Lab 7 – Building ontologies

Today we are going to go through the (simplified) process of building a small ontology on a specific topic, by following the usual steps as described in the course. The ontology in question is meant to support the representation of different types of cameras. The goal, more precisely, is to create an ontology to be used by an application for collectors of vintage cameras to record information about cameras, classify cameras and interrogate their own or other collections.

Figure 1: Cameras.

Note that for this lab, there is no single correct answer so any solution given is one of many possible ways of modelling things with an ontology.

T1: Quickly read online about vintage cameras (wikipedia, google search, etc.) to come up with a list of general concepts and notions that relate to those. Specifically, propose:

1. a list characteristics specific to cameras

2. a list of elements that describe photos produced by different types of cameras

3. a list of cameras types

4. a list of elements that enable to characterize a camera's value on the collectors market

5. which elements above you think will become ontology classes or properties

T2: Thinking about the scenario of supporting collectors of vintage cameras, make a list of at least 3 competency questions you expect that your ontology will be able to help answer once populated with individuals.

T3: Search online for other camera ontologies. Look at their content and see if there are aspects you could reuse.

T4: Considering your answers to the previous questions, start drawing the diagram of the structure of your ontology. It should include the kind of classes and properties identified in T1 (e.g. a hierarchy

of types of cameras and relations to their components), the elements enabling the representation of the information necessary to answer the questions in T2, and the reuseable aspects you found in online ontologies in T3.

To do this, you can use pen and paper (or their digital equivalent), a diagram tool, or a dedicated tool such as OWBO (`https://mdaquin.github.io/owbo`)

T5: Transfer you 'skeleton' ontology to Protégé (either by manually recreating its elements or, if you used OWBO, by saving it and importing it to Protégé).

T6: Try to add logical definitions to the classes corresponding to the types of cameras so that an individual could be inferred by the reasoner to belong to (be an instance of) the relevant class.

T8: Add some examples of individual cameras (real or made up) to check if your logical definitions indeed lead to the expected inferences.