking them to a specific resource category.

Resource Details: Hold details of the resource such as availability (purchased, reserved, available), quantity, price per unit, location, and the supplier.

Resource Category: Holds the name of each type of resource in the app.

Users: Represents every user and holds their basic information: Name, date of birth, email and password.

User Category: Holds all the categories a user can fall under. A user can be a requester, supplier or administrator.

Request: Each entry represents a request from a user for a specific resource, holds the information on which resource is requested, how much of that resource is requested, when the request was posted, the location where its requested to be brought, the user requesting, the user that supplied the requested resource (initially null) and the date at which it was supplied (initially null).

Payment Info: Holds the payment information a user will use to pay for supplies, or to receive from selling supplies. Information like: card number, card type, card provider, and card date of expiration

Transaction: Each entry represents an exchange of goods between users, whether it was reserving resources or purchasing them. Holds information such as: purchaser, supplier, resource being exchanged, quantity of the resource being exchanged, the date of the transaction and the amount of money paid for the resource (can be zero in the case of reservation)

**Relationships:**

* User-Request:
  + User Makes Request: 1 to Many with total participation on the Many side. User is the identifying entity and request is a weak entity. Users can make multiple requests and requests cannot exist without a user.
  + User Supplies Request: 1 to Many. A user can supply many requests
* User Participates in Transaction: 1 to Many with total participation on the Many side: A user can have many transactions. Transactions cannot exist without a user. In a transaction record, there is a user that acts as paying user, and a user that acts as the supplying user (received the payment).
* User has Payment\_Info: 1 to Many. Total participation on the Many side. A user can have various Payment\_Info records and a Payment\_Info record cannot exist without belonging to a user.
* User belongs to User\_Category: Many to 1. A user has to identify as a supplier, person seeking supplies or administrator. This allows there to be consistency for the type of user.
* User-Resource\_Details: 1 to Many. A user can provide various resources and the details table is the one that separates the resources by supplier location, etc.
* Transaction-Resource: Many to 1. A resource can participate in many transactions, but each transaction can only be used to exchange one resource.
* Resource-Request: 1 to Many. A resource can be requested many times, but each request can only be requesting one resource.
* Resource-Resource\_Details: 1 to 1. Each resource record has exactly one resource detail record that describes the details for that resource.
* Resource-Resource\_Category: Many to 1. One category can be ascribed to many resource records, but each resource has only one category.