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CIS 310-01

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11 February 2020

The Difference Between Conceptual and Logical Models

The conceptual data model is an all-encompassing view of the database through the eyes of the organization. It integrates all entities, relationships, constraints, and processes into a single view. It identifies the highest-level relationships between entities and describes the main data objects. However, it does not specify attributes or a primary key. The conceptual model does not depend on the DBMS software used to implement the model because it has software and hardware independence.

The logical data model gives as much detail about the data as possible. It is not concerned with how the data will be implemented. Similarly to the conceptual model, it includes information about entities and the relationships among them. However, it does specify attributes and the primary key. On top of this, foreign keys are also specified.

The Difference Between Weak and Strong Relationships

When creating models, a strong relationship is denoted by a thick solid line. On the flip side, a weak relationship is indicated by a dotted line. Relationship strength is based on how the primary key of a related entity is defined. A strong relationship exists when the primary key of the related entity contains a primary key component of the parent entity. A weak relationship exists when the primary key of the related entity does not contain a primary key component of the parent entity.