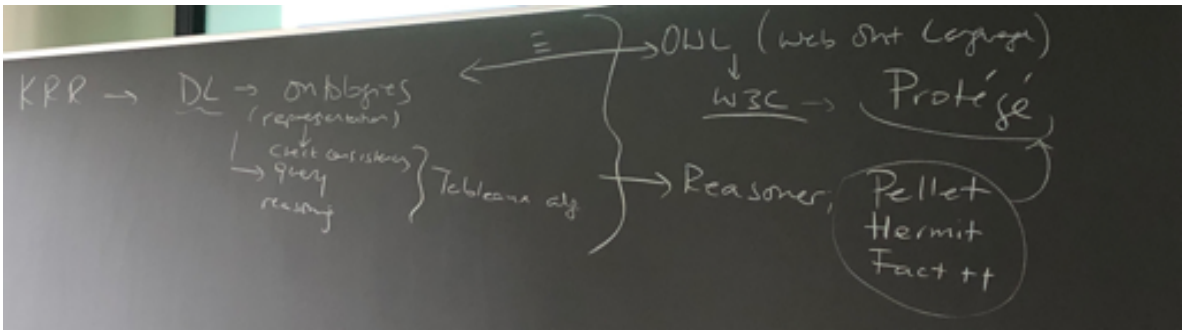
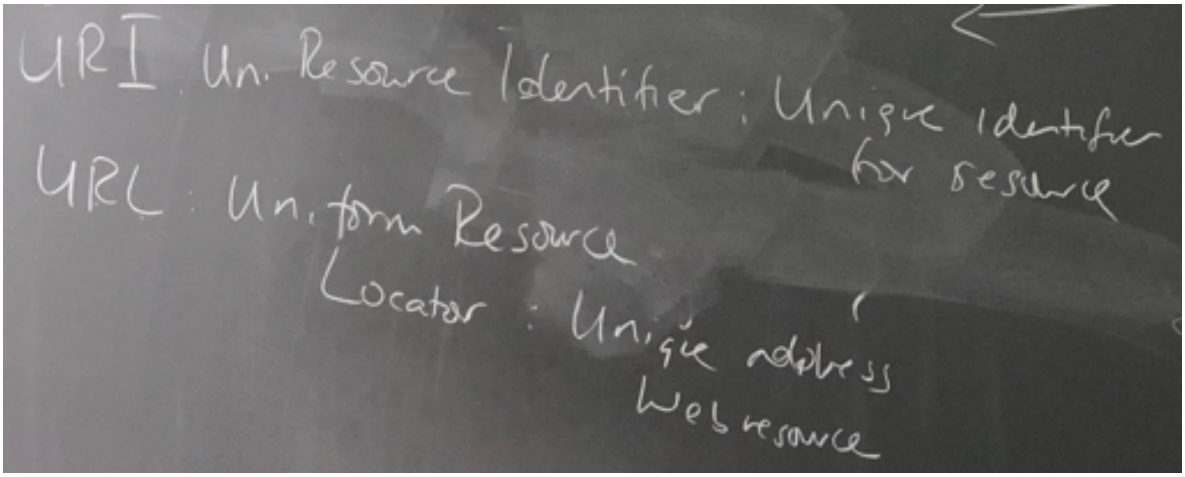
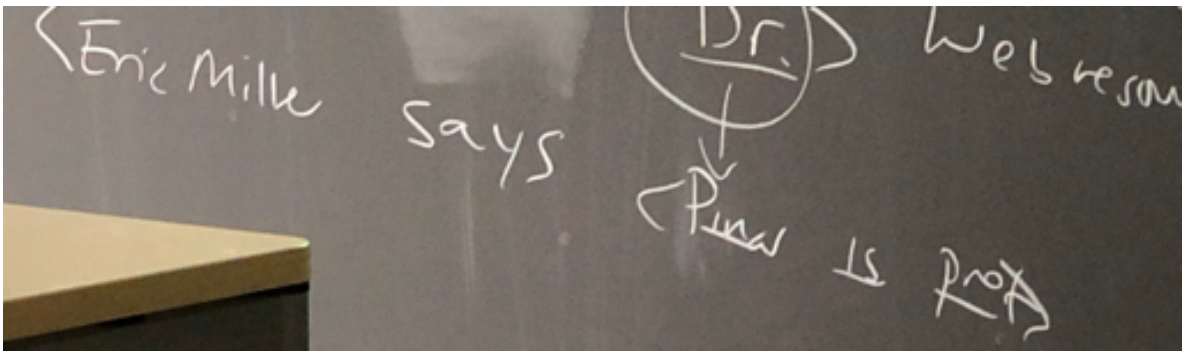
L4 Web Ontology Language (OWL)



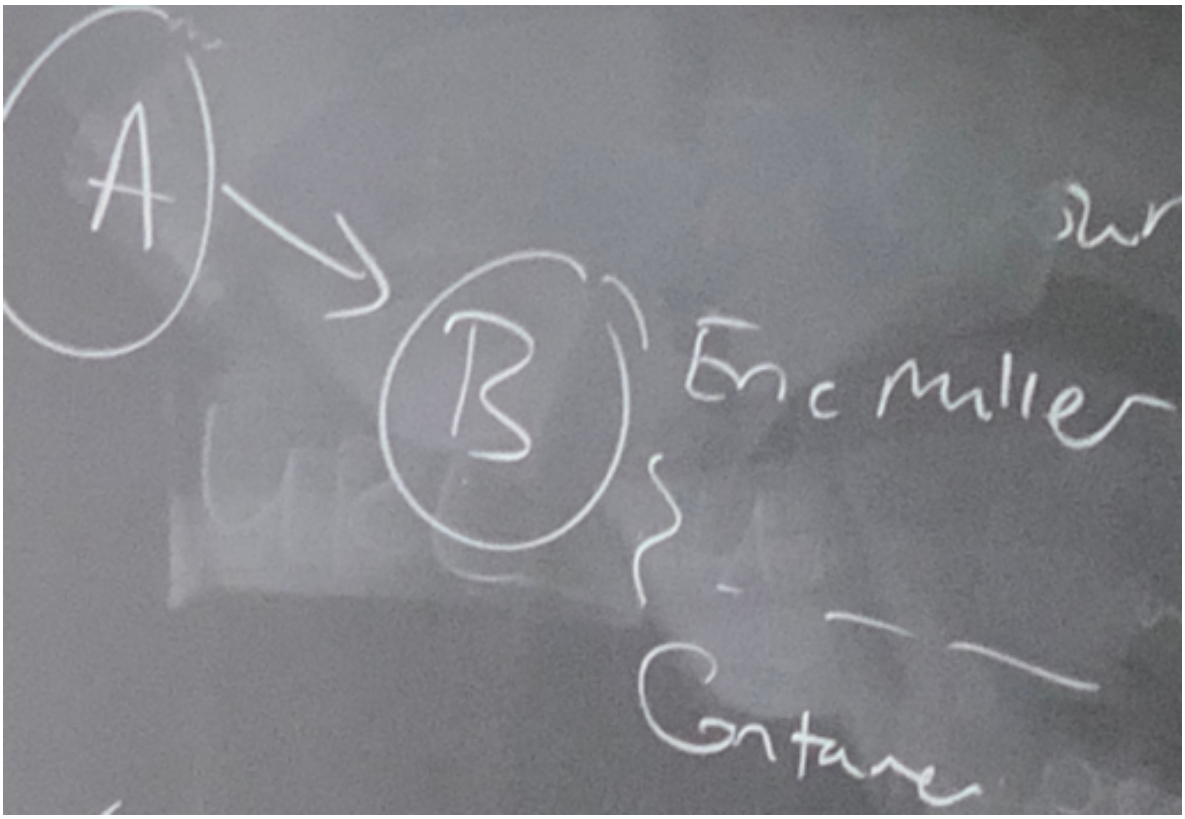
RDF



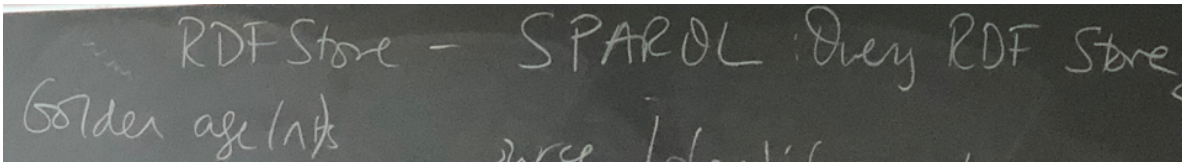
Triple (can also contain other triples)



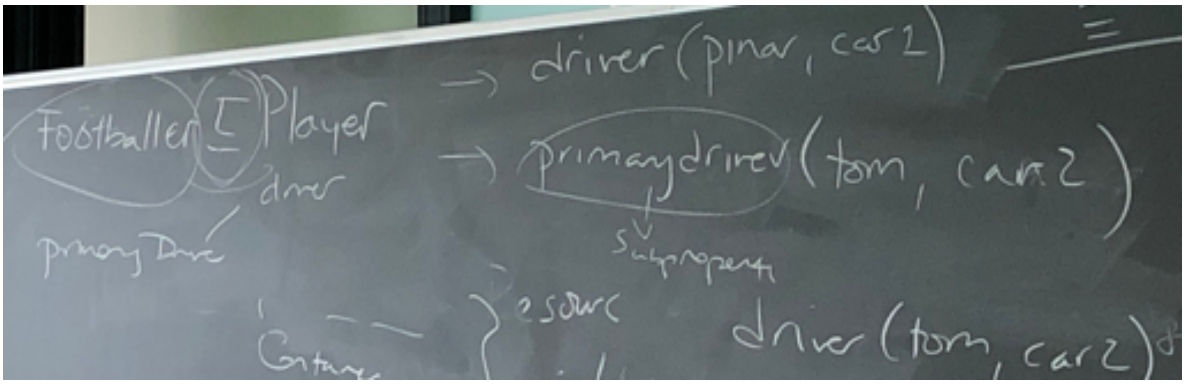
Multiple nodes in containers/collections



RDF Stores and querying

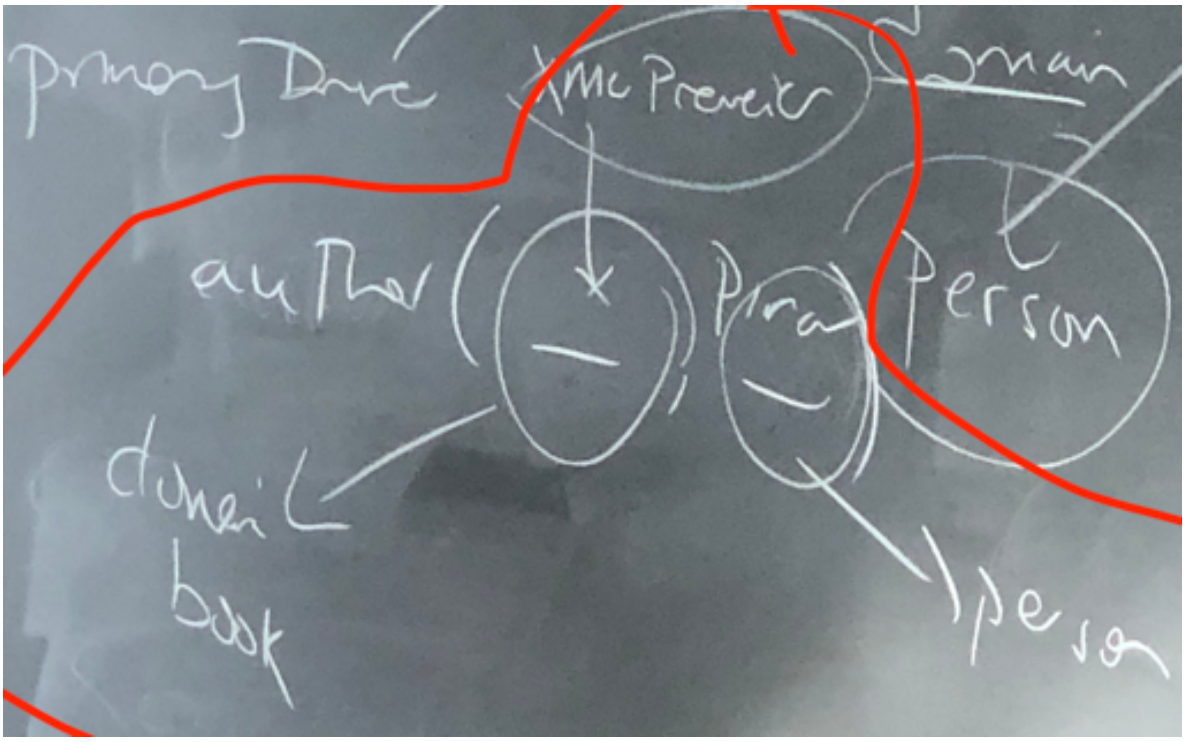


RDF Schema

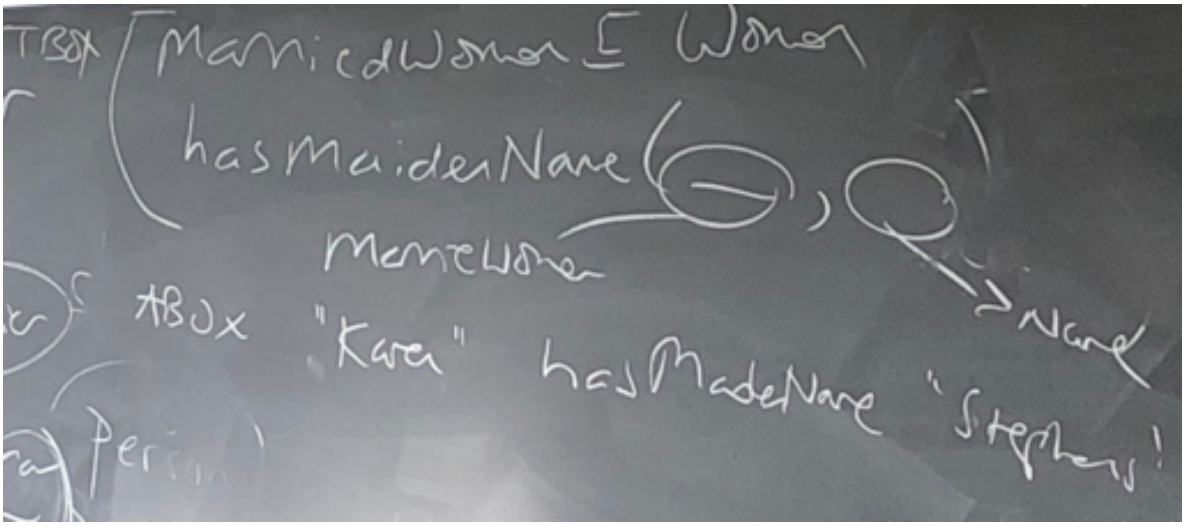


Domain and range do not have to be defined; they are 0 then
You can have multiple domains and ranges for the same object/subject

- Domain is meant for objects
- Range is meant for subjects
- You can not make a specific domain refer to a specific range as the definition must have a global scope (vs Java where it's local scope)

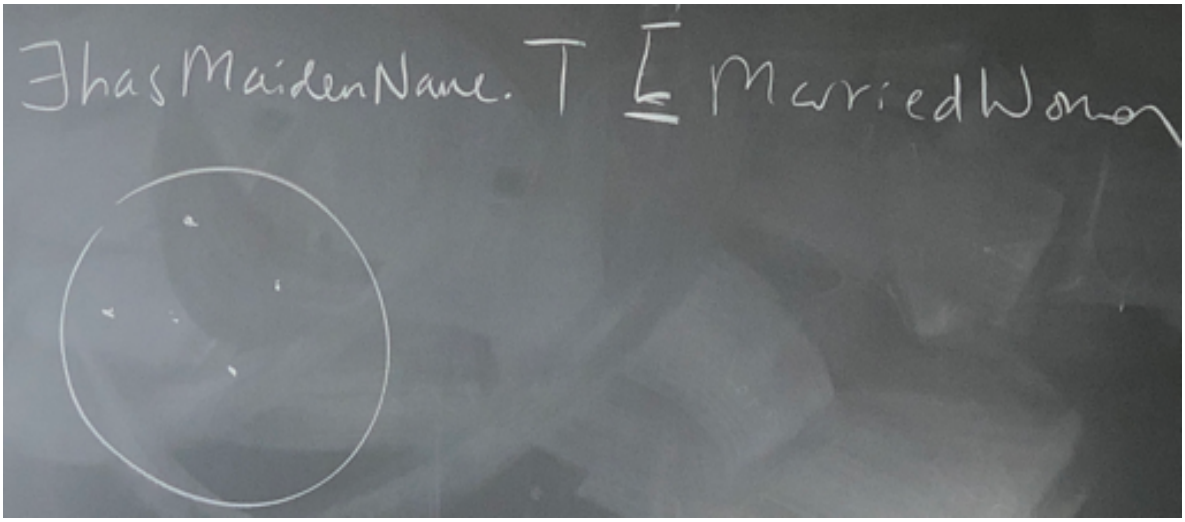


RDFS example

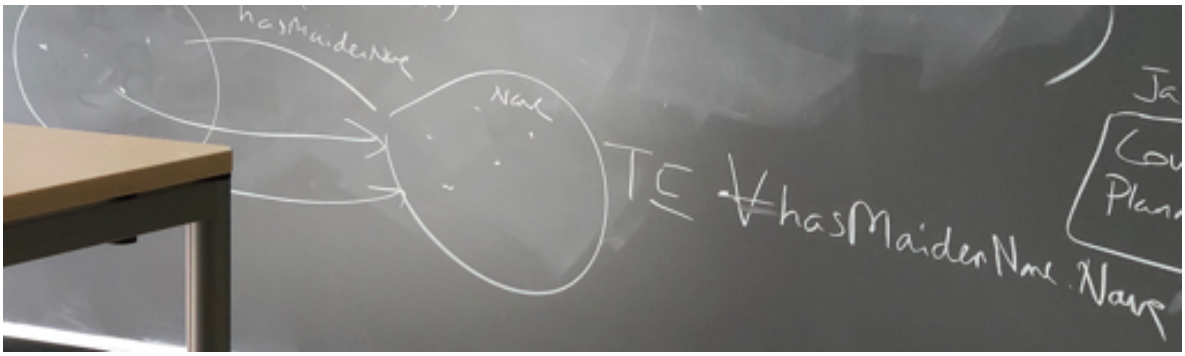


Now the same thing in Description Logic (DL):

- We want to say “All the things that hasMaidenName are MarriedWoman”
  - Domain



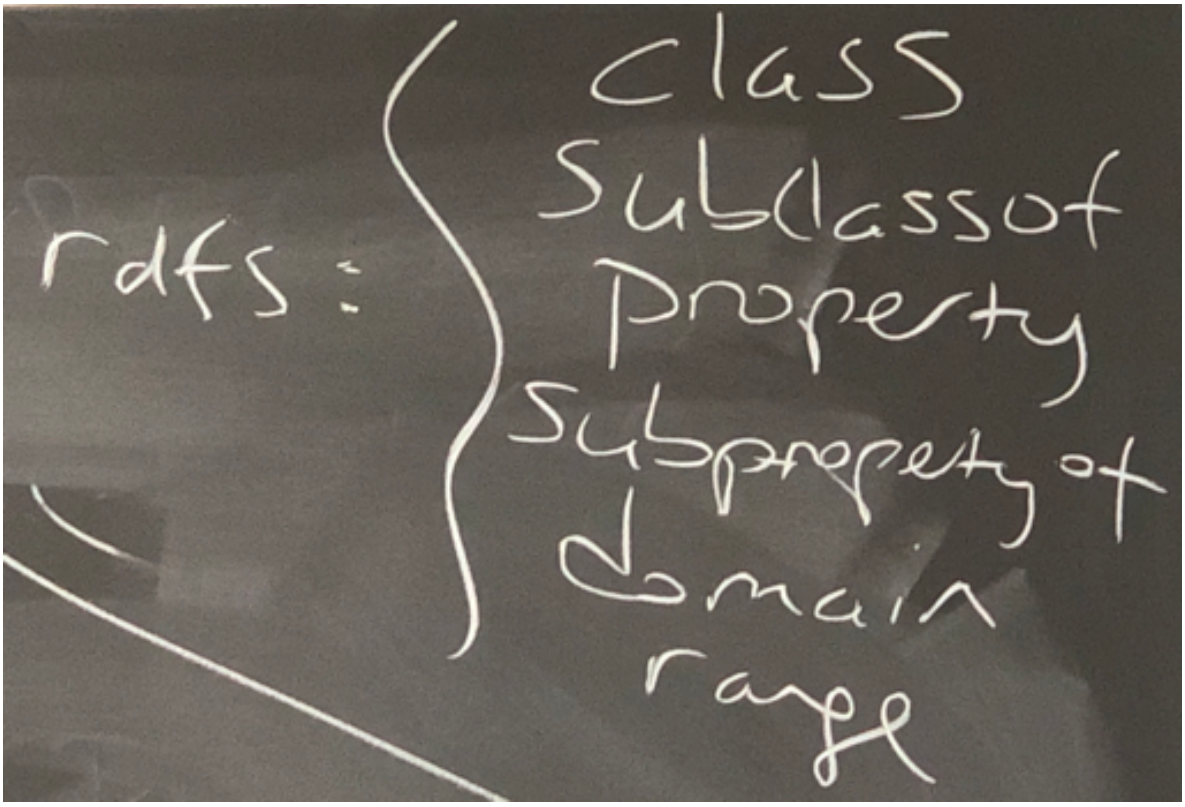
- Range (Everybody only has hasMaidenName.Name)



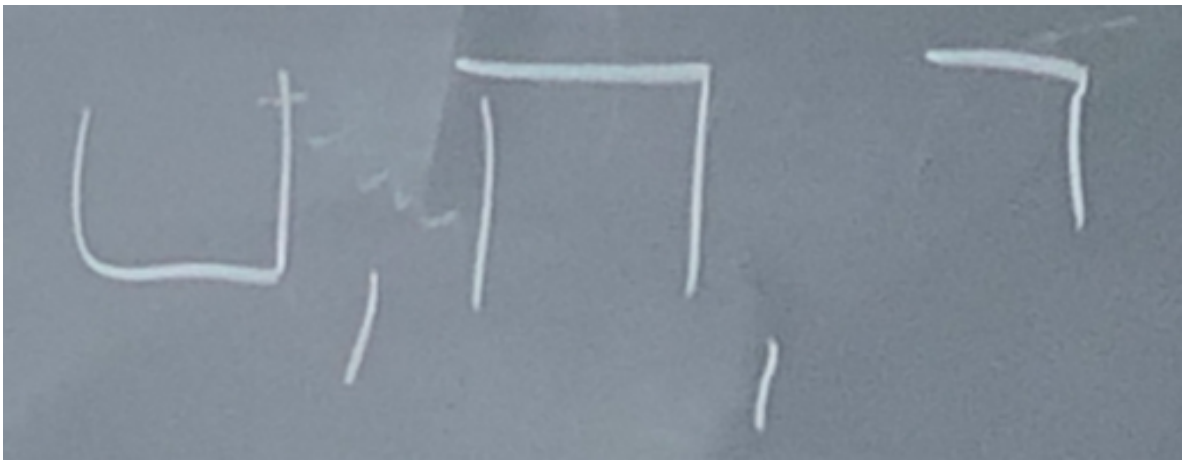
RDFS Expressivity

These things can be said:

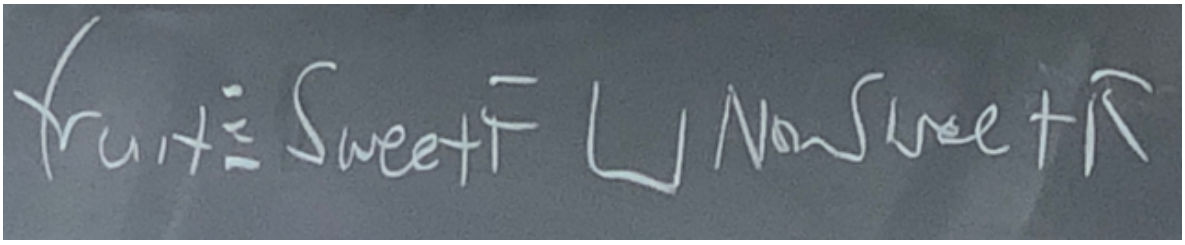
- class
- subclassof
- property
- subpropertyof
- domain
- range



OWL Union, Intersection, Complement



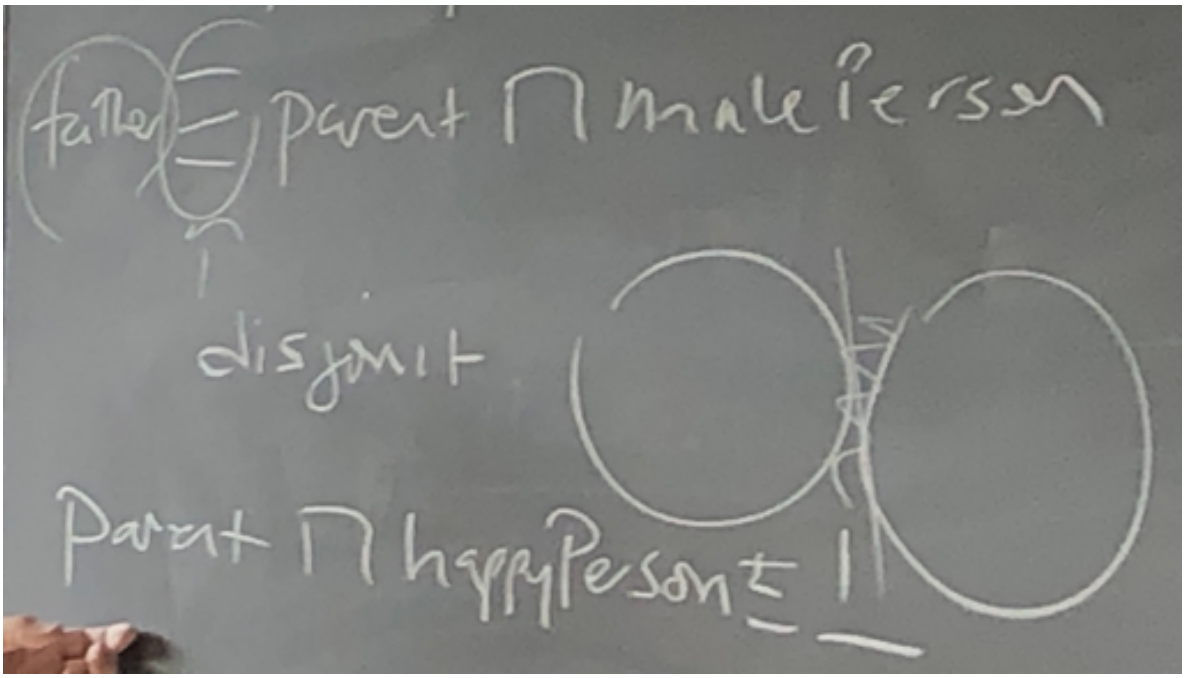
food#Fruit unionOf example from the slides:



OWL Equivalance and disjointness

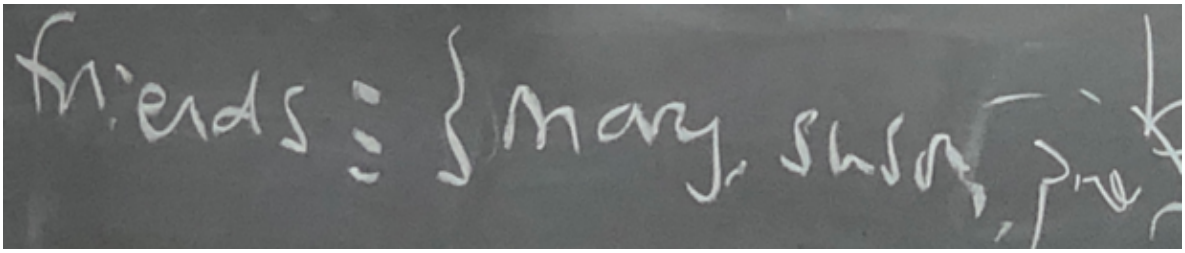
- disjointness - there is no possibility that that instance in set A and set B at

the same time



Enumeration

Example class with three individuals:ad

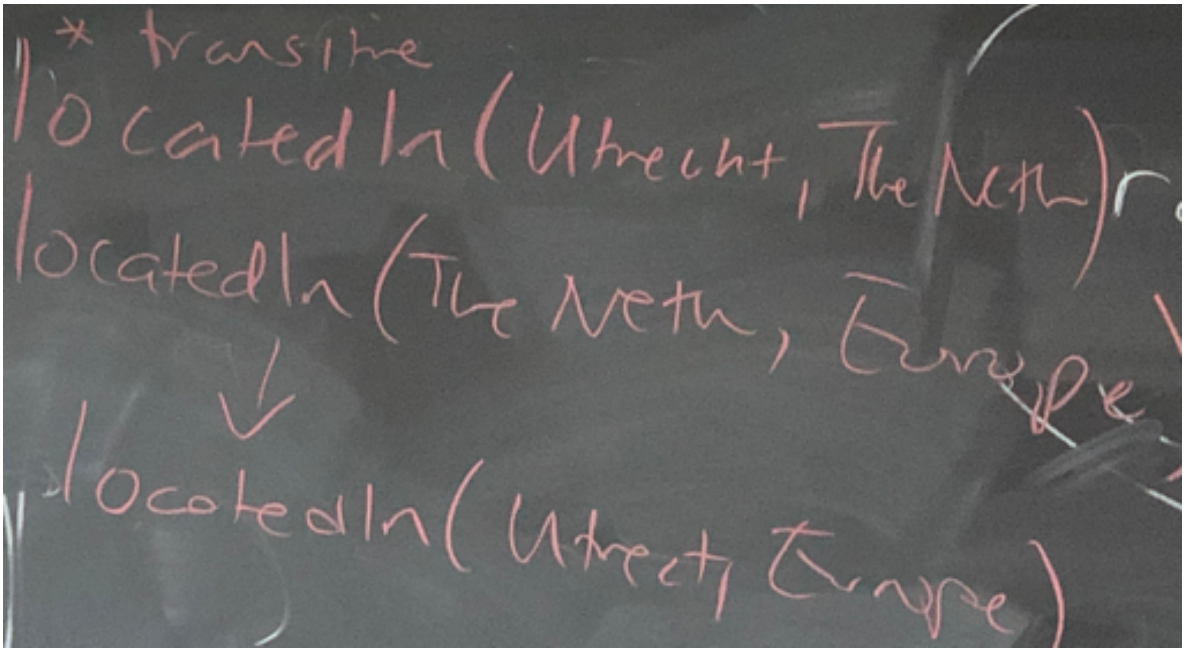


OWL properties

Transitive property

(If City is located in Region which is located in Country, then City is located in Country)

- You have to explicitly define the type as transitive property
- You can give it domain and range



Symmetric property
(If you are my neighbour, I am your neighbour)