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Assignment 2: Brief Description of Ontology & Domain Boundaries

My ontology is about family recipes for holidays and family reunions. Each recipe was given to me by another family member or incorporated into the annual family menu by myself. I chose to limit my domain to only the foods that my immediate family reliably makes every year during each holiday or reunion, as the number of dishes and ingredients for those was already extremely high in number and it would not be reasonable to include every possible dish for all living family members within the constraints of this assignment. I also excluded holiday snacks, as those were too numerous and varied too widely by year. I split the main food class into five primary subclasses: ingredients; main dishes; sides; desserts; and holiday meals. Each main dish, side, and dessert must have at least one ingredient, and each holiday meal must have at least one instance each of a main dish, a side, and a dessert. The two Value Partitions that I needed to include are fat content and spiciness, both of which I used to create the inferred categories of spicy foods and high fat foods in addition to the categories of VeganFood and VegetarianFood (which were both created using the “equivalent to” function to exclude particular ingredients). I chose to make vegan food, vegetarian food, spicy foods, and high fat foods as specific categories because they are the largest factors that may lead some people in my family to exclude specific dishes from their own diet.

The object properties hasIngredient and isIngredientOf (inverses of each other) indicate which ingredients are included in each main dish/side/dessert. The property hasIngredient is transitive because if a main dish has an ingredient and a holiday meal has that main dish, the holiday meal also has that ingredient. The properties hasSpiciness and hasFatContent indicate

whether an ingredient is spicy or high in fat and are both functional because each ingredient cannot have more than one instance of spiciness or fat content at once (e.g. carrots cannot be both low fat and high fat at the same time). Finally, the properties of hasDessert, hasMainDish, hasSide, and their inverses (isDessertOf, isMainDishOf, and isSideOf) indicate which main dishes/sides/desserts are included in which holiday meals. These properties are functional and inverse functional because any one individual instance of a dessert may only be used in a single holiday meal (i.e., the same apple pie cannot be eaten for both New Year's and Easter).