University of Puerto Rico
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Disaster Relief Site Web App

Phase 1

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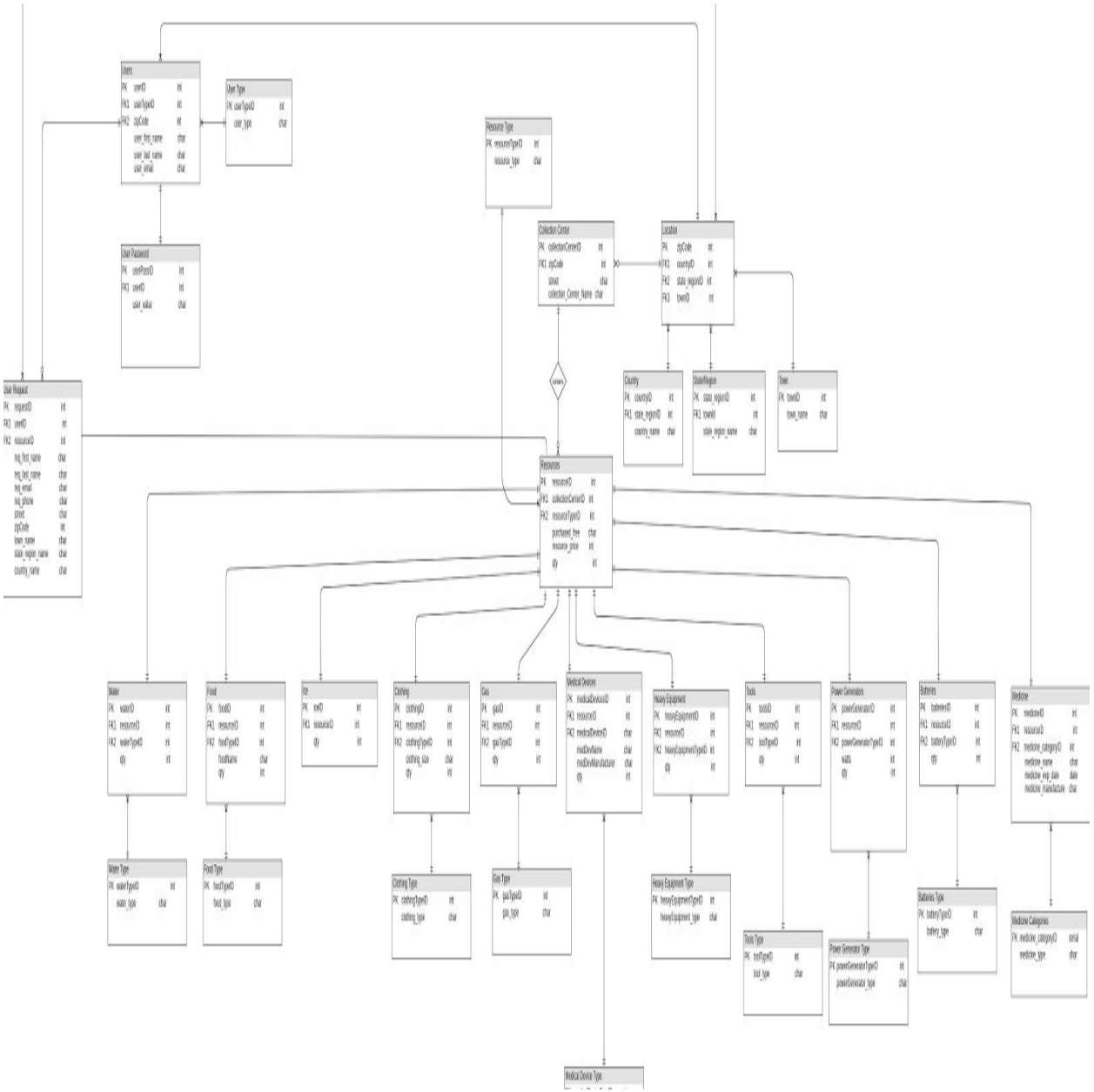
Users
User Type
Resource Type
User Password
Collection Center
Location
User Request
owns
Country
State/Region
Town
Resources
Water
Food
Ice
Clothing
Gas
Medical Devices
Heavy Equipment
Tools
Power Generators
Batteries
Medicine
Water Type
Food Type
Clothing Type
Gas Type
Heavy Equipment Type
Tools Type
Power Generator Type
Batteries Type
Medicine Categories
Medical Device Type

Problem Description

During a natural disaster, as seen in Puerto Rico during and after Maria, resources are not divided and distributed efficiently. One of the main issues is that the organizations that help by distributing donated goods everywhere in an affected area do not know what is really needed in that particular area. An example of this is that maybe a certain shelter has sufficient water, but not enough food, but what keeps getting delivered is water, which is not really needed in that particular place.

This application is intended to bring a solution to the problem and help distribute resources throughout the affected area, but more importantly to give the distributor a more clearer insight of what is really needed and where, so that people affected can receive the help they really need.

Goal

To create a web application where every town, state or shelter can add their current inventory so that when products enter the disaster site, distributors like government agencies can check what a town or shelter really needs instead of just sending small portions of all resources available. Every area affected has its own necessities and with this application government and or other privates entities donating and distributing will know what specific necessities different communities have.

ER Diagram Entities Description

User -- User Type -- User Request -- User Password

User table holds all the the information about registered users, such as address, firstname, lastname, email, roles. They have different roles such as Admin, Supplier,

User. This is given in User Type which is referenced to the User table. Since passwords should be encrypted they will be stored in another table that is referenced to the user through UserID. This will be used to verify a user in a sign in page.
A user can make a request for a certain product. Request are stored in the User Request table. This table holds information of request such where (address) the item is needed, contact information.

User Request -- Resource -- Collection Center

A user can make a request for an item. This request is stored in the User Request table, with information regarding where the item is needed, and contact information of a person. The system will check if the item is available by some supplier by using the Collection Center and Resource table references. If the item is found to be available it will tell the person the supplier who has it in stock.

Location -- Country -- State/Region -- Town

A location entity holds the address information of the collection center such as country, state and town given a zip code.

Country is an entity where all countries are listed. State/Region is an entity that (given a country) lists all the states or regions of that country. Town table holds all towns within a particular state/region. These tables are created so that when adding information about a collection center and its location the record is added in a standardized way with the given information in the database. This will help in the future by making the app more dynamic and reports can be extracted easily, without the concern of, for example, looking for a country that is written in different ways.

Collection Center -- Resources -- Resource Type

A Collection Center can have zero or more resources available at that particular center. Resources have an ID (resourceID) and a type (resourceTypeID) such as “food, water, medicine, clothing, gas, etc”. This type will let us know in what table we can find more information about the product that the center has in other tables named after the resourceTypeID.

Resources -- (Water | *Food* | *Ice* | *Clothing* | *Gas* | *Medical Device* | *Heavy Equipment* | *Tools* | *Power Generators* | *Batteries* | *Medicine)*

Every resource has a ‘resourceID’ which uniquely identifies a certain product. With the attribute ‘resourceTypeID’ we can identify in which table like, *(Water* | *Food* | *Ice* | *Clothing* | *Gas* | *Medical Device* | *Heavy Equipment* | *Tools* | *Power Generators* | *Batteries* | *Medicine),* we can search for that ‘resourceID’ so more details about that product can be retrieved. For example we want to know more information about a certain medicine with a ‘resourceID’, we know it is a medicine with the ‘resourceTypeID’ attribute. Now the app can search the medicine table in the database and look for specific information about that medicine such as medicine name, expiration date, manufacturer, and what type of medicine it is like painkillers, antibiotics, antisthainine, etc. This last part we have to reference to table Medicine Categories.

Water -- Water Type

Water table has information about product (resourceID), the type (waterTypeID) and the quantity (qty) available. Water type table is used to specify whether it is a bottle of water, gallon, liter and different sizes that water can be found in the market.

Food -- Food Type

Food table has the information such as food name (foodName), food type (foodTypeID) and quantity available. Food Type table provides a description like if it is canned food, fresh produce, baby food.

Clothing -- Clothing Type

Clothing table provides the details of a certain piece of clothing like size (clothing_size), type and quantity. Clothing Type is referenced to Clothing table and it contains the classification such as shoes, short, pants, underwear, shirt.

Gas -- Gas Type

Gas table keeps track of the different fuels available. It uses Gas Type table to classify them as gasoline, diesel.

Medical Devices -- Medical Device Type

Medical devices table shows availability of inventory of different medical devices equipments. Shows information about name of the device, manufacturer, and the condition it treats, and type of device.

Heavy Equipment -- Heavy Equipment Type

Heavy Equipments are bulldozers, engines, diggers, equipment designed for construction tasks mainly.

Tools -- Tools Type

Tools table hold information about tools like hammers, chainsaws, screw drivers identified by a type.

Power Generators -- Power Generator Type

Power Generators is a table that shows power generators available or in inventory. It show information on the equipment such as watt capacity and type meaning if its gasoline fueled generator, battery powered, diesel or propane powered.

Batteries -- Batteries Type

Batteries table shows information about batteries in the inventory. It is referenced to batteries type to classify them by type such as AA, AAA, C type, D type among others.

Medicine -- Medicine Categories

Medicine table has information of a particular medicine such as name, manufacturer, quantity available, expiration date and has a reference to Medicine Categories table which classifies them for example to the condition it treats such as antibiotics, painkillers, antihistamine among others.