Entities

1. Login: This entity has 3 attributes: a login ID as primary key, a username and a password for anyone who wants to use the web application to request resources, supply resources, or just view available resources.
2. Supplier: This is a specialized entity of login which represents people who give resources to people in need, which has as attributes a supplier ID as primary key, the first name, middle name and last name of the person, the supplier’s company name and phone, the warehouse address for the company, and the city location of where the supplier comes from. Also has a login\_ID as foreign key referencing the primary key of the Login Entity.
3. Person: This is a specialized entity of login which represents the people in need after a disaster, which has as attributes a person ID as primary key, the first name, middle name and last name of the person, the person’s email and phone,and the city location of where the person lives. Also has a login\_ID as foreign key referencing the primary key of the Login Entity.
4. Administrator: This is a specialized entity of Person, which has as attributes an administrator ID as primary key and a permission key to access the resources data. Also has a p\_ID as foreign key referencing the primary key of the Person Entity.
5. Resource: This entity represents specific items that are needed after a disaster, which has as attributes a resource ID as primary key, the resource type, the resource’s price, the resource’s quantity, the resource’s availability, the location of the resource.
6. Water: This specialized entity of Resource represents specific water resources that are in need, which has as attributes a r\_ID as foreign key referencing the primary key of Resource, a water ID as primary key, the water type, the measurement unit, and the liquid measurement.
7. Fuel: This specialized entity of Resource represents specific fuel resources that are in need, which has as attributes a r\_ID as foreign key referencing the primary key of Resource, a fuel ID as primary key, the fuel type, and the fuel octane rating.
8. Food: This specialized entity of Resource represents specific food resources that are in need, which has as attributes a r\_ID as foreign key referencing the primary key of Resource, a food ID as primary key, and the food type.
9. Order: This entity represents the list of resources that a person buys. It has 4 attributes: an order ID as primary key, the order date, the order quantity, the list of resources bought.
10. Payment: This entity represents the method a person uses to buy some resources they need. It has 4 attributes: a payment ID, the type of payment, the total payment done, and an order ID as foreign key referencing the Order entity.

Relations

1. Manages: This many-to-many relation between Administrator and Resource identifies a user who can access any resources data and modify it. This relation has as attribute the administrator ID and the resource ID as foreign keys, and the combination of both as primary key.
2. Supplies: This many-to-many relation between Supplier and Resource identifies any user who wants to sell or donate any specific item for the people in need. Any resource can be supplied by any user, and any user can supply any number of resources they want. This relation has as attribute the supply date, the supplier ID and the resource ID as foreign keys, and the combination of both as primary key.
3. Reserve: This many-to-many relation between Person and Resource identifies any user who wants to reserve any specific item they need. Any resource can be reserved by any user, and any user can reserve any number of resources they want. This relation has as attribute the reserve date, the total of resources, the person ID and the resource ID as foreign keys, and the combination of both as primary key.
4. Buys: This many-to-many relation between Order and Resource identifies the list of resources that will be bought by any person. Any resource can be bought in any order made. This relation has as attribute the total resources price, the total resources bought, the order ID and the resource ID as foreign keys, and the combination of both as primary key.
5. Offers: This many-to-many relation between Person and Payment identifies the payment offered by a person to buy some resources. Any person can offer any payment. This relation has as attribute the person ID and the payment ID as foreign keys, and the combination of both as primary key.
6. Request: This many-to-many relation between Person and Resource identifies any user who wants to request any specific item they are looking for. Any resource can be requested by any user, and any user can request any number of resources they want. This relation has as attribute the request date, the person ID and the resource ID as foreign keys, and the combination of both as primary key.