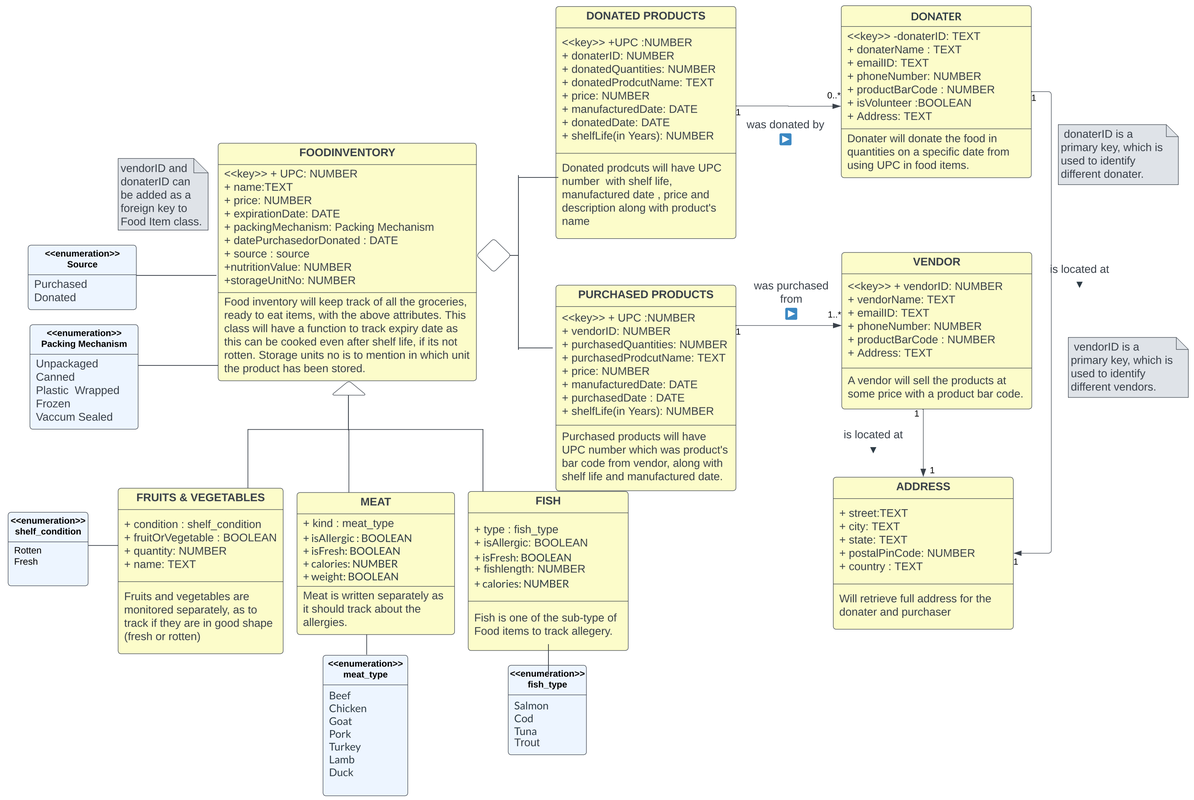
CLASS DIAGRAM



Assumptions and Notes:

Food inventory keeps track of all the products , their expiry date, source of the products, expiry date. This class will have a function that calculates the expiry date and will also allow us to track prodcuts that are stored in storange unit. UPC will be the primary key.

Donated products and Purchased products will have aggregate relationship with the food inventory because they both can exist independently without the food inventory class.

Also I assumed that food inventory will comprise products only from two sources- Donated or purchased, eventually making the association a bit stronger.

Few items like meat, fish , fruits & vegetables are tracked separately to track the allergies and condition(spoilt, rotten, green, fresh) respectively.

Assumed that products will be purchased from atleast one vendor (1..*) as donation is a volunteering action and it makes sense to have 0..* mutiplicity of that relation.

Although its not required that donater/vendor has to provide all products. So that relationship will have multiplicity as (0..*)

Meat, fish , fruits& vegetables have dependency relationship with the food inventory as they have similar attributes to food inventory class, but also have unique properties (allergic, condition-rotten or fresh) of their own unlike other products

VendorID and donaterID are foreign keys in donated products and purchased product tables. They are primary keys to uniquely identify which organization or person has donated or where (which shop) the item (identified using UPC) was purchased.

I have assumed that primary keys of the food inventory, donated products, purchased products are public (+) even though they should be unchangable, unique to that class and should be invisible to the user. Here it does not impose any security threat,as the keys are product barcodes.

For donater , primary key (donaterID) is private as it can also sometimes be a individual who is donating and not necessarily always an organization that donates. For data privacy. this primary key can be private as of now in conceptual design

It is also assumed that donar details are retrived only when isVolunteer attribute is set to be false, as it will not be organization who is donating.

For tracking the location from where product was purchased or donated, I have given (1..1) multiplicity to Address entity as, a donater or vendor is supposed to have atleast one address mandatorily.

Enumerations are appropriately added and linked to the classes for handling columns that can take any values from the pre-defined list.