

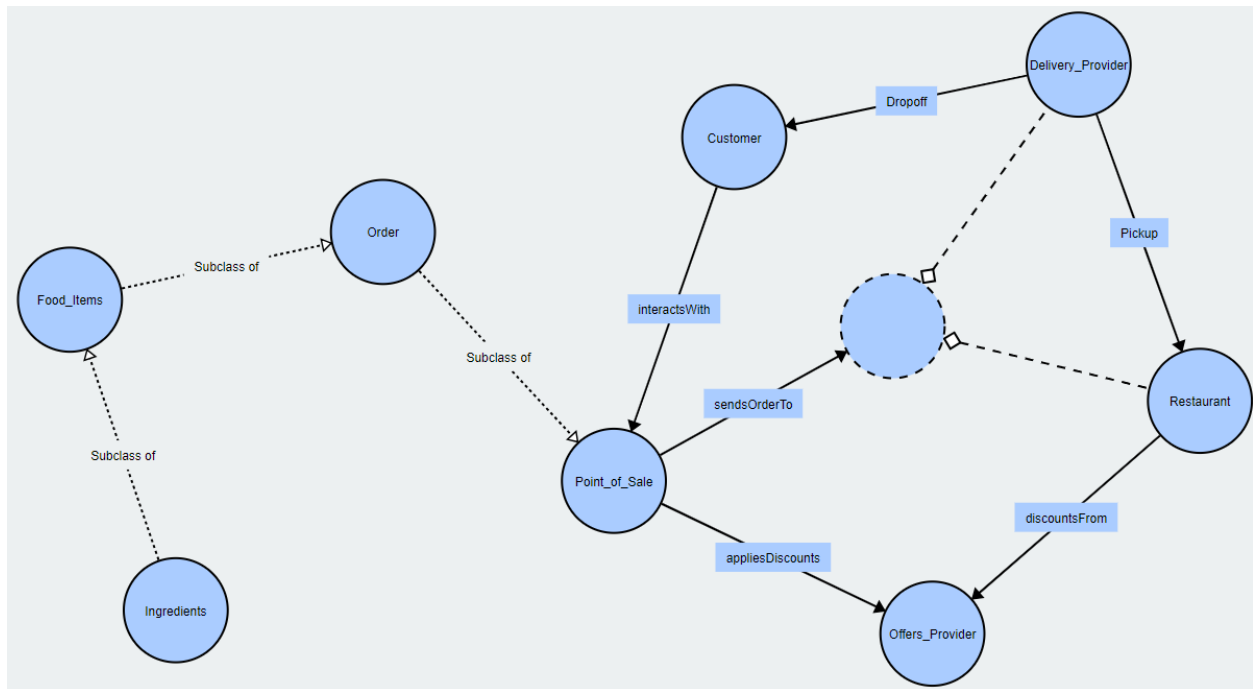
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CS:598 Foundations of Data Curation

## Assignment 2

Step 1:



*Step 1 Ontology Visualization*

The ontology follows the 5 basic top levels classes of any delivery provider app, and the constituents of the orders made through said application. The explanation of the hierarchy is quite clear, all top-level elements are unique classes with no hierarchical relationship. In these kinds of food delivery apps, the top-level classes (Delivery\_Provider, Customer, Restaurant, Offers\_Provider, and the Point\_of\_Sale) all have to be related, but in terms of their data are entirely different. These relationships become the paths of mapping between them. The Point of Sale is of not as it has to be a parent class to the order items in general. The Point of Sale is the food delivery app in the scenario provided, therefore it must handle the generic orders that can be made. A given order will have food items, which is obvious, and these food items will have ingredients which is again reasonable. Ingredients are a subclass to support the Compliance goal of Data Curation. Ingredients need to be marked, as regulated by the FDA. Any undercooked food that could increase the risk of illness, any common allergy inducing foods, these must be marked and managed, and adjusted for a given food item. Lastly, the Offers\_Provider is there to abstract any deals, offers, or discounts that can be applied to the restaurant's products for use in the point of sale.

The relationships are intuitive as well as generally describing the flow of data within the ontology. Typically, this would be portrayed in industry as a flow-chart, but an ontology is of a higher

abstraction. Therefore, pure relationships are displayed. It is possible to explain the relationship design with the following: a customer interacts with the point of sale that sends the order to the restaurant and the delivery provider, and the delivery provider pickups the order from the restaurant and drops it off at the customer. Finally in the case of the offers, deals, and discounts the restaurant works with the offers provider to coordinate that promotion, which the point of sale applies to the order.

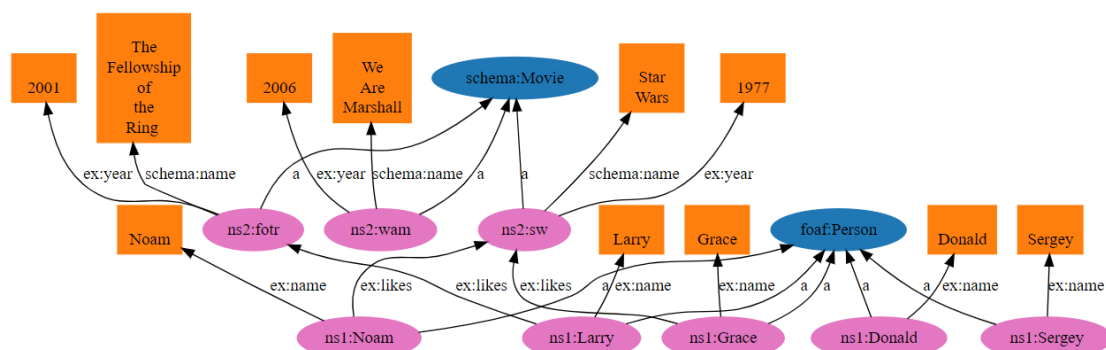
Step 2:

A: The ingredients are an example of a class Cx that inherits from Cy that is not a direct parent of. Ingredients are inherited from the orders class as not a direct parent. In this case or scenario, the ingredient can inherit the fact a property such as price of the item can have its domain in the ingredients and its range in the order. If a price is instantiated within an ingredient an order must be created thus implying the inheritance.

B: Subclass of is a relationship type that represents a specific type of super class. For example, in this ontology a food item can be construed as a whole order. But an order can have multiple food items. This is how the food item specifies the order. A specific relationship is the relationship between separate classes. In this ontology the Point of Sale has the relationship of “sends” to the restaurant and delivery provider classes. This kind of relationship is fundamentally different as one does not specify a version of the other, these are fundamentally different classes. The relationship that links two ideas that are unique from each other together is different than the sub class relationship.

C: The offers providers have a relationship to the point-of-sale class called “applies discount”. In practice this applies to a food item. Therefore, a discount is applied to a food item and a food item is a subclass of the order. It is same way that if a person has a relationship to a dog as ownership, and dogs are a subclass of mammals then the person owns a mammal. In this ontology an offers provider applies a discount to a food item, and a food item is a subclass of orders thus it specifies an order. Therefore, the offers providers applies a discount to an order.

Step 4:



*RDF Visualization*