Project 2 – Library Management System Database

In this project, you will design and implement a database for a library management system. You will got through 3 phases, 1st is to create an ER schema diagram, phase 2 implement it in SQL and finally in phase 3 to create queries and a GUI application of the **Library Management System** company.

Assume the following requirements were collected for the database application:

1. The database keeps track of BOOKs. Each Book has a unique IdNo (assume this is a unique integer generated by the system for each new BOOK such as 1, 2, 3, …), a title (assume this is a string, such as "The mind of the leader" or "Atomic Habits"), an author, and a publishers name (also a string).
2. Each PUBLISHER has a phone number and an address associated with it.
3. In this system there are several LIBRARY_BRANCHES, each branch has a unique Id, a name, and an address.
4. There are multiple BOOK_COPIES of every BOOK at different LIBRARY_BRANCHES.
5. The Library Management System also keeps track of BORROWERs of BOOKs, each BORROWER has a card, name, address, and phone number.
6. BORROWERs can borrow BOOKs from any LIBRARY_BRANCH. The Library Management System keeps track of the BOOKs' date checked out and the return date and if returned or not.

Phase 1:

You will first design an ER/EER schema diagram based upon the 'Library Management System' database requirements specified above by using the notation covered in your book. Don't forget to design the cardinality ratios and the participation between entities and relationships. Also, as part of this assignment, you should identify any missing or incomplete requirements and explicitly state them. You should also explicitly state any assumptions you made that were not part of the requirements listed above.

Next, you need to convert/map your ER/EER schema diagram to a relational database schema by using the notation covered in your book. Also, don't forget to denote primary and foreign keys. You should state the choices you made during the ER-to-Relational mapping and the reasons for your choices.

You should draw your ER/EER schema diagram and the relational database schema using a drawing tool of your choosing to create a computer image file or use any available database conceptual design tool.

For this phase, you need to submit only **ONE** document file (.pdf or .docx) with:

- your ER/EER schema diagram and an explanation of your design choices,
- your Relational Database Schema and an explanation of your design choices, and the honor code.

  Name your file as teammate1lastname_teammate2lastname.docx. Make sure that your document looks professional. For example, you could have a cover page, an introduction (a few lines what is about), the mini-world description, references, etc.

HONOR CODE

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or that I contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.