INFS3101/7100 Ontology and the Semantic Web

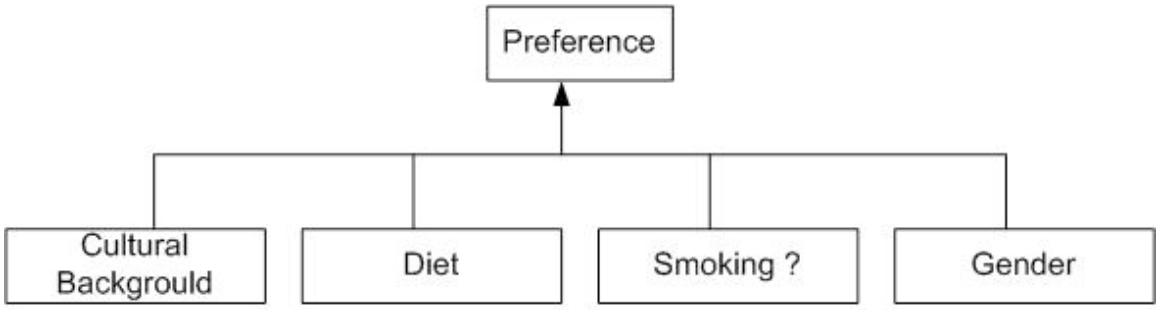
Week 6 Suggested Tutorial Solution: Subclasses and Subproperties

Semester 1, 2006

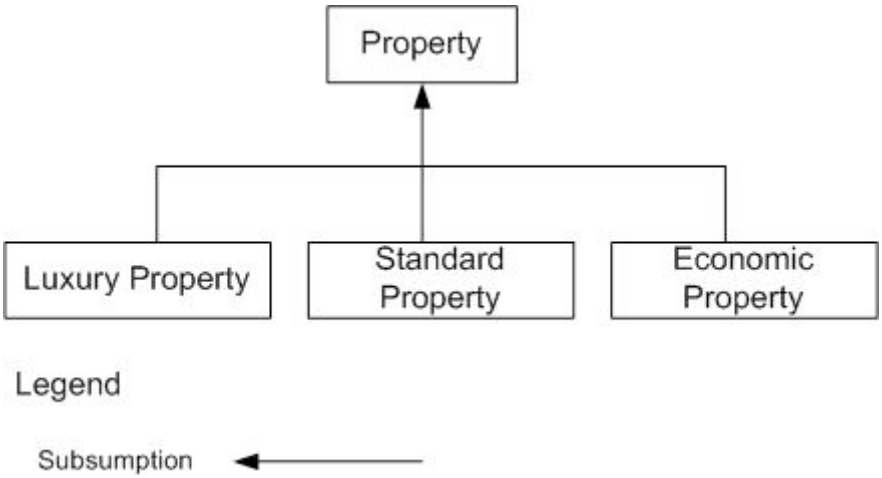
Describe the classes in the ontology. Give their rigid properties, indicating whether the rigid properties are lexical and logical, and their essential properties.

Class	Rigid property	Lexical/Logical	Essential Property
Building	Building	Lexical	Locations, suburbs, amenities, owners and addresses
House	House	Lexical	House types with the Building essential properties
Unit	Unit	Lexical	Unit types with the Building essential properties
Luxury Property	Luxury Property	Logical – rents above AUD1,000 per week	Owner, lease, estate agents who manages the property
Major Property Portfolio	Major Property Portfolio	Logical – property portfolios have at least 10 properties	Portfolio owner and type that can be commercial, residential or hybrid.

Show a system of subclasses for each class, inventing a plausible system if necessary. Each subclass is either defined or declared. If it is defined, give the defining predicates. If it is declared, tell how objects are classified into the subclass and by which role. Show that the identifying and unifying relations are preserved in the subclass structure. Make plausible additions to the system if necessary.

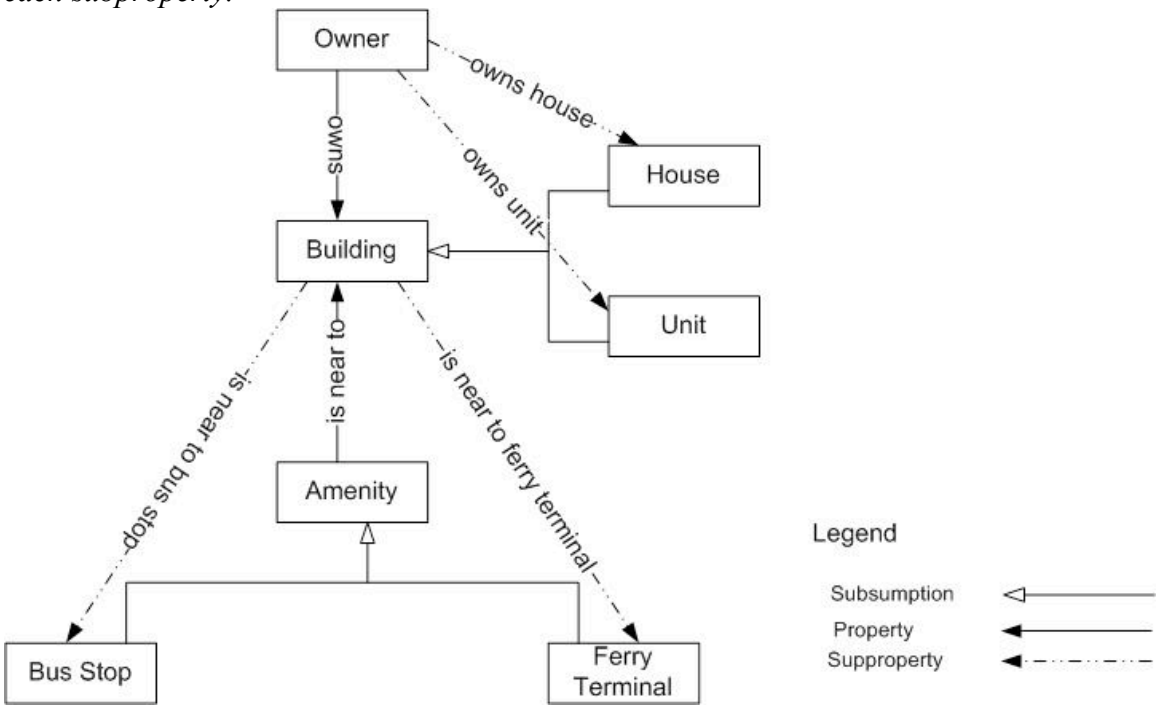


Class	declared/defined	Subclass	identifying relation	unifying relation
(Leased Room) Preference	Declared: The preference is classified into four aspects: culture background, diet, smoking and gender by the room lessor.	Cultural Background	Lessor names and room addresses	Lessor names and room addresses
		Diet	as above	as above
		Smoking?	as above	as above
		Gender	as above	as above



Class	Declared/Defined	Subclass	Identifying relation	Unifying relation
(Leased) Property	Defined: rent range from AUD1,000 – AUD1,500	Luxury Property	Lease number	Lease number
	Defined: rent range from AUD500 – AUD1,000	Standard Property	As above	As above
	Defined: rent range from AUD200 – AUD500	Economic Property	As above	As above

Describe a property (relationship, association) involving at least one of the classes from a. This property should have a subproperty structure. Invent a plausible structure if necessary. Show a population of property instances, including at least one instance of each subproperty.



Subproperty	Subproperty Instances
Owns unit	Owns 3/18 Benson Street, Toowong
Owns house	Owns 16 Central Avenue St. Lucia
Is near to bus stop	Is near to bus stop for route 412
Is near to ferry terminal	Is near to terminal West End