The database for the Book Cataloging System is structured to manage user accounts, books, reviews, favorites, and bookshelves. Below is a detailed description of each table, its structure, and its purpose.

**1. Users Table**

The users table stores user account information and serves as the primary means of identifying and authenticating users within the system.

* **id**: INT NOT NULL AUTO\_INCREMENT
  + Purpose: Uniquely identifies each user.
  + Additional Info: Primary Key.
* **username**: VARCHAR(50) NOT NULL
  + Purpose: Stores the user's chosen username.
* **email**: VARCHAR(100) NOT NULL
  + Purpose: Stores the user's email address.
* **password**: VARCHAR(255) NOT NULL
  + Purpose: Stores the hashed password for user authentication.

**2. Books Table**

The books table stores information about the books in the catalog. This table helps manage the collection of books available to users.

* **id**: INT NOT NULL AUTO\_INCREMENT
  + Purpose: Uniquely identifies each book.
  + Additional Info: Primary Key.
* **title**: VARCHAR(100) NOT NULL
  + Purpose: Stores the title of the book.
* **author**: VARCHAR(100) NOT NULL
  + Purpose: Stores the author of the book.
* **genre**: VARCHAR(50)
  + Purpose: Stores the genre of the book.
* **description**: TEXT
  + Purpose: Stores a brief description of the book.

**3. Reviews Table**

The reviews table stores user reviews for books, allowing users to provide feedback and rate the books they have read.

* **user\_id**: INT NOT NULL
  + Purpose: Identifies the user who wrote the review.
  + Additional Info: Foreign Key referencing users(id).
* **book\_id**: INT NOT NULL
  + Purpose: Identifies the book being reviewed.
  + Additional Info: Foreign Key referencing books(id).
* **rating**: INT
  + Purpose: Stores the rating given by the user (typically on a scale from 1 to 5).
* **comment**: TEXT
  + Purpose: Stores the review comment written by the user.

**4. Favorites Table**

The favorites table stores information about the books that users have marked as their favorites. This allows users to quickly access their preferred books.

* **user\_id**: INT NOT NULL
  + Purpose: Identifies the user who favorited the book.
  + Additional Info: Primary Key, Foreign Key referencing users(id).
* **book\_id**: INT NOT NULL
  + Purpose: Identifies the book that was favorited.
  + Additional Info: Primary Key, Foreign Key referencing books(id).

**5. Book Shelf Table**

The book\_shelf table stores information about the bookshelves created by users. Each bookshelf can contain multiple books.

* **id**: INT NOT NULL AUTO\_INCREMENT
  + Purpose: Uniquely identifies each bookshelf entry.
  + Additional Info: Primary Key.
* **user\_id**: INT NOT NULL
  + Purpose: Identifies the user who owns the bookshelf.
  + Additional Info: Foreign Key referencing users(id).
* **book\_id**: INT NOT NULL
  + Purpose: Identifies the book on the bookshelf.
  + Additional Info: Foreign Key referencing books(id).

**Summary**

This database schema is designed to efficiently manage and organize data related to users, books, reviews, favorites, and bookshelves. Each table is structured to capture specific details relevant to the Book Cataloging System, ensuring robust data management and seamless integration within the web application.