Here’s a **comprehensive list of prompts** to feed into **Lovable**, structured in the voice of a **software developer** building a financial automation tool. These prompts are meant to guide Lovable’s AI to generate the correct logic, integrations, and data flow.

**🧠 Goal**

**Connect to my Bank of America account, retrieve last month's transactions, and categorize them into revenue and expense categories using machine learning.**

**🛠️ Step-by-Step Prompts for Lovable**

**🔐 1. Authentication with Bank of America**

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Create a secure OAuth 2.0 authentication flow to connect to a user's Bank of America account using Plaid or another financial data aggregator.

**Optional Follow-up Prompt:**

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Add fallback for manual CSV import in case Bank of America connection fails.

**📥 2. Fetch Last Month’s Transactions**

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Write a function that fetches all checking and credit card transactions from the authenticated Bank of America account for the last 30 days.

**Optional Enhancement:**

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Include logic to remove duplicate or pending transactions.

**🧹 3. Clean and Normalize the Transaction Data**

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Clean the transaction data by standardizing merchant names, removing special characters, and formatting amounts as floats. Output the data as a clean JSON object.

**🧠 4. Use Machine Learning to Categorize Transactions**

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Create a machine learning classifier to automatically categorize each transaction as either revenue or expense and assign subcategories like 'Groceries', 'Utilities', 'Salary', 'Dining', etc.

**Optional Prompt:**

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Use an open-source pre-trained model or train a basic scikit-learn model on labeled transaction data.

**🗂️ 5. Organize Transactions into Categories**

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Group transactions by their assigned categories and calculate the total amount for each category.

**📊 6. Summarize Revenue and Expenses**

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Create a summary report that shows total income and expenses for the past month, along with a breakdown by category.

**📤 7. Export and Display the Report**

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Export the categorized transactions and summary as a downloadable CSV and display a bar chart of expenses vs. income by category.

**🔁 8. Enable Monthly Automation**

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Schedule this workflow to automatically run on the 1st of each month and email the results to the user.

**🧱 Optional UI Prompts**

If you're building an app interface in Lovable:

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Design a dashboard screen that shows the categorized transactions for the past 30 days, with filter and search capability.

**🚨 Security Prompt**

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Ensure that all financial data is encrypted at rest and in transit using AES-256 and HTTPS/TLS protocols.

Would you like me to turn this into a single combined master prompt, or generate starter code for any of the sections (e.g., ML categorization or Plaid integration)?

**You said:**

yes

**ChatGPT said:**

Here’s a **master Lovable prompt** combining all the steps into a single, streamlined instruction you can paste into Lovable’s AI interface to scaffold the entire system:

**💬 Master Lovable Prompt (Paste into the AI in Lovable)**

text

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Create a secure financial automation app that connects to a user's Bank of America account using Plaid (or fallback CSV upload), fetches all transactions from the past 30 days, and categorizes them into revenue and expense buckets using machine learning. Use a pre-trained ML model (or train one using scikit-learn or TensorFlow Lite if needed) to classify transactions into categories such as "Groceries", "Dining", "Utilities", "Salary", "Transportation", etc.

The app should:

1. Authenticate users using OAuth 2.0.

2. Retrieve and clean transaction data (remove duplicates, normalize merchant names).

3. Run ML-based classification of transactions into categories.

4. Group transactions by category and calculate totals.

5. Display a dashboard with bar charts comparing income and expenses.

6. Export both the full transaction list and summary as CSV files.

7. Automatically run this process every month and email users the results.

8. Encrypt all financial data using AES-256 and ensure secure transmission via HTTPS.

The app interface should include:

- A login/connect button for Bank of America

- A dashboard showing categorized transactions for the past month

- Filters for category/date/search

- Export/download buttons for CSV reports

Use Python for backend logic and React or Flutter for the mobile/web frontend.

**✅ Output Expectations**

After submitting this to Lovable, you should get:

* Secure authentication code (OAuth + Plaid).
* ML categorization logic (probably scikit-learn or TensorFlow).
* Clean UI scaffolding for dashboards and export buttons.
* Monthly scheduler (via cron job or background worker).
* Data encryption and secure API setup.

Would you like a code starter repo for the ML categorization component or for the Plaid integration logic?