Ontologies - Practical Session 1
First steps in building an ontology

During the three practical sessions of the Ontology course, we will go through the process of building a complete ontology. Since ontologies have to be shared and consensual, and a big part of the process is about discussing and pondering possible representations of concepts, you will do this in groups of 3.

T1: Organise yourselves in groups of 3, preferably composed of people with different backgrounds. You will have to work with the same people over the three practical sessions.

Note that you will need to submit the final ontology as well as its documentation and a short report on the different steps you went through to build it after the third practical session. Make sure to **keep notes** of everything you do today and during the other sessions.

1 Exploring the domain

You will build an ontology of video games, which might be used for example by researchers in the history of video games and/or by people trying to analyse trends in the video game industry. Start by reading a bit about video games, for example from wikipedia. Discuss examples of video games, making sure to pick diverse examples, from different times, different origins, in different genres. Try in particular to find example that are unusual, or different from what first comes to mind.

T2: Write down **your** first definition of video games. Does it fit all of the examples you discussed ? Can you find other examples that don't fit.

T3: Make a list of the concepts you think will be required to describe and, more importantly, define the concept of video game. Also include related concepts, i.e., concepts that might not appear directly in the definition, but that will play a role in the ontology.

2 Competency question

As mentioned above, we consider at least two scenarios for your video game ontology to be used :

1. By researchers interested in the history of video games, and
2. By developers of video games to understand trends and innovation in the industry.

T4: Considering those two scenarios, write of at least 10 competency questions that could be answered by querying your ontology once it is built and populated with instances of video games and related concepts.

T5: Using those competency questions, extend the list of concepts you came up with in **T3** and add a list of relations that might be needed too.

3 Skeleton ontology and Protégé

Based on the results of the previous steps, here we want to start building the core of the ontology, and draw a diagram of the main concepts and their relations. Note that it is possible that in doing so, you will need or want to add more concepts, more relations, rename them or change the way relations connect to concepts. Note that OWBO and Protégé use the word class for concept, and the word property for relation.

T6: Using the OWBO [1] tool or pen and paper, draw a diagram of the skeleton ontology, i.e. of the core concepts and their relations.

We will now look at how the skeleton ontology can start being refined, made more formal, completed and validated using the Protégé Ontology Editor [2].

T7: Start Protégé and, if you have used OWBO, load your saved skeleton ontology into it, and if you have not, recreate it by adding classes and properties and setting the domains and ranges of properties.

T8: Picking one of the examples you identified at the beginning, create an instance of video game with as much information as is possible to include according to your initial ontology.

T9: Can you identify places where the definitions will need to be more general, to make reference to concepts or relations that are not yet there, etc. ?

1. `https://mdaquin.github.io/owbo`
2. `https://protege.stanford.edu/`