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Professor Ma

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Ontology Report

1. “State the topic of the domain you select, how many classes, properties and instances does your ontology contain.”
   1. The topic I chose for my ontology’s domain is the United States government. My ontology has 27 classes, 27 object properties, 26 datatype properties, and 33 instances.
2. “State how you selected the key concepts and relationships within the chosen domain, i.e., the way you take to enumerate the terms (nouns and verbs) in ontology engineering.”
   1. I decided to narrow the scope of the ontology to being more focused with how the US government is classified as a system of government rather than its internal workings and structure; it still has concepts and relationships depicting the internal structure of the government but only to a depth necessary to define and distinguish the systems of government from one another. I selected the key concepts and relationships I wanted to cover in my ontology by first researching my topic more and generating ideas of classes and instances that I wanted in my ontology, and when I began to notice the concepts which appeared most frequently, I made these more central to my ontology. After having initial classes and instances as a part of my ontology, from there, it was an iterative process of going to each class or instance and asking myself how they related to other concepts in the ontology and then specifying the appropriate properties which connected the current class or instance under focus to the other concepts in the ontology under consideration; if I needed to add a class or instance I missed in my initial brainstorming phase, I did so.
3. “Describe any syntactic errors and/or logic inconsistencies you find during your ontology engineering process and how you address them, or any methods you take to ensure the correct syntax and logic consistency.”
   1. One issue that I had was that as my ontology grew in the number of terms in it, I realized that it would be better to reorganize some of the foundational central concepts of the ontology to more accurately depict the nature of the system being described. Changing the organization of these concepts had a cascading effect on the rest of the ontology which need to be accounted for in order to keep the ontology logically consistent because of how central they were in the model; this was at times difficult to keep straight where all the affected areas of the ontology were and how they would be affected. From this, I realized how important it was to have the initial foundational modelling correct, especially for when your ontology increases in depth and complexity. Another more minor issue that I ran into since I initially began building the ontology by writing the turtle code myself and not using protégé (I later swapped to protégé after having learned the tool in class), is I forgot minor things like a period at the end of a triple or mistyping a name of subject, predicate, or object; these were ultimately easy to fix.