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bliki: AggregationAndComposition

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2 minutes

Few things in the UML cause more consternation than aggregation and composition, in particular how they vary from regular association.

The full story is muddied by history. In the pre-UML methods there was a common notion of defining some form of part-whole relationships. The trouble was that each method defined different semantics for these relationships (although to be fair, some of these were pretty semantics free).

So when the time came to standardize, lots of people wanted part-whole relationships, but they couldn't agree on what they meant. So the UML definers introduced two relationships.

aggregation (*white diamond*) has no semantics beyond that of a regular association. It is, as Jim Rumbaugh puts it, a modeling placebo. People can, and do, use it - but there are no standard meanings for it. So if you see it, you should inquire as to what the author means by it. I would advise not using it yourself without some form of explanation.

composition (*black diamond*) does carry semantics. The most particular is that an object can only be the part of one composition

relationship. So even if both windows and panels can hold menu-bars, any instance of menu-bar must be only held by one whole. This isn't a constraint that you can easily express with the regular multiplicity markers.