UML TUTORIALS

THE LOGICAL (CLASS) MODEL

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The Logical (Class) Model

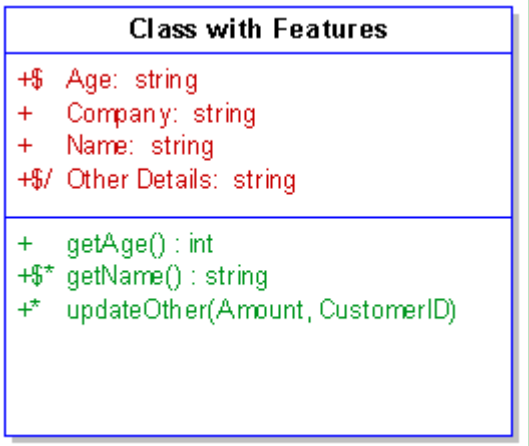
A logical model is a static view of the objects and classes that make up the design/analysis space. Typically, a Domain Model is a looser, high level view of Business Objects and entities, while the Class Model is a more rigorous and design focused model. This discussion relates mainly to the Class Model

The Class Model

A Class is a standard UML construct used to detail the pattern from which objects will be produced at run-time. A class is a specification - an object an instance of a class. Classes may be inherited from other classes (that is they inherit all the behaviour and state of their parent and add new functionality of their own), have other classes as attributes, delegate responsibilities to other classes and implement abstract interfaces.

The Class Model is at the core of object-oriented development and design - it expresses both the peristent state of the system and the behaviour of the system. A class encapsulates state (attributes) and offers services to manipulate that state (behaviour). Good object-oriented design limits direct access to class attributes and offers services which manipulate attributes on behalf of the caller. This hiding of data and exposing of services ensures data updates are only done in one place and according to specific rules - for large systems the maintenance burden of code which has direct access to data elements in many places is extremely high.

The class is represented as below:



<LM02: Class Model>

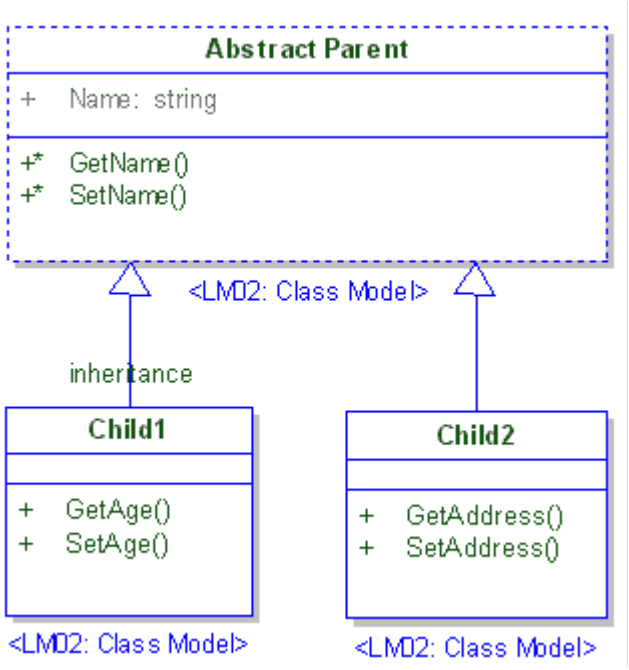
Note that the class has three distinct areas:

1. The class name (and stereotype if applied)
2. The class attributes area (that is internal data elements)
3. The behaviour - both private and public

Attributes and methods may be marked as

- Private, indicating they are not visible to callers outside the class
- Protected, they are only visible to children of the class
- Public, they are visible to all

Class inheritance is shown as below: an abstract class in this case, is the parent of two children, each of which inherits the base class features and extends it with their own behaviour.



Class models may be collected into packagesof related behaviour and state. The diagram below illustrates this.