

CG BANKING DIGITAL SYSTEM

INTRODUCTION : CREATE A DIGITAL BANKING SYSTEM WITH AN IN-BUILT ARTIFICIAL INTELLIGENCE ("REXA")

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Overview

A Streamlit-based banking application with:

- ✓ **User Authentication** (Login/Logout)
- ✓ **Dashboard** (Balance, Spending Charts)
- ✓ **Fund Transfers**
- ✓ **Bill Payments**
- ✓ **Transaction History**
- ✓ **AI Chatbot (Rexa)** for banking queries

Key Components

1. CGBankDatabase

- Manages bank data (users, transactions, loans, schemes).
- Key Methods:**
 - `get_user()` → Fetch user details
 - `verify_user()` → Check login credentials
 - `get_user_transactions()` → Fetch transaction history
 - `get_loan_products()` → Get loan details

2. Rexa (AI Chatbot)

- Understands banking queries using **NLP & keyword matching**.

•**Features:**

Answers balance inquiries

Explains loan/scheme details

Uses **Ollama LLM** for complex queries





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3. CGBankApp (Main App)

- **Pages:**
 - **Login** → User authentication
 - **Dashboard** → Balance, spending charts, quick actions
 - **Transfer** → Send money
 - **Bills** → Pay utility bills
 - **Transactions** → View history
 - **Chatbot** → Full-page AI assistant
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How It Works

1. User Flow

1. **Login** → Enter credentials (rahul/password123 or cravin/mypassword).
2. **Dashboard** → Shows balance, spending trends, and quick actions.
3. **Perform Actions:**
 -  **Transfer Money** → Send funds to another account.
 -  **Pay Bills** → Clear utility bills.
 -  **Transactions** → View past transactions.
 -  **Chat with Rexa** → Ask banking questions.

2. AI Chatbot (Rexa)

- **Understands:**
 - "What's my balance?"
 - "Show recent transactions"
 - "Tell me about home loans"
 - "Explain Modi Scheme"
 - Uses **fuzzy matching** for similar queries.
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Technical Setup

1. Dependencies

```
pip install streamlit pandas plotly ollama
```

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2. Run the App

```
streamlit run cgbank_app.py
```

3. Data Structure (cgbank_data.json)

- Contains:
 - Users** (username, password, balance)
 - Transactions** (mock data)
 - Loans & Schemes** (details)
 - Bank Info** (branches, services)
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Key Takeaways

✓ **For Users:** Simple, AI-powered banking.

✓ **For Developers:**

- Modular OOP design** (easy to extend).
 - Session management** (keeps user state).
 - Streamlit UI** (responsive & interactive).
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Example Queries for Rexa

User Input	Bot Response
"What's my balance?"	Shows account balance
"Recent transactions?"	Lists last 5 transactions
"Tell me about car loans"	Explains car loan details
"How to apply for Modi Scheme?"	Gives eligibility & benefits

Conclusion

This app demonstrates a **modern banking system** with:

- User-friendly UI** (Streamlit)
- AI-powered assistance** (Ollama + NLP)

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- **Core banking features** (Transfers, Bills, History)

Future Improvements:

- Connect to real banking APIs
 - Add stronger security (JWT/OAuth)
 - Support mobile responsiveness
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