Banking Management Service

CS 4400: Introduction to Database Systems
Course Project: Spring 2022 Semester

Project Purpose

In this project you will analyze, specify, design, implement, and document an online system based on the provided scenario description. You are required to use the classical methodology for relational database development. The system will be implemented using a relational DBMS that supports standard SQL queries. You will use your localhost MySQL Server (Version 8.0 or above) to implement your database and the application. You cannot use any other software like Microsoft Access or SQLite. Please ask the Instructors and TAs if you have questions.

Project Phases

Inputs (we provide to you…)

Phase I	Phase II	Phase III	Phase IV *(optional)*
• Scenario Description • Sample Data Elements	• Enhanced ERD (EERD) • Initial Data Set (in a Non-Normalized Format)	• Physical Database Schema with Initial Data Set • View & Stored Procedure Shells	• User Interface Specification
• Enhanced Entity Relationship Diagram (EERD) • List of Assumptions (optional)	• Relational Schema • Physical Database Schema with Initial Data Set • Unhandled Exceptions List	• Implemented Views & Stored Procedures • Any Supporting Views and Related Structures	• Fully Functional Application integrated with Database System • Application Source Code

Outputs (…you turn in to us)

Phase I Directions

In Phase I, your task is to review the scenario description we've provided, and then translate the requirements that you've identified into an (Enhanced/Extended) Entity-Relationship Diagram (EERD). Your EERD must follow these specifications and guidelines:

[1] Your EERD must reflect the requirements presented in the scenario description as completely as reasonably possible using the EERD modeling features mentioned below.

[2] You may use any of the features described in Chapters 3 & 4 of the course textbook that were covered in class, to include: strong entities; candidate (full) and partial keys (i.e., discriminants); weak entities & identifying relationships; one-to-one, one-to-many and many-to-many binary relationships with combinations of total and partial participation; ternary relationships; attributes of varying types

(e.g., simple, composite, multivalued, derived); superclass & subclass (i.e., is-a) relationships; and union relationships.

[3] You may not use EERD features drawn from other sources, textbooks, references, etc.

[4] There is NOT a single, "perfect/textbook" solution for this problem. You might have to make choices (i.e., "judgment calls") when selecting which modeling features to include in your diagram, and when determining how you will structure and connect those features.

[5] We will assess the correctness of your EERD by examining three main aspects of your design:

- Completeness: Does your design allow you to store the entity and relationship information as required by the scenario description?
- Constraints: Does your design reflect the relationships and constraints between the entities as required by the scenario description?
- Conciseness: Does your design avoid unnecessary features such as (but not limited to) unused entities, relationships, and attributes?

[6] If you feel that there are aspects of the scenario description that are ambiguous, then you are allowed to add additional assumptions. For each assumption you must provide the following information:

- The specific aspect of the scenario description that was unclear
- How you decided to resolve the conflict with respect to your design choices
- How the decision impacted your design

Assumptions are not allowed to contradict nor "override" any of the explicit or implicit requirements presented in the scenario description.

Submission Checklist

Each team needs **one of its members** to upload the deliverables to Canvas. The other team members should log in and check to ensure that all files have been uploaded correctly. Please include your team numbers in the file names.

Your submission should include the following deliverables compiled into **one pdf document**:

- A file named **cs4400_phase1_schema_team#.pdf** containing your Enhanced Entity-Relationship Diagram (EERD), and (optionally) your List of Assumptions

Version History

Version	Date	Notes
0	February 1, 2022	Initial Release