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Write-Up Problem 3 – Aggregation and Composition

**Define these relationships in your own words. Do a little research on the internet to see how other people define these terms. How does your definition compare to other definitions (site sources/links)?**

In my own words, aggregation is when an object has a relationship with another object. For instance, a Person owning a Car. Composition, on the other hand, is when an object is made up of another object. A Person cannot live without a Heart.

The following definitions are from another source. Here is the link:

URL: <https://www.visual-paradigm.com/guide/uml-unified-modeling-language/uml-aggregation-vs-composition/>

“Aggregation implies a relationship where the child can exist independently of the parent. Example: Class (parent) and Student (child). Delete the Class and the Students still exist.

Composition implies a relationship where the child cannot exist independent of the parent. Example: House (parent) and Room (child). Rooms don't exist separate to a House.”

**What is the difference between these two relationships?**

Aggregation and composition are both forms of association. The main difference between the two is whether coexistence is required (composition) or not (aggregation).

**Code Explanation:**

In the demo program, a class is created named Fox. Fox has two fields, a string named “name” and a string array named “bodyParts.” In the constructor, there is only one parameter “name” which would set the “name” field of the Fox object. This part demonstrates aggregation. The “bodyParts” string array is initialized within the array, which would demonstrate composition because the “bodyParts” are a part of the Fox object.