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Academy

Database Design

10-1
System Development Life Cycle

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Objectives

This lesson covers the following objectives:

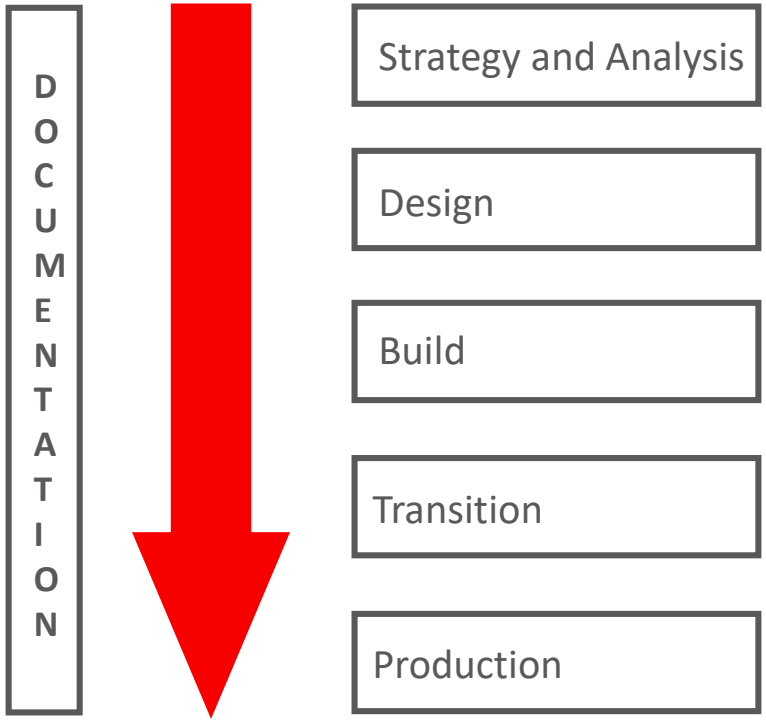
- List and describe the different stages of the system development life cycle (SDLC)
- Identify the role of data modeling in the system development life cycle
- Relate the project tasks to the different stages of the system development life cycle

Purpose

- When you build a house, you draw up the plans before you start construction.
- During construction, you lay the foundation before you start putting up walls. You finish all the major construction before you start decorating.
- The architect, the builder, and the decorator coordinate their efforts so that they do their jobs at the appropriate times.
- A knowledge of the tasks associated with each stage of the system-development life cycle will help you better plan a project and be a productive member of the team.

System Development Life Cycle

- You can develop a database, from concept through production, by using the system development life cycle (SDLC) for software development.
- Applying this top-down, systematic approach to database development transforms business-information requirements into an operational database.

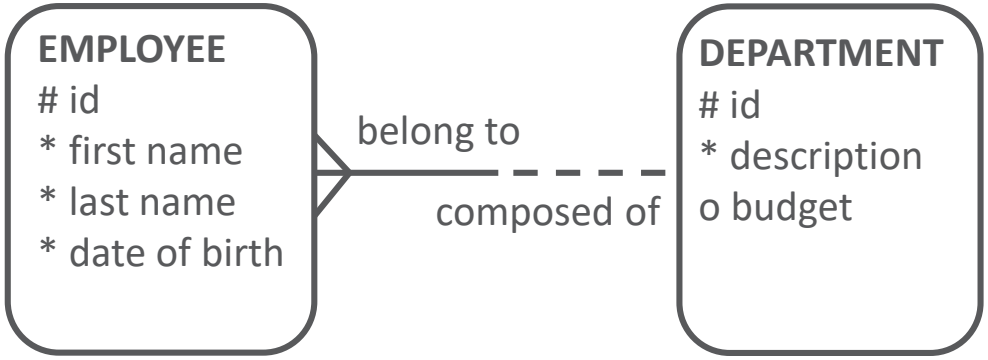


Strategy and Analysis

- Project tasks at this stage of the Systems Development Life Cycle (SDLC):
- Study and analyze the business requirements.
- Interview users and managers to identify the information requirements.
- Incorporate the enterprise and application mission statements as well as any future system specifications.
- Build conceptual models of the system.

Strategy and Analysis

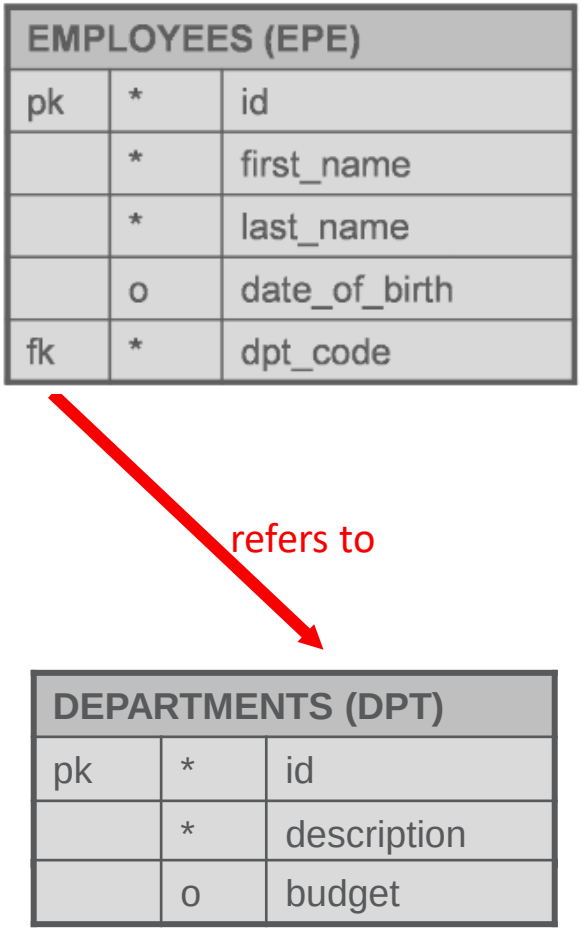
- Transfer the business narrative into a graphical representation of business-information needs and rules.
- Confirm and refine the model with the analysts and experts.



Design

Project tasks in the design phase:

- Transform the model developed in the strategy and analysis phase.
- Map entities to tables, attributes to columns, relationships to foreign keys, and business rules to constraints.



Build

Project tasks in the Build phase:

- Write and execute the commands to create the tables and supporting objects for the database.
- Populate the tables with data.
- Develop user documentation, help text, and operations manuals to support the use and operation of the system.

Transition

Transition phase tasks:

- Conduct user-acceptance testing.
  - This type of testing is where monitored users determine whether a system meets all their requirements, and will support the business for which it was designed.
- Convert existing data

Transition

Transition phase tasks:

- Parallel operations.
  - Both systems (old and new) are running at the same time. This is done to give users time to train and switch over to the new system and to check that the new system is producing the same results as the old system
- Make any modifications required.

Production

- Production phase tasks:
  - Roll out the system to the users.
  - Operate the production system.
  - Monitor its performance and enhance and refine the system.
- The various phases of the system development life cycle can be carried out iteratively.

Terminology

Key terms used in this lesson included:

- Parallel operations
- Populate
- System development life cycle
- User acceptance testing
- Iteration

Summary

In this lesson, you should have learned how to:

- List and describe the different stages of the system development life cycle (SDLC)
- Identify the role of data modeling in the system development life cycle
- Relate the project tasks to the different stages of the system development life cycle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