arguments of + must be numbers). The same is needed in RDF. After all, we would like to disallow statements such as:

Baron Way Apartment rents Jeff Meyer

Amsterdam has number of bedrooms 3

The first statement is nonsensical because buildings do not rent people. This imposes a restriction on the values of the property "rents." In mathematical terms, we restrict the *range* of the property.

The second statement is nonsensical because cities do not have bedrooms. This imposes a restriction on the objects to which the property can be applied. In mathematical terms, we restrict the *domain* of the property.

2.4.2 Class Hierarchies and Inheritance

Once we have classes, we would also like to establish relationships between them. For example, suppose that we have classes for

unit

residential unit commercial unit

house & apartment office

These classes are not unrelated to each other. For example, every residential unit is a unit. We say that "residential unit" is a *subclass* of "unit," or equivalently, that "unit" is a *superclass* of "residential unit." The subclass relationship defines a hierarchy of classes, as shown in figure 2.5. In general, A is a subclass of B if every instance of A is also an instance of B. There is no requirement in RDF Schema that the classes together form a strict hierarchy. In other words, a subclass graph as in figure 2.5 need not be a tree. A class may have multiple superclasses. If a class A is a subclass of both B_1 and B_2, this simply means that every instance of A is both an instance of B_1 and an instance of B_2.