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Course: Database system

Q no 1:

Part 1.

Metadata is data that describes other data. Meta is a prefix that -- in most information technology usages -- means "an underlying definition or description." Metadata summarizes basic information about data, which can make finding and working with particular instances of data easier.

For example, author, date created, date modified and file size are examples of very basic document metadata. Having the ability to filter through that metadata makes it much easier for someone to locate a specific document.

In addition to document files, metadata is used for:

Images

Videos

Spreadsheets

Web pages

Part 2.

There are five major components in a database environment:

1. data
2. hardware
3. software
4. people
5. procedures

Part 3.

1. Microsoft Access
2. Mongo DB
3. Oracle
4. Postgres

Part 4:

A large store of data accumulated from a wide range of sources within a company and used to guide management decisions.

Part 5:
mandatory one : participation in the relationship by the entity is mandatory.
mandatory many: participation in the relationship by the many entities is mandatory.

optional one: participation in the relationship by the entity is optional.
optional one: participation in the relationship by the many entities is optional.

Part 6:
In the area of requirements, needs are to compile, analyze, and classify the CASE data management requirements. We also compile, analyze, and classify the different options for data manager, and determine which options satisfy which requirements.

In the system architecture area we analyze the main CASE environment architectures, and propose a new architecture that satisfies the data management requirements discussed earlier.

Q3

Part a)

Database Life Cycle
The database life cycle defines the stages involved for implementing a database, starting with requirements analysis and ending with monitoring and modification. Furthermore, the DBLC never ends because database monitoring, modification, and maintenance are part of the life cycle, and these activities continue long after a database has been implemented. Put simply, the DBLC encompasses the lifetime of the database.
The five stages in the database life cycle are:

1. Requirements analysis
2. Logical design
3. Physical design
4. Implementation
5. Monitoring, modification, and maintenance

Part b)

Conceptual and Relational model are created in phase 2 of design phase.

The purpose of the conceptual design phase is to build a conceptual model based upon the previously identified requirements, but closer to the final physical model. A commonly-used conceptual model is called an *entity-relationship* model.

Q3: ERD Diagram for Given Scenario:

Artist
Name (string)
Date of birth
Age (int)
Style of art (str)

Artworks
Artist (Artist)
Year (Data)
Title (string)
Type of art (string)
Price (int)

Gallery
Customer number (string)
Address (string)
price (int)
Artist (Artist)
group of art (group)

Group
part art (string)
still life (string)
picaso (string)
Name (string)