ONTOLOGICAL ENGINEERING

- Ontology engineering is a set of tasks related to the development of ontologies for a particular domain.

- Google definition: a set of concepts and categories in a subject area or domain that shows their properties and the relations between them.

- How to create more general and flexible representations
  - Concepts like actions, time, physical objects and beliefs
  - Operates on a bigger scale than knowledge engineering
- Representing these abstract concepts is sometimes called **ontological engineering**.
- Define general framework of concepts (because representing everything is challenging) called as **upper ontology** with general concepts at the top and more specific concepts below the hierarchy
- Limitations of logic representation
 - Red, green and yellow tomatoes: exceptions and uncertainty

- Defining terms in the domain and relations among them
  - Defining concepts in the domain(classes)
  - Arranging the concepts in a hierarchy(subclass-superclass hierarchy)
  - Defining which attributes and properties classes can have and constraints on their values
  - Defining individuals and filling in property values

Today's ontologies conceptualize the world by defining classes and relationships.

computing meaning

CS869
1

Onl
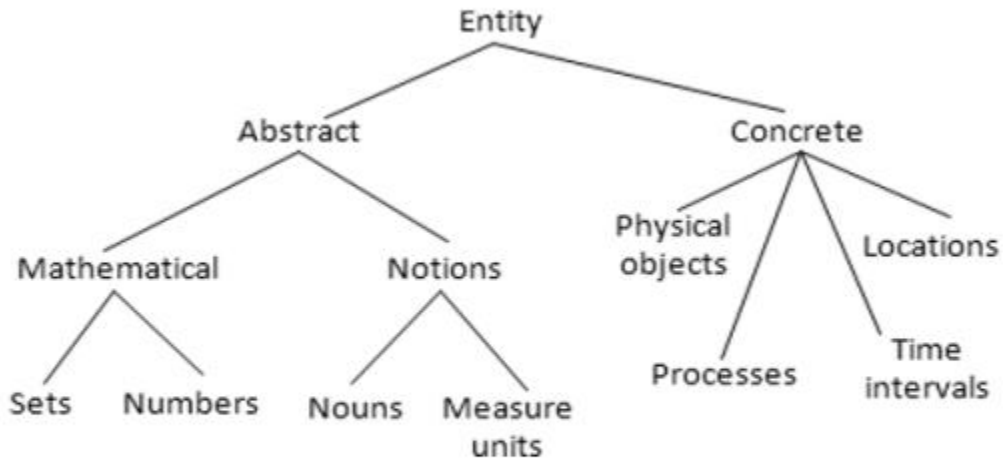
The upper ontology of the world. Each link indicates that the lower concept is a specialization of the upper one.

GENERAL PURPOSE ONTOLOGY

- A general-purpose ontology should be applicable in more or less any special-purpose domain.
    - Add domain-specific axioms
- In any sufficiently demanding domain, different areas of knowledge need to be unified.
    - Reasoning and problem solving could involve several areas simultaneously
- What do we need to express?
    - Categories, Measures, Composite objects, Time, Space, Change, Events, Processes, Physical Objects, Substances, Mental Objects, Beliefs