

Library System Programming Project

CS-4347 Database Systems (Milestone 1)

Description

This SQL programming project involves the creation of a database host application that interfaces with a backend SQL database implementing a Library Management System. Users of the system are understood to be librarians (not book borrowers).

This is a team project.

Milestone 1

The first milestone involves normalizing the given data into *Third Normal Form* (3NF). You are given two plain text CSV files (`books.csv` and `borrowers.csv`). The files should be normalized into separate files that are compatible with the schema defined below. Note that initially you do not have any information about records in either `book_loans` or `fines` tables.

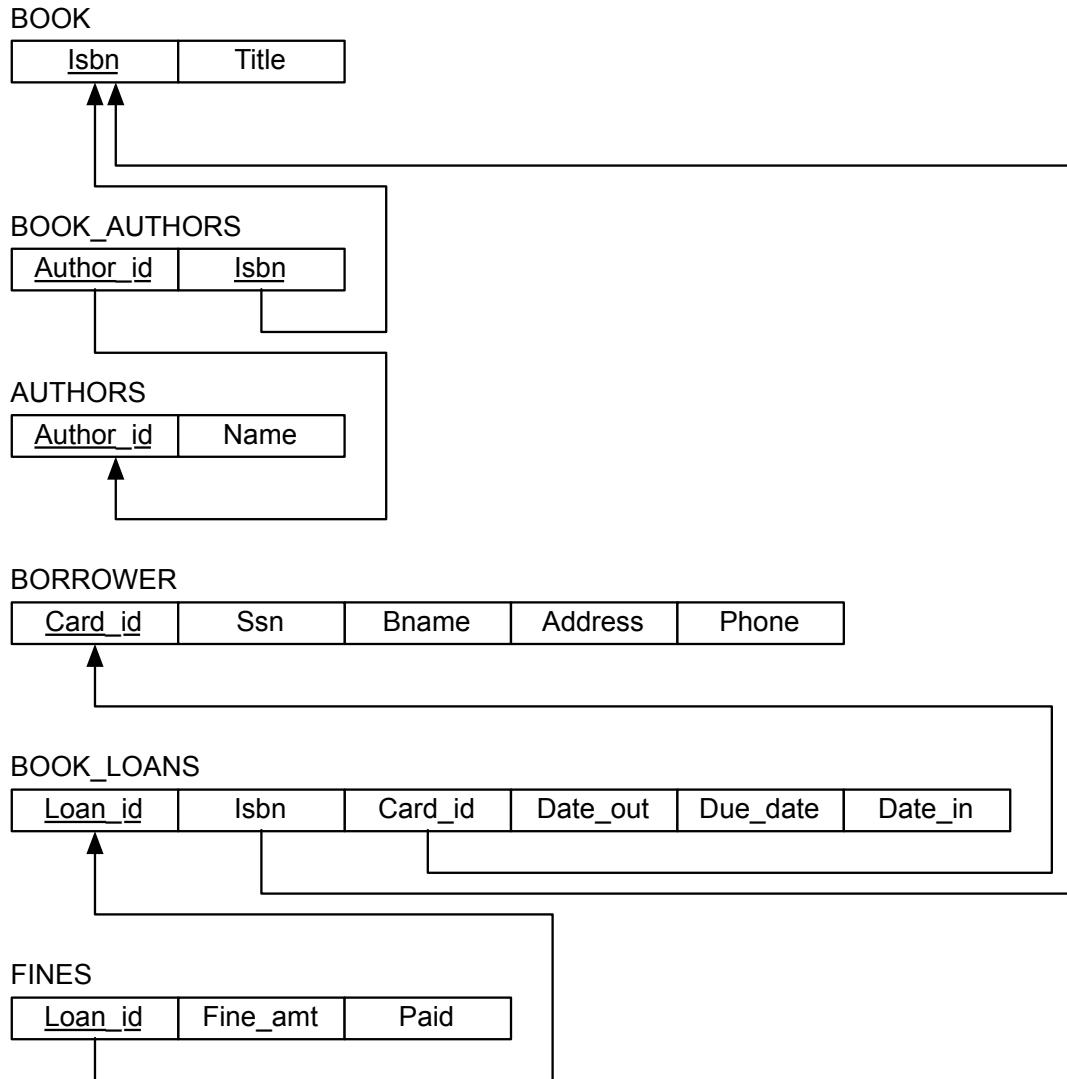
Your team's submission should contain five items:

- 1) `book.csv`
- 2) `book_authors.csv`
- 3) `authors.csv`
- 4) `borrower.csv`
- 5) The source code to the file or files that performs the normalization

All files should be bundled into a single archive file for upload (zip, gzip, or tar).

Schema

The schema for the library database is derived from (but NOT the same as) the library schema in the textbook (Figure 6.6). The *actual* schema used for this project is provided below. You are permitted to modify or augment this schema provided that your system (a) is backwards compatible with the given schema, and (b) adheres to the written requirements. As long as your system supports the documented functionality, you may add any features you deem useful.



Data

- All data is provided in plain text CSV files. Note that there is *not* a one-to-one, file-to-table correspondence. The Milestone 1 part of your system design task is to map (i.e. normalize) these data onto your schema and tables.
- All book id's are 10-character ISBN numbers (i.e. some contain alpha characters). Note that some may contain leading zeroes. These are part of ISBN and should *not* be truncated!
- Both AUTHORS.Name and BORROWER.Bname are a single string that represents a full name. You may choose to make these derived attributes and store the first, middle, and last names in additional separate attributes. All titles and person names should use the same case conventions after normalization. Note that your given source data does not respect any person naming conventions.