Inheritance Hierarchies

- **Living Thing**
  - **Plant**
  - **Animal**
    - **Vertebrate**
      - Has backbone
      - Four Limbs
      - Five digits
    - **Invertebrate**
      - **Amphibian**
      - **Fish**
      - **Mammal**
        - Warm blooded
        - Cover in hair
        - Maintains body heat
        - Breaths with lungs
      - **Reptile**
      - **Bird**
      - **Dog**
        - Fido
        - Rover
Inheritance Hierarchies

Building
- Address
- No. of floors

Commercial  Residence

Unit  House

23/47 Pitt Street  95 Elizabeth Street  12 Botany Road

Classes

Objects
Inheritance Hierarchies

Person
- Name
- Address
- Age

Staff
- Staff Number

Student
- Student ID

Undergrad
- Classes Taken

Undergraduate Student
Student Id: z1234567
Name: Fred Nurke
Classes Taken: COMP1400, COMP1917

Postgrad
- Supervisor
- Thesis Topic

Postgraduate Student
Student Id: z3753819
Name: Mary Jones
Supervisor: Prof. Smith
Thesis Topic: AI

Academic Staff
Name: Prof. Smith
Staff Id: z9648292
Classes Lectured: COMP1400

General
- Level
- Duties

Academic
- Level
- Classes Lectured

Classes
Classes

- Describe classes of objects
- Class definition has properties common to all objects in the class
- Classes are in a hierarchy
- Properties are inherited by subclasses
Objects

- Instances of classes
- “Dog” is a class but “Fido” is an actual object that belongs to the class “dog” and has all the properties of “dog” as well as its own properties.
- All dogs have four legs
- Fido has his own spots, an owner, etc.