# Domain Modeling

## Preface

This exercise is an introduction to domain modeling and ontology building, putting into practice some basic ontology principles using an easy-to-learn graph visualization tool and Google Docs. It is intended to promote thinking about the “differentia” principle, and to start considering all of the relations that exist between anatomical terms.

## Part I

1. A brief introduction to the Cmap software.
2. Graph visualization: model a nervous system using the provided list of 24 classes (see next page).
   1. Use any these properties to link the classes:
      1. is\_a
      2. part\_of
      3. develops\_from
      4. connected\_to
   2. Which are transitive and which are not?
3. Discussion.

## Part II

1. In a Google spreadsheet, create 10-15 classes from your own domain of expertise.  
   Go to: <http://bit.ly/MRaf4v> (a tab has been created for each participant pair).
2. For each class, provide the name, definition, and the differentia that distinguish it from the other subtypes of the same genus. Are there any additional properties that you would want to use?
3. Create a Cmap of your classes and properties.

## Questions

To be submitted with your Cmaps:

1. Which were the most difficult classes to define, and why?
2. Which properties were the most useful for differentiating classes?
3. Did you add any new property types, and why?
4. At which point do you feel that the use of Cmaps and GDocs would be limiting (i.e. how many classes)?

## Presentation

Each pair will will make a short presentation of their Cmaps.

## Classes

anatomical structure

anatomical system

brain

cell

central nervous system

cranial nerve

ear

eye

eye primordium

nervous system

neural tube

neuron

olfactory organ

olfactory placode

olfactory system

optic nerve

organ

otic placode

peripheral nervous system

retinal ganglion cell

sensory system

tissue

vestibuloauditory system

visual system