

UML Diagram Cheat Sheet and Reference Guide

By Alyssa Walker ⌚ Updated February 26, 2022

In this UML Notation Cheat Sheet, you will learn:

- [Things in UML](#)
 - [Relationships type in UML](#)
 - [UML Use Case Diagram](#)
 - [UML State Machine Diagram](#)
 - [UML Activity Diagram](#)
 - [Sequence Diagram](#)
 - [Collaboration diagram](#)
 - [Timing diagram](#)
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- [UML Component Diagram](#)
 - [Deployment Diagram](#)

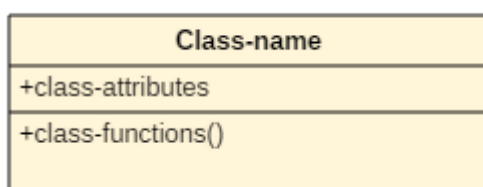
Things in UML

A thing can be described as any real-world entity or an object. Things are divided into various categories in UML as follows,

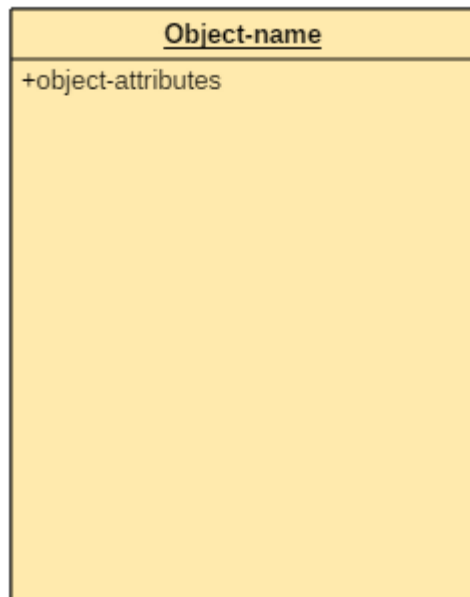
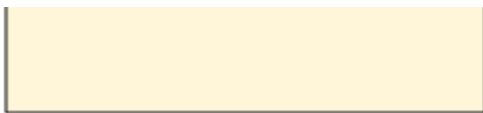
- Structural things
- Behavioral things
- Grouping things
- Annotational things

Structural things

Structural things are all about the physical part of a system. It is the noun of a UML model, such as a class, object, interface, collaboration, use case, component, and a node.



Class :- A class is used to represent various objects. It is used to define the properties and operations of an object.



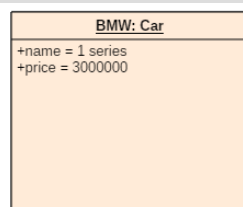
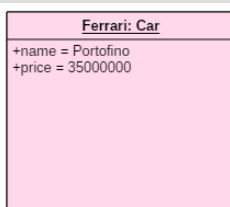
Object :- An object is an entity which is used to describe the behavior and functions of a system. The class and object have the same notations.

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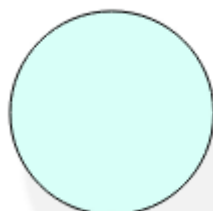


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Example of Object Diagram :- The below UML object diagram contains two objects named Ferrari and BMW which belong to a class named as a Car. The objects are nothing but real-world entities that are the instances of a class.



Interface-name

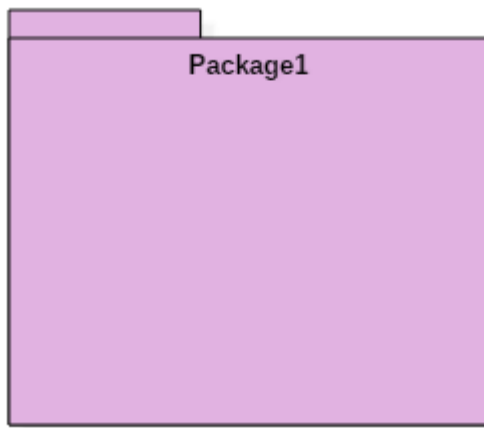
Interface :- An interface is similar to a

They are the verbs of a UML model, such as interactions, activities and state machines. Behavioral things are used to represent the behavior of a system.



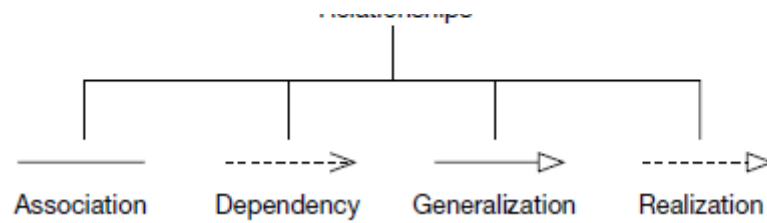
Interaction diagram :- Interaction diagrams are used to visualize the message flow between various components of a system.

Grouping things



It is the package which is used to group semantically related modeling elements into a single cohesive unit.

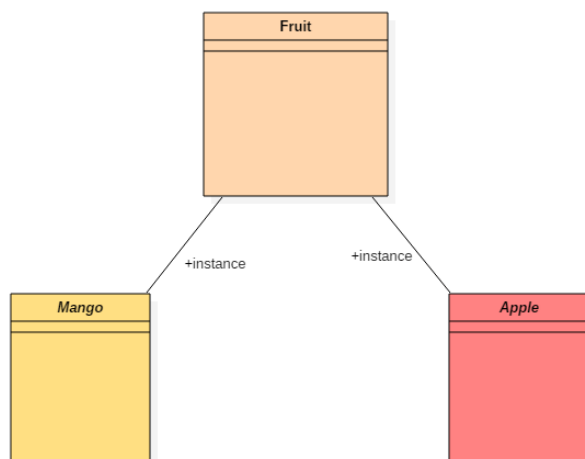
Annotational things



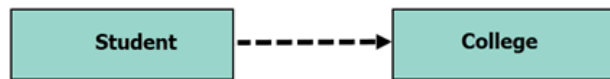
The relationship allows you to show on a model how two or more things relate to each other.



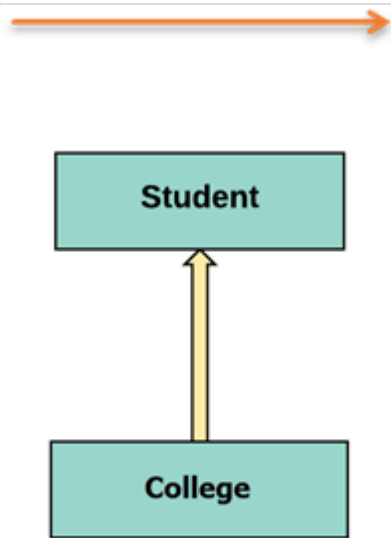
Association relationship :- It is a set of links that connect elements of the UML model. It is denoted as a dotted line with arrowheads on both sides. Both the sides contain an element which describes the relationship.



Reflexive association :- Reflexive association states that a link or a connection can be present within the objects of the same class.



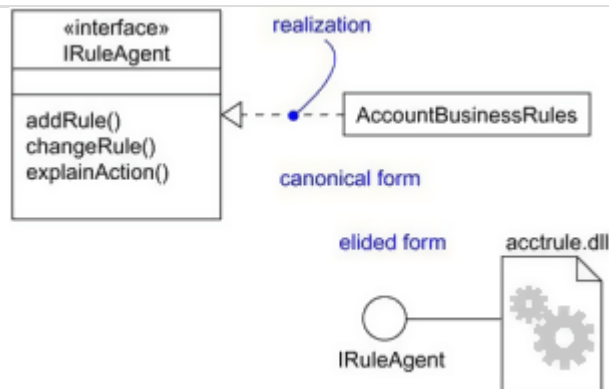
defines the direction of a dependency from one object to another.



Generalization relationship :- It is also called as a parent-child relationship. This type of relationship is used to represent the inheritance concept.

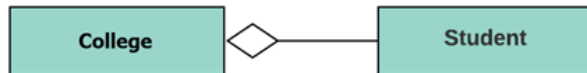


Realization relationship :- Realization relationship is widely used while denoting interfaces.



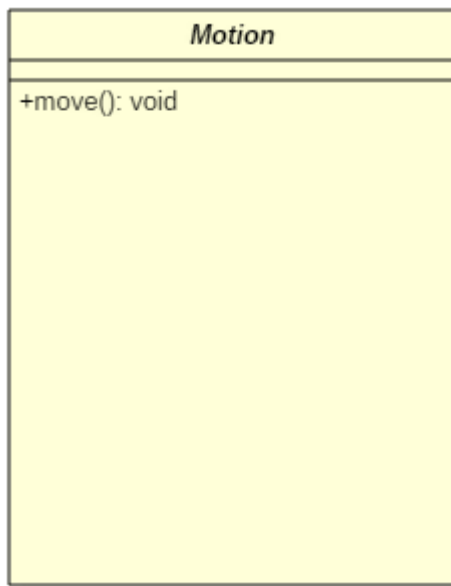
Realization can be represented in two ways:

used in various applications.

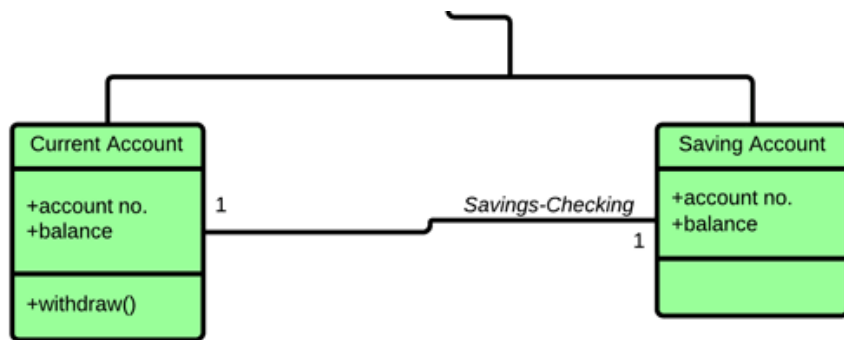


Aggregation :- aggregation relationship, the dependent object remains in the scope of a relationship even when the source object is destroyed. An aggregation is a subtype of an association relationship in UML.

Abstract Classes

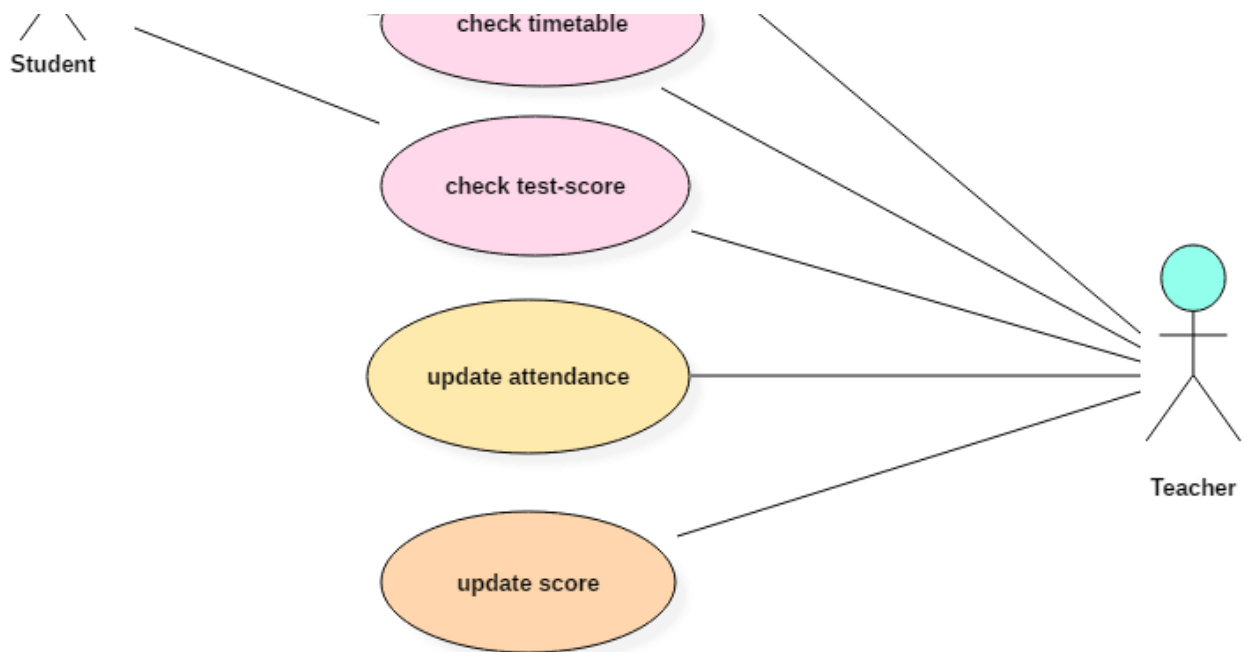


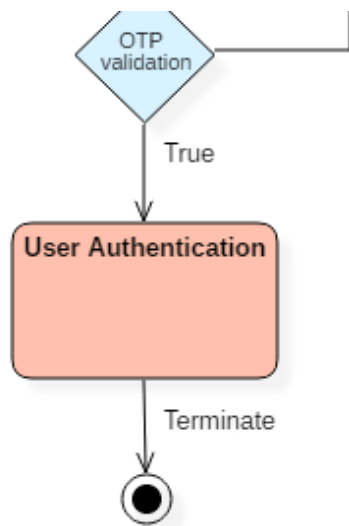
It is a class with an operation prototype, but not the implementation. In UML The only difference between a class and an abstract class is that the class name is strictly written in an italic font.



UML Use Case Diagram

Use Case Diagram captures the system's functionality and requirements by using actors and use cases. Use Cases model the services, tasks, function that a system





transition will not take place, and it will again go back to the beginning state until the user enters the correct OTP.



