**Programming Assignment 3: Building an OWL Ontology**

Q1 (see page 12 of the instruction)

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| Do any of your classes come out as inconsistent? (They will be shown in red in the Class hierarchy tab; you may need to expand to see the red.) If yes, give an example. | The subclass MeatyVegetableTopping under classes MeatTopping and VegetableTopping is inconsistent. |
| Explain why your example is inconsistent | It is inconsistent because VegetableTopping and MeatyTopping share the same subclass and they are disjoint. |
| Describe a way to resolve the inconsistency | To resolve the inconsistency, we have to remove MeatyVegetableTopping. Instead we can use the property hasTopping and add both MeatTopping and VegetableTopping. |

Q2 (see page 25 of the instruction)

Add two more Pizzas, two more PizzaBases, two more PizzaToppings, and add at least four more properties. (It would be fun to use ingredients from your home countries.) Explain in English what classes and properties are added.

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| Classes with  explanation | SicilianPizza – It is a pizza originating from Italy.  CheesyPizza – It is any Pizza with a cheese topping  DeepDishBase – It is the pizza base commonly found in Chicago style pizza.  PanCrustBase – This pizza base is thin and crusty.  BellPepperTopping – This is a vegetable topping which has some spiciness.  ChickenTopping – This a meat topping. |
| Properties with  explanation | hasCountry – This property indicates the originating country of a pizza.  hasSpiciness – This property indicates whether a pizza is spicy or not and the level of spiciness.  hasBase – This property indicates what kind of crust a pizza has.  hasTopping – This property indicates what toppings a pizza has. |

Execute at least two (non-trivial) DL queries of your own choice, show the screenshots of your results.

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| Query 1 | hasCountry value Italy |
| Explanation of query 1 | The query returns MargheritaPizza and SicilianPizza because these two pizzas are from Italy. |
| Screenshot for query 1 | A screenshot of a cell phone  Description automatically generated |

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| Query 2 | CheesyPizza |
| Explanation of query 2 | This query returns any pizza that has cheese. |
| Screenshot for query 2 | A screenshot of a cell phone  Description automatically generated |