BlendEats

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1 ERD to Relations

1. The Data Schema contains 11 entities which are related to each other using 4 relations and 3 ISA hierarchies.
2. The entity "member" has 6 attributes with uid (member id) being the Primary Key. It has two more subclasses, namely "Admin" and "Client".
3. The entity "Account" has 3 attributes, with loginid being the primary key.
4. The member entity is associated with the Account entity using the relation "registers_with", which is a one to one relation. A member can only have one account, using the unique uid (member id) and the Account can only have one member.
5. The entity "Food" has 4 entities with fid (food id) being the Primary Key. It has 6 subclasses, joined using 2 different ISA hierarchies.
    a Two subclasses are made on the basis of cooking method and are named as "Packed Food" and "Cooked Food".
    b Four subclasses are based on the type of food and are named as "Vegan", "Vegetarian", "Non-vegetarian with halal" and "Non-vegetarian with halal".
6. The entity "member" is associated with the entity "Food" using three distinct relations namely, "Offers", "Requests" and "Manages".
    a The member can offer food and it serves as a one to many relation. One member id can be related to many food id, but one food id can only be related to one member id.
    b The member can request food items and it serves as a many to many relation. One member id can request various food items with distinct food id and one food id could be requested by various distinct members and hence member id.
    c The member can also manage a food item, besides offering it. It serves as a one to many relationship, due to the fact that serves as a spin off of the "offer" relation. One member can manage various food items (food id), but a unique food id can only be managed by one member (member id).

2 ISA Hierarchies to Relations

1. member, Admin and Client
    - Type 1:member, Admin and Client are considered as separate relation per entity set. So, every member is recorded in member. So, if we delete an member tuple, then we must delete Client and Admin tuple referenced along with the member tuple. Queries involving member entity becomes easier and those involving Admin require a join to get some attributes.
    - Type 2: We consider relation only entity set i.e member with instances i.e. Admin and Client.Each member must be in one of the two subclasses i.e Either Admin or Client.
    - Type 3: We consider member as one big relation and admin and client will be under relation member.

2. Food, Packaged Food and Cooked Food

    - Type 1:Food, Packaged Food and Cooked Food are considered as separate relation per entity set. So, every Food is recorded in Food. So, if we delete a Food tuple, then we must delete Packaged Food and Cooked Food tuple referenced along with the Food tuple. Queries involving Food entity becomes easier and those involving Packaged Food require a join to get some attributes.
    - Type 2: We consider relation only entity set i.e Food with instances i.e. Packaged Food and Cooked Food.Each user must be in one of the two subclasses i.e Either Packaged Food or Cooked Food.
    - Type 3: We consider Food as one big relation and Packaged Food and Cooked Food will be under relation Food.

3. Food,Vegan, Non-vegetarian Halal and Non-vegetarian not Halal

    - Type 1:Food,Vegan, Non-vegetarian Halal and Non-vegetarian not Halal are considered as separate relation per entity set. So, every Food is recorded in Food. So, if we delete a Food tuple, then we must delete Vegan, Non-vegetarian Halal, Non-vegetarian not Halal tuple referenced along with the Food tuple. Queries involving Food entity becomes easier and those involving Vegan require a join to get some attributes.
    - Type 2: We consider relation only entity set i.e Food with instances i.e. Vegan, Non-vegetarian Halal, Non-vegetarian not Halal.Each user must be in one of the four subclasses i.e Vegan, Non-vegetarian Halal, Non-vegetarian not Halal.
    - Type 3: We consider Food as one big relation and Food,Vegan, Non-vegetarian Halal and Non-vegetarian not Halal will be under relation Food.