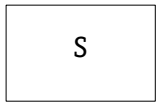
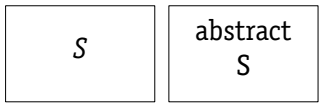
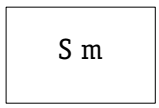
Graphical & Textual Data Model Notation
6.170 / Software Studio / Fall 2019



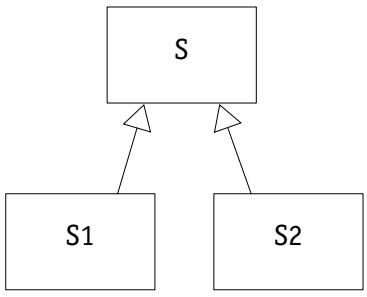
S is a set of atoms
set S



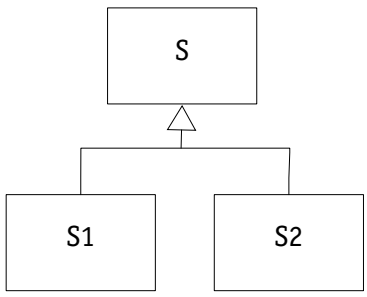
S is an abstract set: all its elements
are contained by its declared subsets
abstract set S



S is a set with multiplicity *m*
S: m T (S is a subset of T with m elements)
Note: in text, no marking means one; in diagram, means set

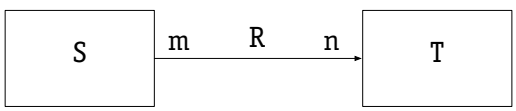


S1 and *S2* are subsets of *S*
S1: set S; S2: set S

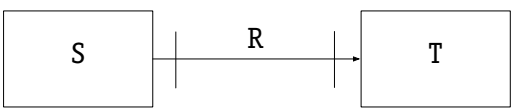


S1 and *S2* are disjoint subsets of *S*
disjoint S1, S2: set S

Multiplicity markings
Can use symbol or word
*, *set* any number (default)
?, *lone* zero or one
!, *one* exactly one
+, *some* one or more

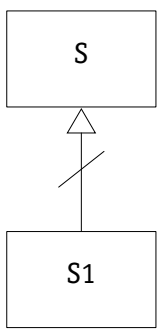


R is a relation from *S* to *T* with multiplicities *m* and *n*
Maps *m* atoms in *S* to each atom in *T*, and each atom in *S* to *n* atoms in *T*
R: S m -> n T



Immutability: mark at *T* end says that, over time, *R* maps each atom *s* in *S* to the same set of atoms in *T*; mark at *S* end says that, over time, the same set of atoms in *S* is mapped to a given atom in *T*.

R: S static -> static T



S1 is a static subset of *S:*
a member of *S* cannot be
in *S1* at some time and not
in *S1* (but still in *S*) at
some other time

S1: static set S

textual constraints corresponding to the diagrammatic version shown in italics