

Disaster Recovery Application

ER Diagram Entities and Relationship Descriptions

I. Entities

- a. **User:** This entity contains all the users in the database (suppliers, administrators and disaster victims). All users (suppliers, administrators and disaster victims) have a name, last name, email, phone and password. And are identified as a victim, supplier or administrator through the **user_id**.
- b. **Administrator:** This **user** has the total access to the Disaster Site Resources Locator App.
- c. **Disaster Victim:** This **user** makes a **request** for a **resource** he or she needs. This user has an address and a credit card with which he or she may perform purchases.
- d. **Supplier:** This user supplies some of the resources available for the disaster victims. All suppliers work for a company, have an address and supply to a specific region or regions.
- e. **Address:** This entity contains the address of the **disaster victims** and **suppliers** (we didn't put the address to the administrator because we don't believe it's relevant). Each address has a street, city, state, country and zip code. An address points to one specific **region** as a region can have many addresses.
- f. **Region:** A region is the area of which the suppliers will supply the resources. Each region can have many addresses.
- g. **Resource:** This entity is requested by the disaster victim. Each resource belongs to a specific category. There are X amount of each resource, if a resource has 0 quantity then it is not available.
- h. **Category:** Each category has multiple resources and each category may have multiple subcategories. For example category water has two subcategories: bottled water and 1 gallon water
- i. **Subcategory:** Each category may have multiple subcategories
- j. **Request:** A request is made by the disaster victim who wants to receive a resource. Each request was submitted on a specific day (used for statistics) and has a status. The status will determine if the request was resolved, is pending or was submitted successfully.

- k. **Request Completed:** This is each request that was successfully resolved. This request completed has a date resolved attribute that is going to be used for statistics. The order_type attribute is used to determine whether the request completed was a purchase or a donation. Every one of these requests have a supplier and a resource associated with it.
- l. **Bank Account:** Each supplier has one or multiple bank accounts, with x amount of money in it. There are different types of accounts.
- m. **Credit Card:** Each disaster victim has at least one credit card but may have multiple credit cards.
- n. **Daily Statistic:** This is used to keep track of the number of resources in need, available and resolved on the current day.
- o. **Weekly Statistic:** This is used to keep track of the number of resources in need, available and resolved on the current week.
- p. **Region Statistic:** This is used to keep track of the number of resources in need, available and resolved in a specific region.

II. Relationships

- a. **Administrator User:** uses the user's id to determine that the user is a administrator.
- b. **Victim User:** uses the user's id to determine that the user is a victim.
- c. **Supplier User:** uses the user's id to determine that the user is a supplier.
- d. **Supplier Address:** uses the supplier's address id to determine where he or she lives.
- e. **Victim Address:** uses the victim's address id to determine where he or she lives.
- f. **Bank Account Owner:** determines if the supplier has a bank account associated with him or her.
- g. **Distribution Region:** determines the regions where the supplier can supply resources.
- h. **isFrom:** relates the address and region, determines if a address is from a specific region.
- i. **Supplies:** Relates supplier and resources and determines what resources does the supplier supply.
- j. **Makes:** Relates the disaster victim and the request entity. Each victim can make a request for a specific resource.

- k. **Resources needed:** Relates request and resource. Whenever a victim makes a request for a specific resource, that resource is marked as needed. Every resource needed has a price, it can be free (\$0.00) or not.
- l. **isCategory:** Relates category and resource. Each resource is part of a category.
- m. **Region Resources Available:** Relates the region statistics with the resources as we need the resources information to determine which resources are available and/or needed in each region.
- n. **Weekly Resources Available:** Relates the weekly statistics with the resources as we need the resources information to determine which resources are available and/or needed in each week.
- o. **Daily Resources Available:** Relates the daily statistics with the resources as we need the resources information to determine which resources are available and/or needed in each day.
- p. **Daily Matching:** Relates each daily statistic with request completed to determine the number of requests that have been resolved each day.
- q. **Weekly Matching:** Relates each weekly statistic with request completed to determine the number of requests that have been resolved each week.
- r. **Daily Resource in Need:** Relates request and daily statistics to determine the number of resources victims need each daily
- s. **Weekly Resource in Need:** Relates request and daily statistics to determine the number of resources victims need each weekly
- t. **Region Resources in Need:** Relates region statistics with request to determine the number of resources needed in each region.
- u. **Request No:** Relates request and request completed to determine which requests have been completed.
- v. **Credit Card Owner:** Relates disaster victim and credit card. Each victim is the owner of a credit card.
- w. **Region Matching:** Relates request completed and region statistics to determine the number of resolved requests in each region.