Introduction to Lab Modeling Exercise

Protégé Short Course
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Modeling Practice: Goals

- Practice conceptualizing a domain
  - Think about entities to be included in an ontology
  - Understand modeling decisions and choices
- Become familiar with OWL language
  - Use appropriate axioms for intended purposes
  - Make queries to check work
- Practice with Protégé tool

Modeling Practice: Methods

- Work on your own project
  - Short course instructors are available for consultations
- Work on a shared modeling problem
  - Designed to bring up specific issues
  - To be discussed on last day

Scenario: Hosting Dinner

- Dinner with guests Mary, Ashok, & Amara
  - Mary likes to have some meat
  - Ashok only eats vegetarian food
- For Mary
  - At least one meat main dish
- For Ashok
  - A vegetarian soup or salad
  - At least one vegetarian main dish
  - A vegetarian dessert

Possible Dishes

- Spinach Soup
- Vegetarian Potato Soup with Smothered Onion
- Garlic-Scented Tomato Salad
- Shredded Carrot Salad with Arugula
- Braised Artichokes and Peas
- Grilled T-Bone Steak, Florentine Style
- Strawberry Gelato
- Fresh Fruit Whips

Ingredients of dishes are available on handout and in dinner-start.owl ontology

Ingredients of Dishes

Garlic-Scented Tomato Salad

For 4 or 6 servings

- 4 to 5 garlic cloves
- Salt
- Pine nuts
- Choice quality red wine vinegar
- 2 pounds fresh, ripe, firm, round or plum tomatoes
- 1 dozen fresh basil leaves
- Extra virgin olive oil

Adapted from *Essentials of Classic Italian Cooking* by Marcella Hazan (1992)

Competency Questions

- Which dishes have meat as an ingredient?
- Which dishes are “meat dishes” and “vegetarian dishes”?
- What are some combinations of dishes
  - that are all vegetarian?
  - that have the combination of meat and vegetarian dishes for your party?

Bonus

- Which recipe gives directions for a particular dish?
- Based on the recipes, what ingredients do you have to get for your dinner?

Get Started…

- Conceptualize your domain.
  - Draw diagrams on paper (or your on favorite diagramming tool) to illustrate the entities and relationships in the domain
- Formalize your conceptualization
  - Model “Dinner,” “Person,” “FoodDish,” and “FoodStuff ”
  - Organize the food stuff and food dishes into class hierarchies
    - What are appropriate superclasses?
  - Create some relationships between your classes

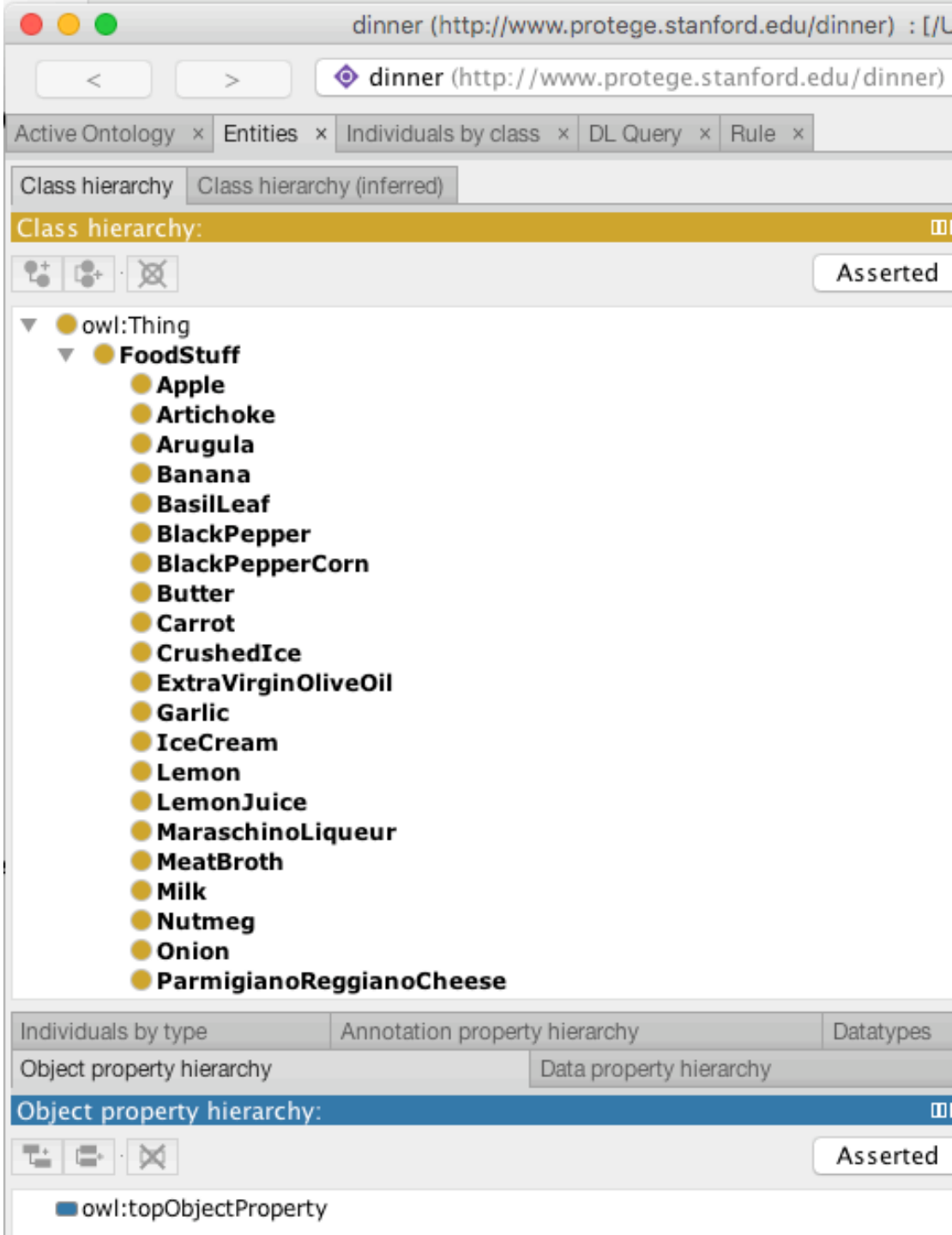
Continuing with Definitions…

- Define “Meat Dish” and “Vegetarian Dish” in Protégé
  - Add ingredients to some dishes so that you can classify them
- Demonstrate some combinations of dishes that would satisfy your dinner requirements

Bonus

- Define “Recipe” and think about how to relate a recipe and a food dish and how to query for ingredients you need to get for your dinner

Start with the ontology: dinner-start.owl



Please fill out the surveys for today!