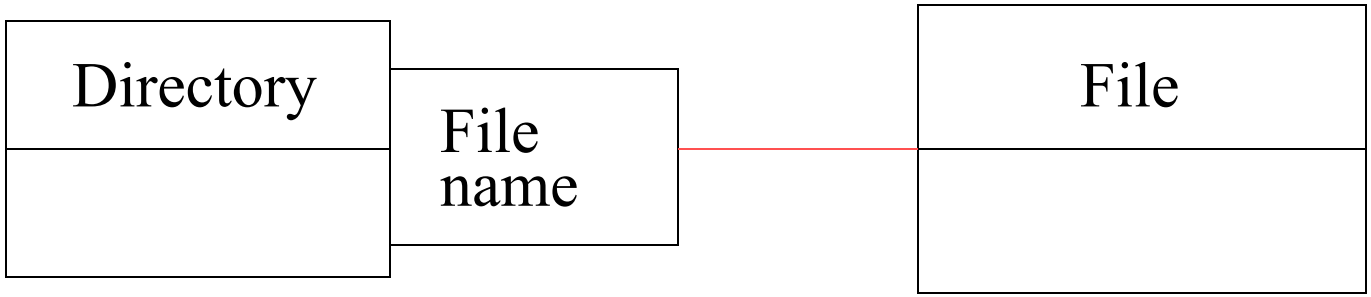
Qualification

Example

A directory contains zero or more files

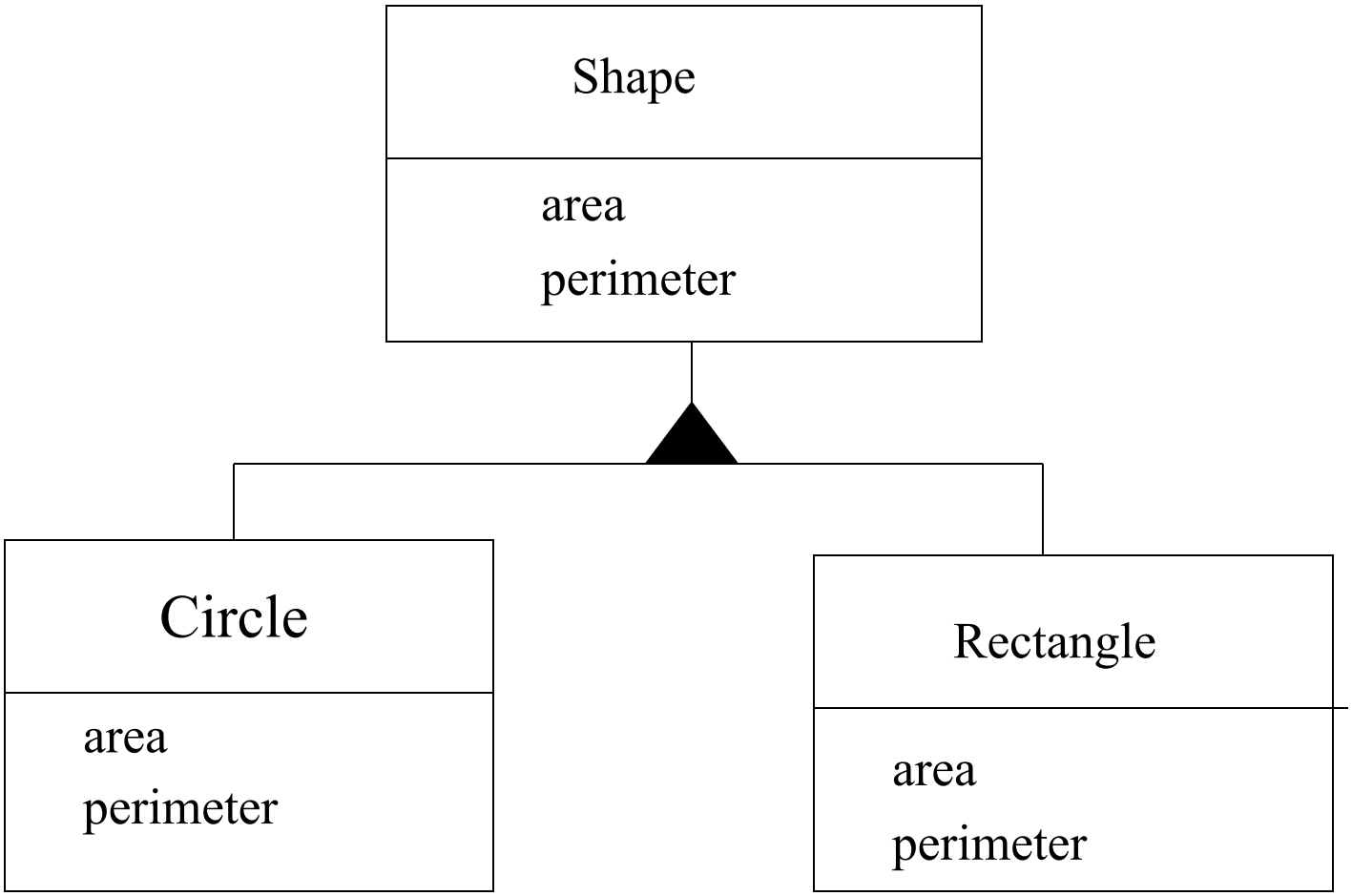
Multiplicity can be removed by the qualifier *file name* which uniquely identifies a single file.

Qualification



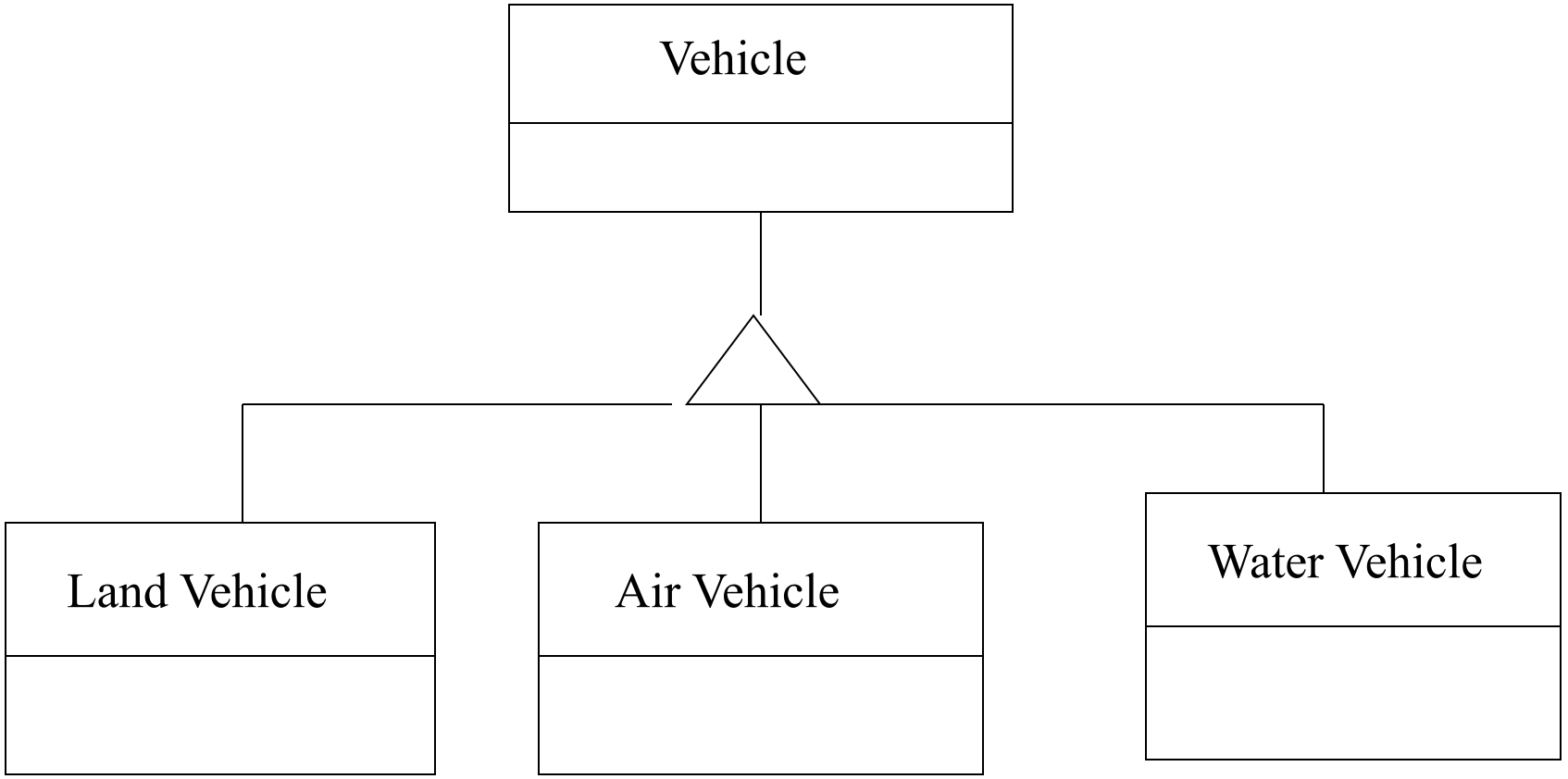
Multiplicity is removed by the qualifier

Generalization and Specialization



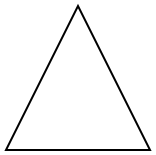
Classes having the same attributes may be generalized to a common ancestor class

Generalization and Specialization

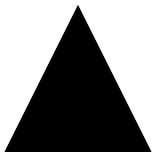


A sea plane travels in the air and on water

Generalization and Specialization



An empty triangle indicates that some objects belong to more than one of the subclasses (subclasses overlap)



A filled triangle indicates that all objects of the parent class belong to distinct subclasses

Constructing the Object Model Diagram

Step 1

Determine the objects in the problem domain from the requirements document.

Example -- Arithmetic Expression

Requirements Document

An arithmetic expression is a collection of one or more terms separated by additive operators. A term is a sequence of one or more factors separated by multiplicative operators. A factor is a variable, or a constant, or an arithmetical expression enclosed in parentheses.

Example -- Arithmetic Expression

Requirements Document

An **arithmetic expression** *is a collection of* one or more **terms** *separated by* **additive operators**. A **term** *is a sequence of* one or more **factors** *separated by* **multiplicative operators**. A **factor** *is a* **variable**, or a **constant**, or an **arithmetic expression** *enclosed in* **parentheses**.

Arithmetic Expression

Noun Phrases

Arithmetic expression ← object

term ← object

additive operator ← object

factor ← object

multiplicative operator ← object

variable ← object

constant ← object

enclosed in parentheses ← constraint

Arithmetic Expression

arithmetic expression is a sequence of terms

terms are separated by additive operators

term is a sequence of factors

factors are separated by multiplicative operators

factor is a variable

factor is a constant

factor is a arithmetic expression {enclosed in parentheses}

constraint

Model Diagram