RECAP

- MY NAME IS………..

- I REMEMBER………

Objective of Today's Lecture

Database Application Development Process

Database Development Process

- **Comprises of multiple stages**
- **Not strictly sequential but are there feedback loops**
- **Small database systems – need not be complex development**
- **Medium to large database systems – Extremely complex life cycle development**

Stages of the DBSDLC

○ **The main stages of the database system development lifecycle include:**

Database planning, system definition, requirements collection and analysis, database design, DBMS selection (optional), application design, prototyping (optional), implementation, data conversion and loading, testing, and operational maintenance.
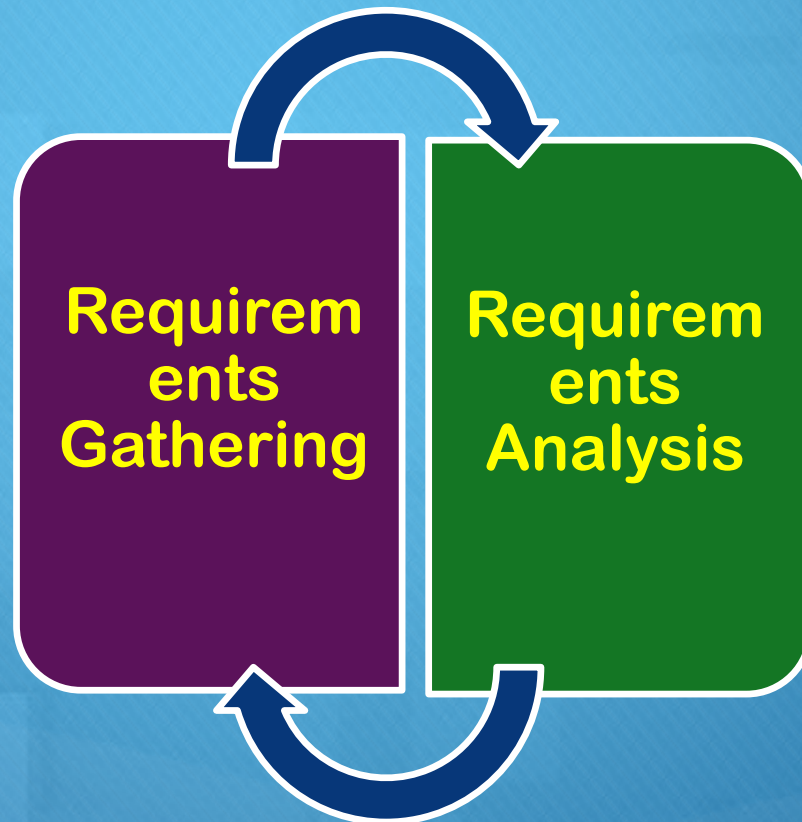
DBSDLC – Planning

- **Managerial activities**

- **Plan how the stages of the database system development lifecycle can be realized as efficiently and effectively as possible.**

- **Defines Mission statement**

- **Mission statement met by mission objectives**

DBSDLC – System Definition

- Defines scope and boundaries of the database application and the major user views.

- Includes within system boundaries not only the current users and application areas, but also future perspectives.
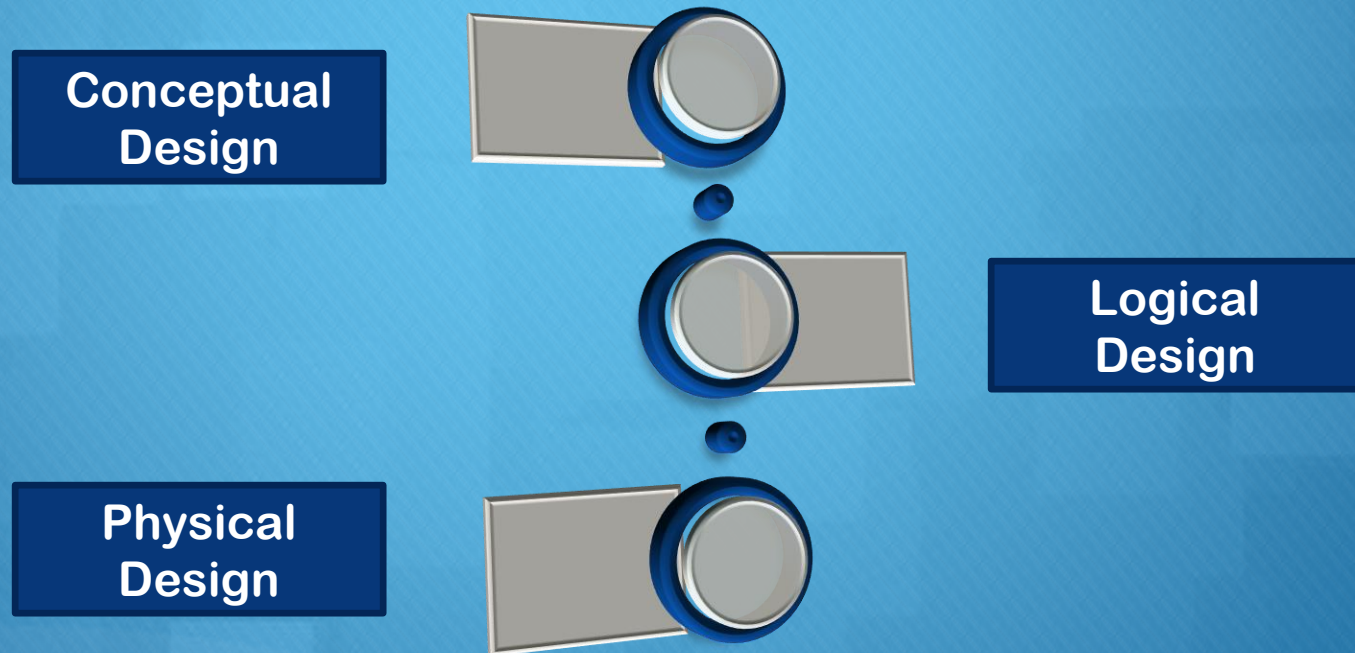
DBSDLC – Requirements Collection and Analysis

Requirements Gathering

Requirements Analysis

DBSDLC – Database Design

- The process of creating a design that will support the enterprise's mission statement and mission objectives for the required database system.

- **bottom-up** – Appropriate for simple databases with a relatively small number of attributes.

- **Top-down** – Appropriate strategy for the design of complex databases.

DBSDLC – Design Phases

Conceptual Design

Logical Design

Physical Design

DBSDLC – Design Phases

- Conceptual design

  - Build a model independent of the choice of DBMS

- Logical design

  - Create the database in a given DBMS

- Physical design

  - How the database is stored in hardware

DBSDLC – Selecting a DBMS

○ **Involves selection of a suitable DBMS for the database system.**

DBSDLC – Application Design

○ **Involves user interface design and the application programs that use and process the database.**

DBSDLC – Prototyping

- Building a working model of a database system

DBSDLC - Implementation

- The physical realization of the database and application designs.

DBSDLC - Data Conversion and Loading

- Transferring any existing data into the new database and converting any existing applications to run on the new database.
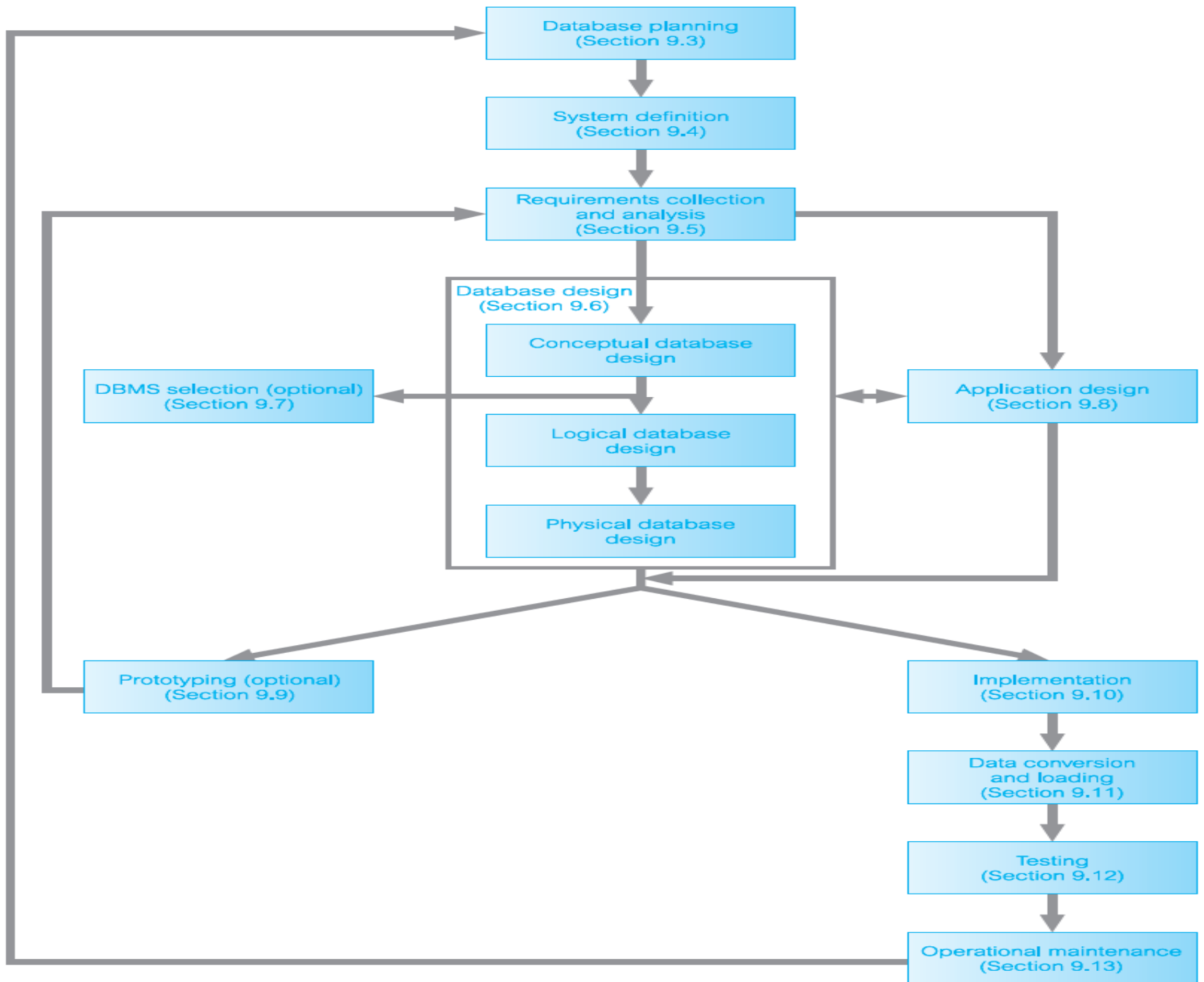
DBSDLC – Testing

- The process of running the database system with the intent of finding errors.

- Verify and validate the system against mission objectives and specified requirements.

DBSDLC – Operational Maintenance

○ **The process of monitoring and maintaining the database system following installation.**

○ Database system is fully implemented. The system is continuously monitored and maintained. When necessary, new requirements are incorporated into the database system through the preceding stages of the lifecycle.

Database planning
(Section 9.3)

System definition
(Section 9.4)

Requirements collection
and analysis
(Section 9.5)

Database design
(Section 9.6)

Conceptual database
design

DBMS selection (optional)
(Section 9.7)

Logical database
design

Physical database
design

Application design
(Section 9.8)

Prototyping (optional)
(Section 9.9)

Implementation
(Section 9.10)

Data conversion
and loading
(Section 9.11)

Testing
(Section 9.12)

Operational maintenance
(Section 9.13)

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AND THAT IS FAREWELL TO DAY NINE ☺