**Personal Finance Management Application Documentation**

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**1. Introduction**

The **Personal Finance Management Application** is a command-line tool designed to help users track income and expenses, set budgets, and generate financial reports. It ensures easy data management with SQLite database integration.

**2. Project Overview**

**Project ID**: UY6758GH

This project provides a straightforward way to manage personal finances, enabling users to:

* Record transactions.
* Set and view budgets.
* Generate reports on financial activities.

**3. Features**

* **User Registration and Login**: Securely register and log in using hashed passwords.
* **Add Transactions**: Record income and expense transactions with categories and descriptions.
* **View Transactions**: Display all transactions of a logged-in user.
* **Set and View Budgets**: Define and retrieve budget limits.
* **Generate Reports**: Summarize monthly income, expenses, and savings.
* **Backup and Restore**: Safeguard data with backup and restore functionality.

**4. System Requirements**

* **Operating System**: Windows, macOS, or Linux
* **Python Version**: 3.7 or later
* **Dependencies**: Listed in requirements.txt

**5. Installation Guide**

1. **Clone the Repository**:

git clone https://github.com/your-username/Personal\_Finance\_App.git

1. **Navigate to the Project Folder**:

cd Personal\_Finance\_App

1. **Install Dependencies**:

pip install -r requirements.txt

1. **Set Up the Database**: Run the script to initialize the database:

python setup.py

1. **Run the Application**:

python main.py

**6. Usage Guide**

**6.1 Main Menu**

Upon starting the application, you’ll see the main menu:

1. Register
2. Login
3. Exit

**6.2 User Menu**

Once logged in, the following options are available:

1. Add Transaction
2. View Transactions
3. Generate Report
4. Set Budget
5. View Budget
6. Logout

**7. Database Structure**

The SQLite database contains three tables:

**7.1 Users Table**

| **Column Name** | **Data Type** | **Description** |
| --- | --- | --- |
| user\_id | INTEGER | Unique user ID |
| username | TEXT | User’s name |
| password | TEXT | Hashed password |

**7.2 Transactions Table**

| **Column Name** | **Data Type** | **Description** |
| --- | --- | --- |
| id | INTEGER | Unique transaction ID |
| user\_id | INTEGER | Associated user ID |
| amount | REAL | Transaction amount |
| category | TEXT | Transaction category |
| transaction\_type | TEXT | Income or Expense |
| description | TEXT | Additional details |

**7.3 Budgets Table**

| **Column Name** | **Data Type** | **Description** |
| --- | --- | --- |
| id | INTEGER | Unique budget ID |
| user\_id | INTEGER | Associated user ID |
| budget\_amount | REAL | Budget amount |

**8. Code Overview**

**8.1 Main Modules**

* **main.py**: Entry point of the application.
* **transactions.py**: Handles all transaction-related functionalities.
* **setup.py**: Initializes the database.

**8.2 Key Functions**

* add\_transaction(user\_id, amount, category, transaction\_type, description)
* view\_transactions(user\_id)
* generate\_report(user\_id)
* set\_budget(user\_id, budget\_amount)
* view\_budget(user\_id)

**9. Testing the Application**

1. **Run Unit Tests**:

python -m unit tests/test\_transactions.py

1. **Manual Testing**:
   * Register and log in as a new user.
   * Add transactions and verify database entries.
   * Set and view budgets.
   * Generate a report and confirm calculations.

**10. Future Enhancements**

* Add a graphical user interface (GUI).
* Integrate advanced data visualization for reports.
* Provide multi-user support with admin roles.
* Include automated reminders for budget limits.

**11. Contributors**

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**GitHub Repository**: https://github.com/SORNAPPRIYARAGUNATHAN/Personal\_Finance\_App/tree/main