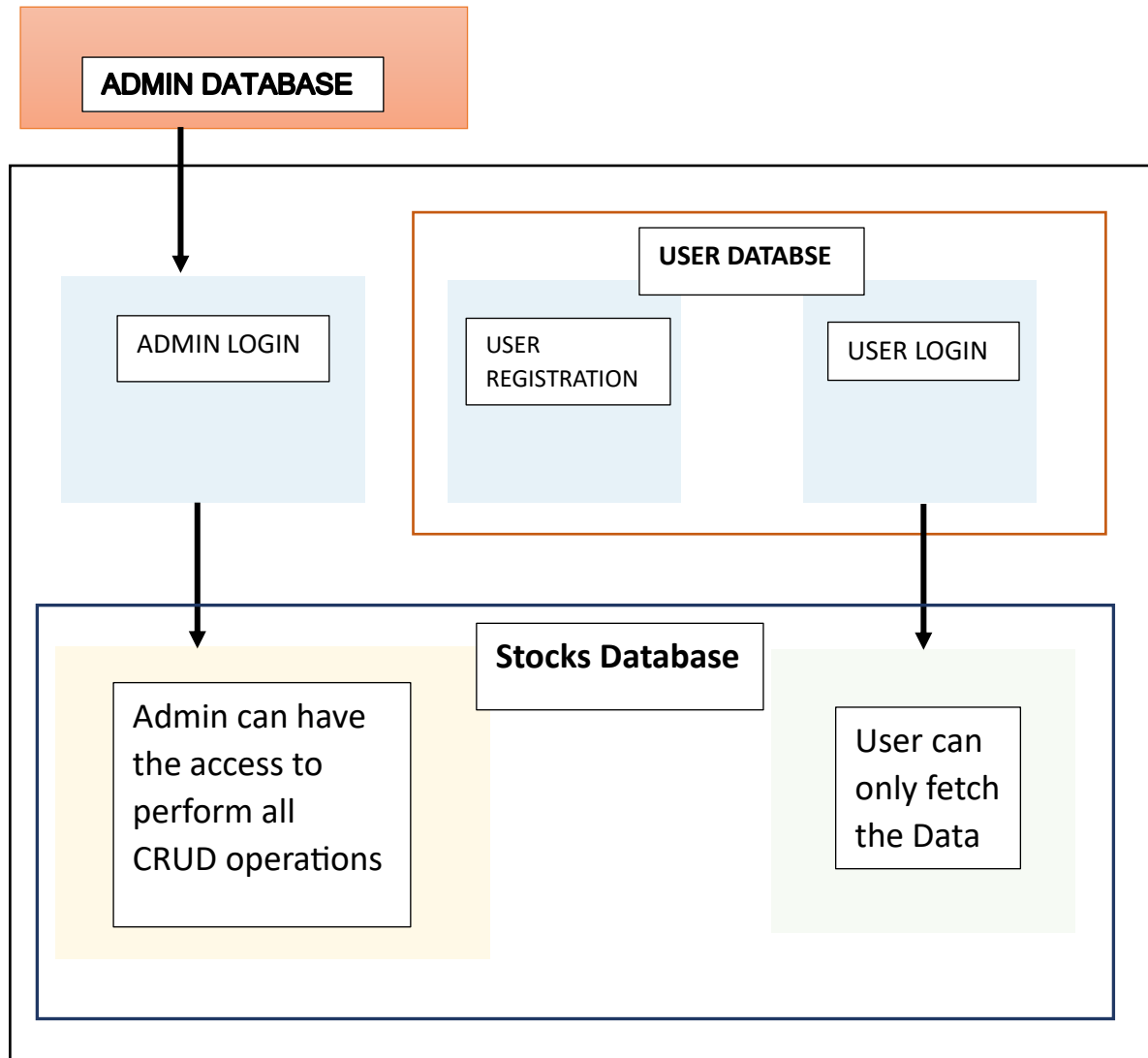


StockXplorer

Architecture:



Database Structure

The SQLite database consists of three main tables:

STOCK DATA:

Ticker (TEXT)

Date (TEXT)
Open (REAL)
High (REAL)
Low (REAL)
Close (REAL)
AdjClose (REAL)
Volume (INTEGER)
Unique constraint on Ticker and Date

USERS

user_id (INTEGER, Primary Key)
username (TEXT)
password (TEXT)

ADMINS

admin_id (INTEGER, Primary Key)
username (TEXT)
password (TEXT)

1. Databases:

- Stock Database (`stocks.db`): Stores stock-related information, including the stock entries with details such as ticker, date, open, high, low, close, adjclose, and volume.
- Users Database (`users.db`): Stores user information for regular users.
- Admins Database (`admins.db`): Stores user information for administrators.

2. Tables:

- stock Table: Represents the stock entries with columns for ticker, date, open, high, low, close, adjclose, volume. Uses a unique constraint for the combination of Ticker and Date.
- Users Table: Stores user information with columns for user_id (primary key), username, and password.
- Admins Table: Stores admin information with columns for admin_id (primary key), username, and password.

3. Functions:

- `authenticate`: Checks user credentials based on the user type (admin or user).
- `create_user`: Creates a new user and inserts their information into the Users table.
- `admin_operations`: Provides a menu for admin CRUD (Create, Read, Update, Delete) operations on stock entries.
- `create_stock_entry`: Adds a new stock entry into the stock table.
- `read_stock`: Retrieves historical stock data based on user input (ticker and end date).
- `update_stock_entry`: Allows the user to update stock entries for specific columns (open, high, low, close, adjclose, volume).
- `delete_stock_entry`: Deletes a stock entry from the stock table.
- `admin_registration`: Allows the registration of new administrators.
- `user_registration`: Allows the registration of new users.
- `main_menu`: The main menu for the program, offering options for admin login, user login, user registration, and exit.

4. Execution:

- The program starts with the `main_menu` function, where users can choose between admin login, user login, user registration, or exiting the program.
- Depending on the choice, users are directed to relevant authentication, registration, or CRUD operation functions.