Topic 5 Discussion 2

Explain how you would develop a conceptual data model for a current system that supports the scope and requirements of the proposed system. Provide an example.

Hello Class,

Developing a conceptual data model for a new system involves understanding the current system's data, its relationships, and how it supports the proposed system's scope and requirements(Agar, 2021).

**Analyze the Current System**

Identify Entities - Begin by identifying the key entities in the current system. These are the objects or concepts about which data is stored(Iyi, 2024). For example, in an e-commerce system, entities might include Customers, Products, Orders, and Shipping Addresses.

Define Attributes - For each entity, list out its attributes. Attributes are the characteristics or properties of the entity. For example, the "Customers" entity might have attributes like "Customer ID," "Name," "Email," and "Address."

Determine Relationships - Analyze how the entities relate to each other. Are there one-to-one, one-to-many, or many-to-many relationships? For example, a "Customer" can have many "Orders," and an "Order" can have many "Products."

**Understand the Proposed System's Scope and Requirements**

New Entities and Attributes - Identify any new entities or attributes required by the proposed system. For instance, if the proposed system adds a feature for managing product reviews, you'll need a new entity "Reviews" with attributes like "Review Text," "Rating," and "Customer ID."

Modified Relationships - Determine if any existing relationships need to be adjusted or new relationships added to support the proposed system's functionality. For example, the "Products" entity might now have a one-to-many relationship with the "Reviews" entity.

**Map the Current Data Model to the Proposed System**

Align Entities and Attributes - Compare the entities and attributes from the current system with the proposed system's requirements. Determine which entities and attributes can be reused and which need to be modified or added.

Adjust Relationships - Update the relationships between entities to reflect the new requirements. For example, if the proposed system allows customers to manage their shipping addresses, the relationship between "Customers" and "Shipping Addresses" might change from one-to-many to many-to-many.

**Create the Conceptual Data Model**

Use a Modeling Tool - Utilize a data modeling tool (e.g., ERwin, MySQL Workbench) to visually represent the entities, attributes, and relationships.

Document the Model - Create clear documentation that explains the entities, attributes, relationships, and any data constraints (e.g., primary keys, foreign keys).

Example

If the current system manages customer orders and the proposed system adds inventory management, the data model would need to include a new entity "Inventory" with attributes like "product ID," "quantity," and "location." The relationship between "Inventory" and "Products" would be one-to-many, as a single product can have multiple inventory records.

References:

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Iyi Obiechina. (2024, April 14). *Conceptual Data Modelling: How to Use Data to Drive Business Growth*. Medium. https://medium.com/@iyi\_bobby/conceptual-data-modelling-how-to-use-data-to-drive-business-growth-9d245198bf9d

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