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CIIC 4060/ICOM 5016 - Backend System for Disaster Site Resources Locator Phase I: Entity Relationship Diagram report

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The main goal of the Disaster site resource locator is to connect people that are in need of resources with people that can supply those resources. Here we describe the entities and relations of our entity relation diagram (ERD).

User:

Each person that registers to the web site will be represented as a user. The user entity is used to store attributes that are common between requesters, suppliers and administrators. The user entity will use the username attribute as its primary key. Therefore, each user must have a unique username. A user can be an administrator, a requester or a supplier but it cannot be both of these at the same time. A user must supply its address information since it will be used to show the location of the supplied items (if the user is a supplier) or show the location of a request (if the user is a requester).

Address:

An address entity will specify the location of a user. We are assuming that the location of the requests is the same as the user that is a requester. We are also assuming that the location to the resources is the same as the user that is a supplier. The address will contain the country name,

city name, street name and district name. All attributes must be specified when creating an Address entity.

Administrator:

The administrator entity is used to store the permission level of the administrator. Depending on the administrator level, an administrator can remove unallowed requests or announcements and ban/unban other users from posting. A user and administrator are associated by the relation Administrators. This relation is one to one, a user entity is coupled to only one administrator entity.

Requester:

The requester entity represents users that are in need of resources. A requester can create a request entity to ask for specific items. A requester can create many requests where each creation stores the time and date the request was made. The requester entity can reserve supplies that have been announced by suppliers. Each request entity has an attribute to store the requesters balance (buying power). If the balance is zero the requester can only reserve supplies that are up to donation; Otherwise, the requester can reserve any supply if it has sufficient funds. A requester can also make payments for the resources that were reserved.

Request:

A request represents a resource that is needed. The request entity has attributes that describe the quantity of the item. A requester can make many requests and each one will store the date of creation. Once a requester reserves a supply that matches the type of the request the request quantity will be updated accordingly until it reaches zero, when it will be said that the request is filled.

Payment:

A payment entity represents a transaction made by a requester entity to purchase a reserved resource. A requester can make many payments. A new payment entity has to be created for each reserved resource that the requester intends to purchase. Many payments are processed at the same time if the user buys assorted items. A payment entity is also used to represent donated items.

Supplier:

A supplier entity represents people that are selling or donating resources to those in need. Since a supplier can be a company, the company's name (if supplied) can appear in the information on the resource supplied instead of the user's name. Suppliers can announce the resources that they are willing to sell or donate. A supplier can announce many supplies, and each announcement will have its date recorded.

Supply:

A supply represents resources that are being sold or donated. The supply entity has attributes such as quantity and price that give information on the properties of the resource being sold or donated. Many supplies can be reserved by a requester.

Resource:

A resource represents any item that is being requested or supplied in the website. The resource entity has attributes that describe the item being described. When making a request of a supply the user must provide the resources name, description and type. The attribute type will help to categorize the item, since one can name and describe the same item in different ways.