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Short Essay #2: "Hierarchical and Network data models"

A hierarchical data model is a model in which data is organized in a tree-like structure with child elements that fall under parent elements and utilizes this relationship to form the structure of the data model. One of the downfalls of this system is that a child element can only have one parent element, so if a child element falls under two parent elements, it must be duplicated, thus taking up extra space in memory. A network data model is organized so that the relationships between parent and child elements can be many to many. However, the major downfall of both systems is that they do not support higher-level queries (Garcia-Molina, 2002). Therefore, in terms of visual organization for humans, an XML model is helpful to visualize which the layout of parent and child elements, but is not helpful for computers carrying out queries.

Garcia-Molina, Hector, et al. *Database systems: the complete book*. Upper Saddle River, NJ, Pearson 2002.