# UML

The Unified Modelling Language (UML) provides graphical notation to represent classes, objects, the associations between classes and the communications between objects.

A class is simply represented as a rectangle with three segments: the top segment presents the name of the class; the middle segment presents the data (properties, attributes) of the class; and the bottom segment presents the functions (methods) of the class.

An association is represented by a line between the associated classes. This may be annotated with information regarding the multiplicity of the association and the nature of the association.

When one class has parts that are an existing class we say that the two classes have a whole/part relationship. There are two types of this:
- aggregation where the 'part' objects exist independently of the 'whole' objects.
- composition where the existence of the 'part' objects depend on the existence of the 'whole' object.

# UML

The Unified Modelling Language (UML) is a graphical language used to model object-oriented (OO) systems. The benefits of using UML are:

- It provides a pictorial representation of a design. That is, it provides a series of diagrams that highlight the essential features of an OO design.
- It provides a clear medium for communication that doesn't require knowledge of a particular programming language /scripting language. Thus one may present UML diagrams to a client who would be able to understand the design without the need to look at programming / scripting code. It therefore focuses on the essential features of the design (removing all of the syntactic detail of the code).
- It provides a permanent record of a design. That is, it exists independently of the implemented system and can be used in future to build similar systems.
- UML diagrams are independent of any particular programming/scripting language and therefore may be implemented in any OO language.