# Architecture

# Database

## Entities:

1. **tbl\_users**
   * Attributes:
     + user\_id (Primary Key)
     + name
     + pwd
     + identity
     + email
     + phone
     + role
     + created\_by
     + created\_dt
2. **tbl\_books**
   * Attributes:
     + book\_id (Primary Key)
     + title
     + author
     + ISBN
     + genre
     + year\_published
     + status
     + created\_by
     + created\_dt
     + updated\_by
     + updated\_dt
3. **tbl\_borrow\_hist**
   * Attributes:
     + hist\_id (Primary Key)
     + book\_id (Foreign Key to tbl\_books)
     + user\_id (Foreign Key to tbl\_users)
     + borrow\_dt
     + return\_dt
     + status
     + created\_by
     + created\_dt

## Relationships:

* **tbl\_borrow\_hist** references **tbl\_books** and **tbl\_users** through the foreign keys book\_id and user\_id.
  + **Relationship 1**: Between **tbl\_users** and **tbl\_borrow\_hist**: One user can have many borrow history records, but each borrow record is associated with one user.
    - Cardinality: **One-to-Many** (One user can borrow many books).
  + **Relationship 2**: Between **tbl\_books** and **tbl\_borrow\_hist**: A book can be borrowed many times, and each borrowing record is associated with one book.
    - Cardinality: **One-to-Many** (One book can appear in many borrow records).

# ER Diagram

 **tbl\_users** has a one-to-many relationship with **tbl\_borrow\_hist** via user\_id.

 **tbl\_books** has a one-to-many relationship with **tbl\_borrow\_hist** via book\_id.

A screenshot of a computer screen

AI-generated content may be incorrect.

* The **tbl\_users** and **tbl\_books** tables are linked by **tbl\_borrow\_hist** via their respective foreign keys (user\_id, book\_id).
* Each **borrow\_hist** record ties together a **book** and a **user**, capturing details such as borrow date, return date, and status.

# API

# UI mock-ups

## 4.1 Register and Login

A screenshot of a computer

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