

Written Entities Description Report

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Entities:

1. User

- This is a mega entity which contains common attributes of the system administrator, client and supplier entities.

2. System Administrator

- This entity is tasked with overseeing and moderating all interactions between clients and suppliers.

3. Client

- The client is a user who either reserves or requests (purchases) a resource of their choice.

4. Supplier

- The supplier is a user that provides the resources for clients that they can either request or reserve. Every supplier has a different location and not all suppliers provide the same resources.

5. Credit Card

- The payment method involved on a transaction between a client and supplier.

6. Request

- A method for clients to purchase resources.

7. Reservation

- A method for clients to reserve a resource and receive it free of charge.

8. Resources

- Another mega entity that contains common attributes with the different types of resources. Not all resources have the same location and/or the same price.

9. Water

- A resource which can be available in either small bottles or 1-gallon bottles.

10. Medication

- A resource that refers to over-the-counter drugs; its only attribute is its name, *med_name*.

11. Baby Food

- A resource for clients with babies. Its attributes include the flavor of the food (*bb_flavor*) and its expiration date (*bb_expDate*).

12. Canned Food

- A resource that refers to food that can be preserved in airtight containers; its attributes are *cf_name* and *cf_expDate*, which are self-explanatory.

13. Dry Food

- Another type of food that can be preserved; its attributes are similar to the previous entity, *df_name* and *df_expDate*.

14. Ice

- A resource that refers to ice, its only attribute being the bag size (*ice_bagSize*) containing it.

15. Fuel

- A resource that refers to the power source used by automobiles. Its attribute *fuel_type* indicates whether it is Diesel, Regular or Premium.

16. Medical Devices

- A resource that refers to tools or equipment used for medical purposes. This entity has two attributes: *mdev_name* which refers to the name of a specific instrument, and *mdev_description* which should be a brief description of the item's intended use.

17. Heavy Equipment

- A resource that refers to heavy-duty vehicles. The attribute *heq_type* denotes the kind of vehicle, e.g., a forklift, a road roller, a crane, excavator, etc.

18. Tools

- A resource that refers to instruments, this entity only attribute is the *tool_name* which evidently refers to the type of tool that it is.

19. Clothing

- A resource that refers to clothes. This entity has a few attributes such as *cl_size*, *cl_color* and *cl_material*. The attribute *cl_color* is self-explanatory, *cl_size* refers to either X-Small, Small, Medium, Large and X-Large and *cl_material* refers to either cotton, silk, leather, fur etc.

20. Power Generator

- A resource that refers to devices that convert mechanical energy to electrical power. Its attributes include *pg_wattage*, which denotes generator's wattage (power output), and *pg_fuelType*, which states the type of fuel it consumes (e.g. Gasoline, Diesel, Natural gas, etc.).

21. Batteries

- A resource that refers to a portable power source, its only attribute *batt_type* refers to the classification of the battery (e.g. AA or AAA).

Relationships:

1. Administrate

- This is a one-to-many relationship between a system administrator and the users (mostly clients and suppliers).

2. Has

- A one-to-many relationship between the client and credit card. A single client may have many credit cards as payment methods, but only one credit card can be associated with a given client.

3. Places

- A one-to-many relationship between the client and the request entity. One client may place many requests to purchase resources, but a request may only be linked to one client.

4. Makes

- A one-to-many relationship between the client and the reservation entity. One client may make many reservations to receive resources for free, but a reservation may only be associated with one client.

5. Transaction

- A one-to-many relationship between the credit card entity and the request entity. One credit card can make a transaction to many requests, but a request can only be paid by a single credit card. This relationship has a transaction number as an attribute to keep record of purchases.

6. Purchases

- A many-to-many relationship between the request and the resource entity.
Multiple requests, done by clients, can purchase many resources for a price. A *price* attribute was given because the selling price might be different from the original price, possibly due to special discounts or offers. Another attribute *quantity* was given to denote how many items of the resource were purchased.

7. Confirmation

- A many-to-many relationship between the reservation and the resource entity.
Multiple reservations, done by clients, can be confirmed to receive a resource for free. This relationship has a *status* attribute where it tells clients if their reservation has been approved. Another attribute *quantity* indicates how many items of the resource were reserved.

8. Provides

- A many-to-many relationship between the supplier entity and the resource entity.
Multiple suppliers can provide multiple resources to clients.