

Library Management System

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1. Introduction

The purpose of this Design Document is to present the system design at a level that can be directly traced to the specific system objective along with providing more detailed data, functional, and behavioral requirements. This Design Document will verify that the current design meets all of the explicit requirements contained in the system model as well as the implicit requirements desired by the customer.

2. Database Schema

The database schema used by the project is almost similar to what was provided in the first place. There are a few minor changes that I made in the schema.

I have introduced 3 new tables:

1. Users table
2. Currently_borrowed table
3. User_profile table

Users table has the fields:

- a) Username(primary key)
- b) Date_joined
- c) Password
- d) Fname
- d)Lname

Currently_borrowed stores the books that are currently on loan and haven't been returned as of yet. It has 6 columns:

- a) id(primary key)
- b) Fine
- c) Book(Foreign key of book)
- d) Branch(Foreign key of Library Branch)
- e)User Profile(Foreign key of User Profile)
- f) Date out

UserProfile is the table which stores the profile of all the users, it has 7 columns:

- a) User_id
- b) Card_no
- c) Address
- d)Fname
- e)Lname
- f)Phone_no
- g) SSN

Card Number Generation Technique:

Let temp=Last 6 digits of the largest card_no

The new card number will start with letters “ID” followed by 1+temp value.

So for example the max value of card_no in our user's table is ID001003

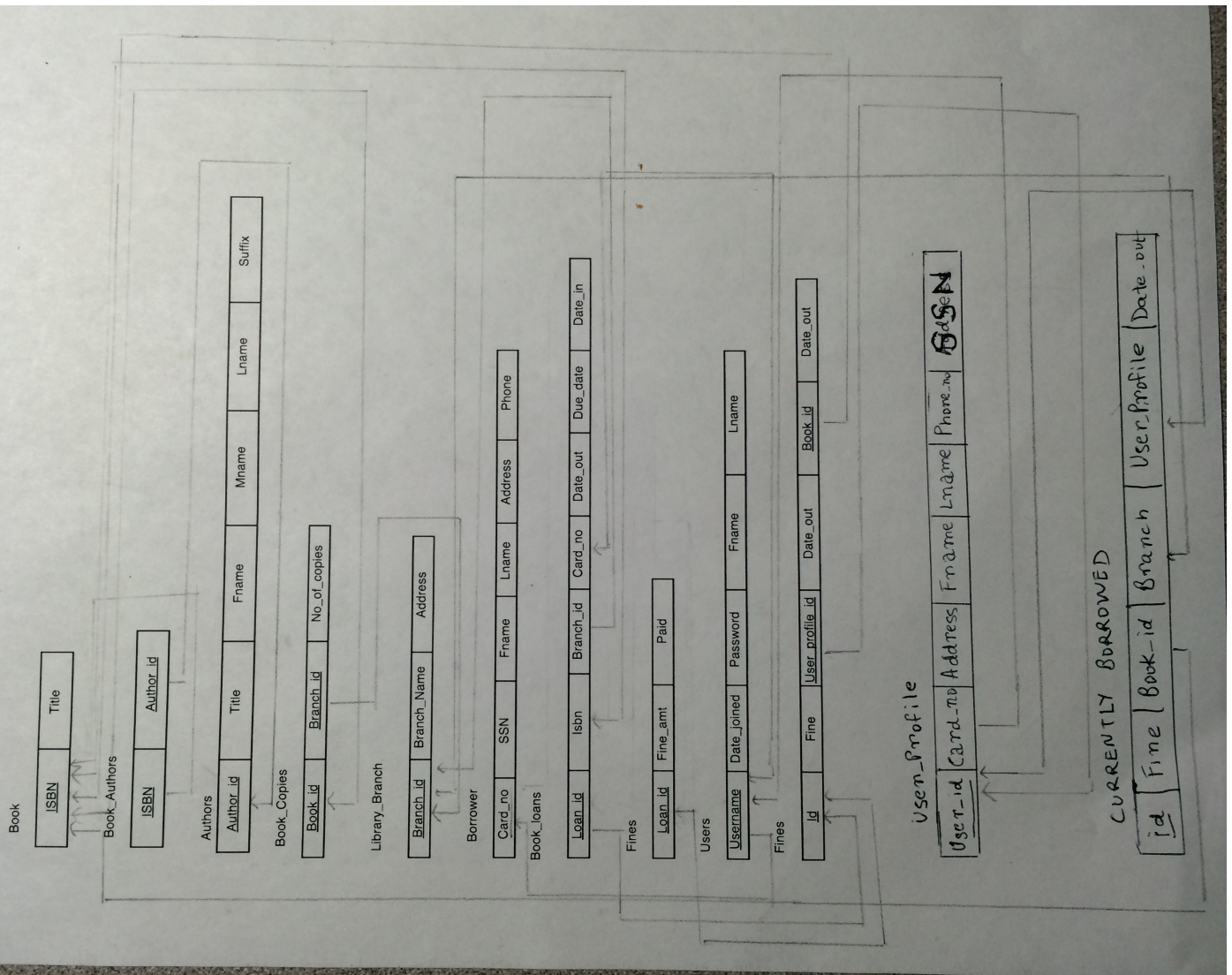
The number of the next generated card will be ID001004

Assumptions:

In order to generate a card number a user will have to register via the website. A unique card number will then be generated for the user. Thus all the previously entries in the borrower's table are redundant in this case.

The Fines table stores the fine collected after the book has been returned. The Book_loans table stored the transactions which have been completed.

Database Architecture



Architecture

