

Web Development Using Application Frameworks

Logical Database Design Assignment

Instructions

Overview

Create a logical database design document for the EZU application. Use one of the following conceptual data models as your starting point:

- My solution to the Conceptual Data Model Assignment
- Your solution to the Conceptual Data Model Assignment

Deliverables

You will be submitting a logical database design expressed as an entity-relationship diagram (ERD).

Scope of Data Model

The scope of the logical database design that you create in this assignment will depend upon which of the exercises you decide to complete. The two alternative scopes are:

1. Exercise 1 (Required)

Include all functionality of the EZU application that is demonstrated in the Exercise 1 Requirements Video. This will include the full C-R-U-D functionality for all parts of the EZU database. In the Exercise 1 Requirements Video, I will demonstrate that functionality.

2. Exercise 2 (Optional Challenge Exercise)

Also include all functionality of the EZU application that is demonstrated in the Exercise 2 Requirements Video. This will include all EZU features related to authentication and authorization. In the Exercise 2 Requirements Video, I will demonstrate that functionality.

Steps of the Logical Database Design Process

To create your logical database design, follow the steps in the outline below. Please note that these steps are explained in detail in my Logical Database Design lecture. They are also illustrated in the tutorial video that accompanies this assignment.

- 1) Make final improvements to conceptual data model based on stakeholder feedback.
 - a) Missing or incorrect entities
 - b) Missing or incorrect relationships
 - c) Missing or incorrect attributes
 - d) Missing or incorrect unique identifiers
 - e) Missing or incorrect use of supertypes/subtypes

- 2) Normalize the data model.
 - a) Remove repeating elements.
 - i) Lists
 - ii) Repeating attributes
 - iii) Repeating attribute groups
 - b) Remove redundant attributes.
 - i) Truly redundant attributes
 - ii) Attributes that can be derived
 - c) Remove redundant relationships.
 - d) Relocate misplaced attributes.
 - e) Relocate misplaced relationships.
 - f) Replace free-form text attributes with relationships to lookup entities.

- 3) Adapt design to relational database technology.
 - a) Resolve many-to-many relationships.
 - b) Convert unique identifiers to primary keys.
 - c) Add foreign key attributes.

Tools

The ERD should be drawn with LucidChart.

Length

One ERD document should be submitted.

If you are planning to complete only Exercise 1, then don't include the requirements related to authentication and authorization in the ERD. When the diagram is complete, create a PDF copy to submit.

Please submit only 1 PDF document. If you are doing both Exercise 1 and Exercise 2, then your PDF document will be bigger. If you are only completing Exercise 1, then your PDF document will be smaller. In any case, only submit 1 PDF document.

Format

Please submit a single PDF document.

File Naming

The name of the file that you submit should include both your name and the name of the assignment. It should follow the form:

surname_givename_logical_database_design.pdf

If I were to submit this assignment, I would name the file as follows:

trainor_kevin_logical_database_design.pdf

PLEASE NOTE: All file names must be in lower case. Deductions will be made for submissions that do not conform to this standard.

Due Date

Please see the Weekly Schedule for the date and time when this assignment is due.

Last Revised

2022-02-07