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Diploma Studies  
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Subject: PROJECT II (09CT0602)

Domain of Project : AI

Title: Finance AI

Guide Name: Prof. Vishalsinh Gohil Sir

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# 1. Problem Statement

## **Problem Statement:**

- People struggle to track expenses, receipts, invoices, and transactions manually.
- Most finance apps require heavy manual input and lack personalized insights.
- Households and small businesses miss spending patterns and face tax-reporting difficulty.
- There's no simple tool that auto-reads financial documents, organizes data, and gives smart suggestions.

## 2. Project Definition

### **Project Title:**

**Customized finance AI Assistant using ML to track finance and get insights.**

Finance AI Assistant is an AI-driven system that automatically extracts and organizes financial data. It analyzes expenses, generates real-time insights, and prepares reports. Using machine learning and NLP, it identifies patterns and gives personalized financial insights. The system serves as a virtual finance assistant for individuals and small businesses.

### 3. Literature Survey

**Literature Survey Summary Table:**

<b>Existing Work / System</b>	<b>Methods Used</b>	<b>Strengths</b>	<b>Limitations / Gaps</b>
<b>Google Document AI</b>	OCR + ML-based field extraction	High accuracy for invoices/receipts; ready-to-use	Not personalized
<b>Microsoft Azure Form Recognizer</b>	OCR + pretrained templates + ML	Good automation; supports tables & key-value pairs	Template-dependent; limited financial insights
<b>LayoutLM (Microsoft Research)</b>	Transformer model combining text + layout + visual info	Strong document understanding; good for custom training	Needs labeled data; not end-to-end
<b>Donut (Naver Clova)</b>	OCR-free Transformer for document-to-text	Avoids OCR errors; handles varied layouts	Sensitive to low-quality photos; training required

# 4. Objectives of Project

## **Main Objective:**

- Build an AI tool that reads financial documents automatically and gives simple, clear money insights.

## **Sub-Objective:**

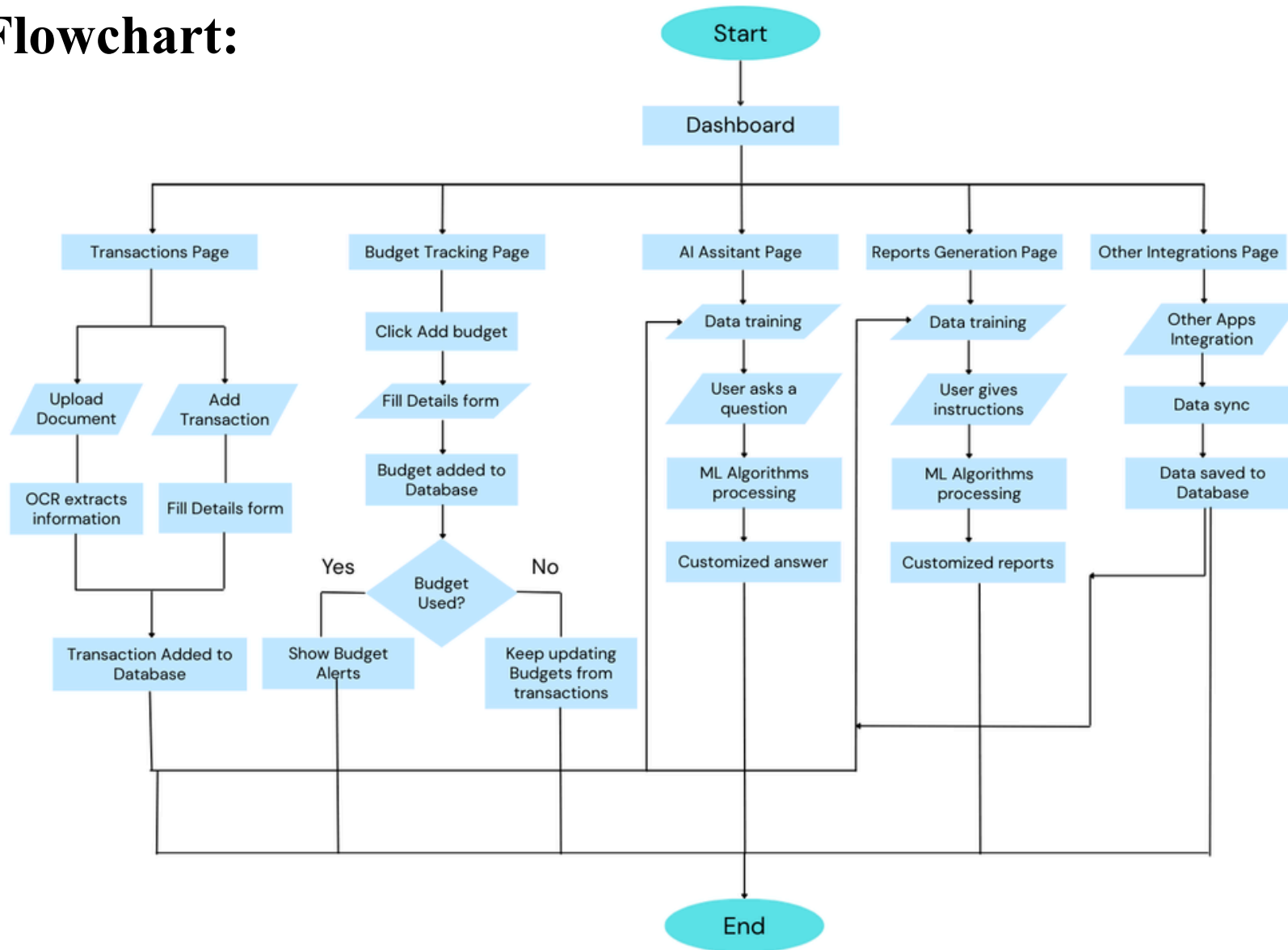
- Automatically pull data from receipts, invoices, and bank statements.
- Sort and analyze expenses without manual work.
- Give smart tips for budgeting, saving, and tax prep.

## **Novelty:**

- Fully automatic (no typing needed).
- Gives personalized finance advice, not just expense lists.
- Made for normal users and small businesses, not experts.

# 5.Flowchart

## Flowchart:



# 6. Technology used

## **Frontend Technology**

- HTML – Structure of web pages
- CSS – Styling and layout
- JavaScript – Interactive elements and dynamic UI

## **Backend Technologies**

- Python – Core logic and processing
- Flask – Lightweight web framework for routing, APIs, and server-side integration

## **Database**

- SQLite – Simple, fast, file-based database for storing transactions, users, and insights

## **AI & Data Processing**

- NLP (Natural Language Processing) – Extracting text and key fields from receipts/invoices
- Machine Learning – Categorizing expenses, identifying patterns, and generating insights



# 7. Project Timeline and Progress

## Project Timeline and Progress:

Task / Module	Timeline	Status	Progress
Project planning & requirement analysis	Week 1	Completed	100%
UI/HTML page creation (index, budgets, insights, reports, upload, etc.)	Week 2	Completed	100%
Backend setup & routing	Week 3	Completed	100%
Document upload & processing module	Week 4	Completed	100%
NLP/ML extraction for receipts & invoices	Week 5	Completed	100%
Expense categorization & transaction management	Week 6	Completed	100%

# 7. Project Timeline and Progress

## Project Timeline and Progress:

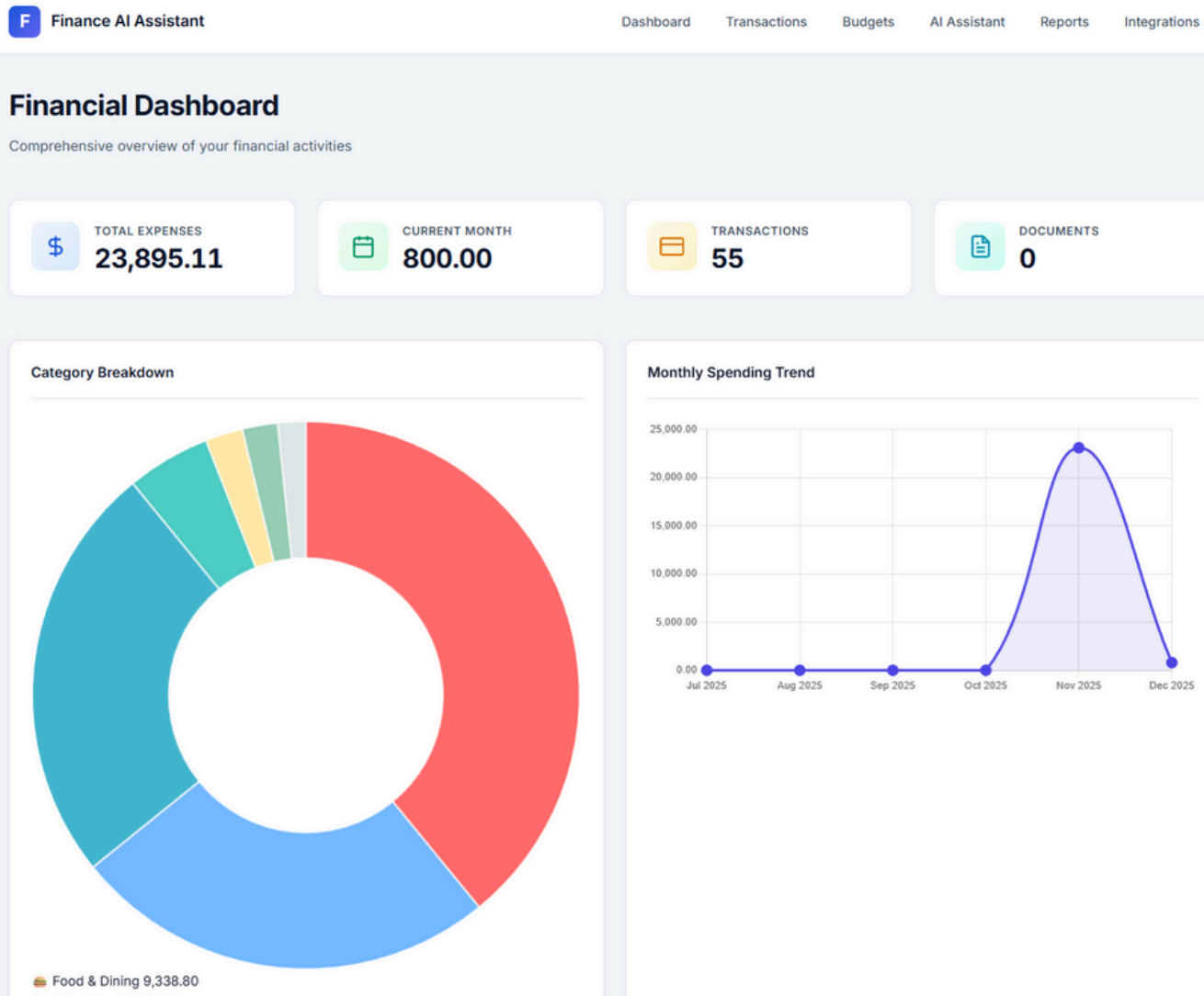
Task / Module	Timeline	Status	Progress
Insights generation (charts, spending patterns)	Week 7	Completed	100%
Reports module (tax-ready, summaries)	Week 8	Completed	100%
Chatbot module	Week 9	Completed	100%
Advanced features (AI recommendations, auto-sync, improvements)	Week 10	In progress	~20–30%
Multi-user Login	Week 11	In progress	~10%
Deployment	Week 11	In progress	0%

# 8. Interaction with guide

## **Interaction with guide:**

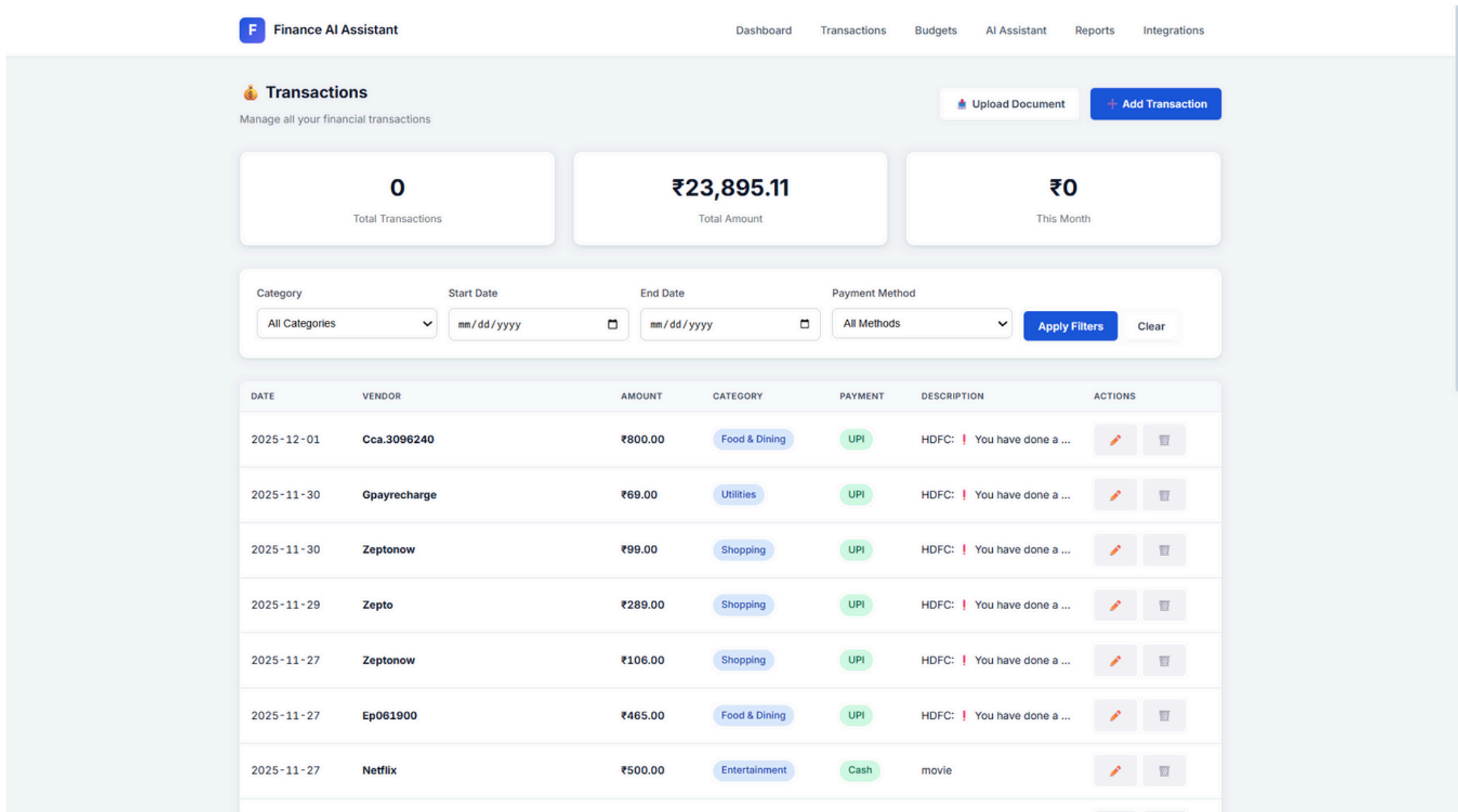
- Had regular meetings with guide about project progress and challenges.
- Got advice on using AI/ML effectively for document processing.
- Key suggestion: Connect the system with a banking apps so transactions update the dashboard automatically.
- Guide's feedback helped make the app smarter, easier to use, and more practical.

# 9. Output Screenshots



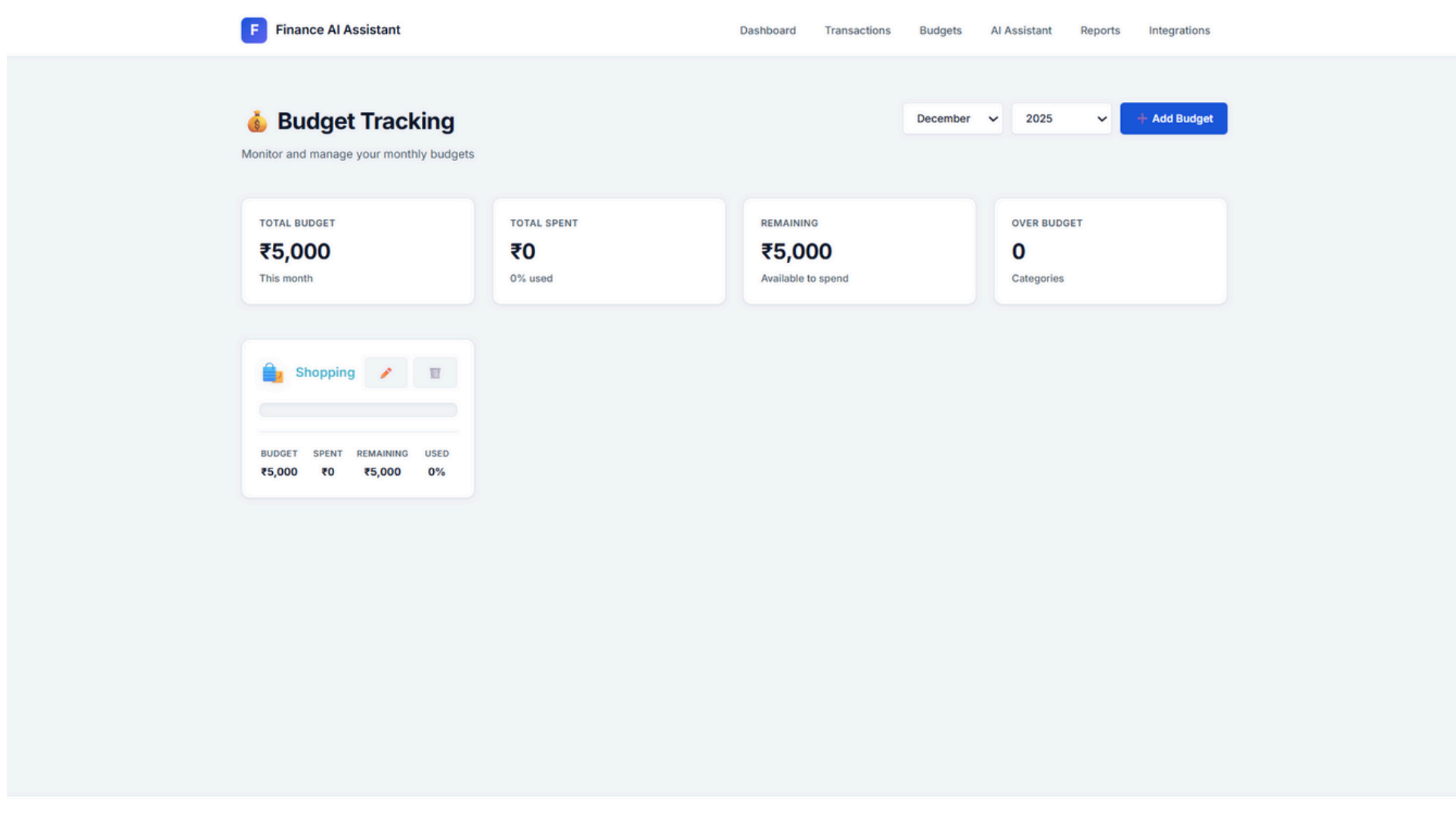
[Figure 1: Dashboard]

# 9. Output Screenshots



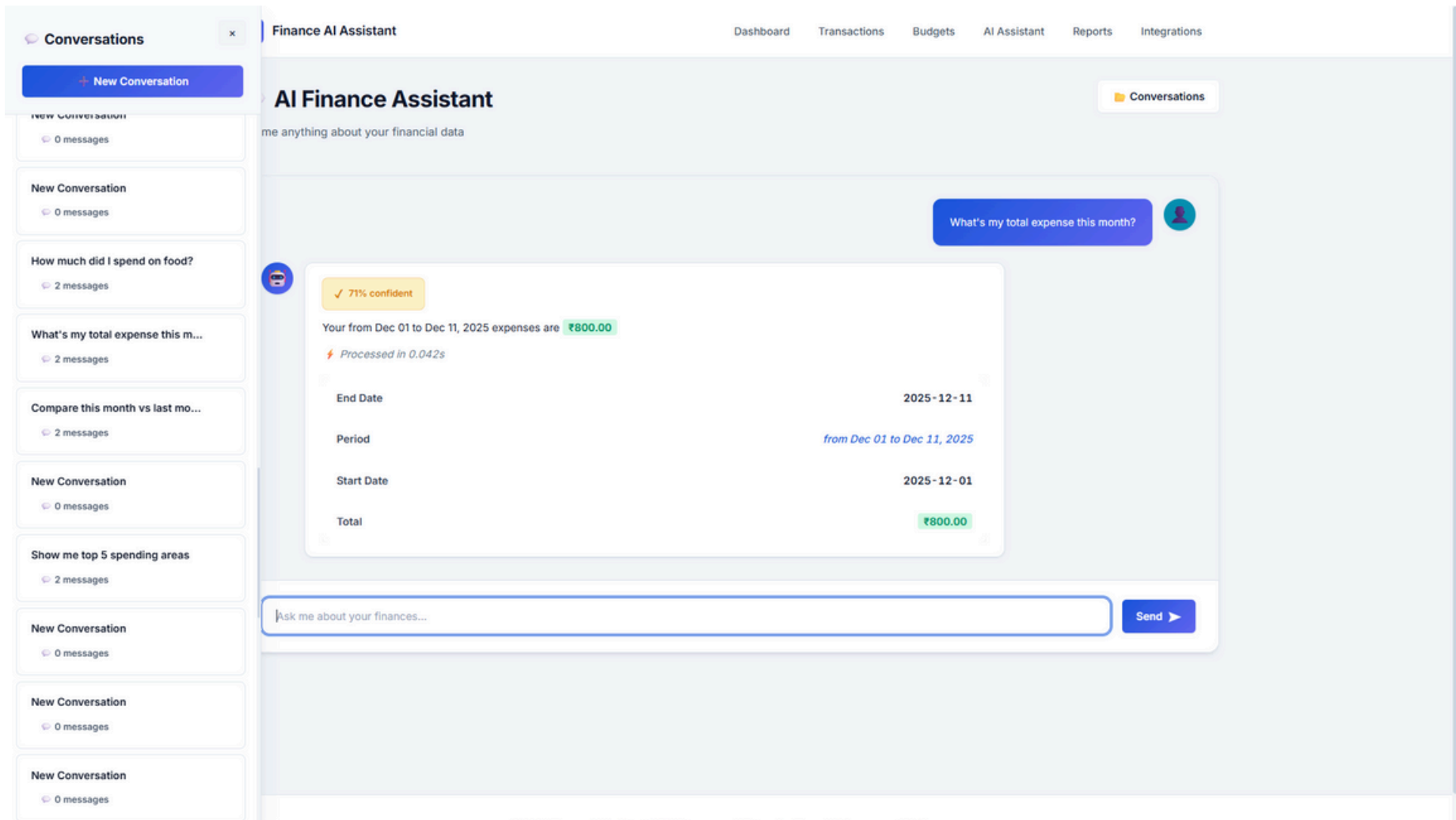
[Figure 2: Transactions list]

# 9. Output Screenshots



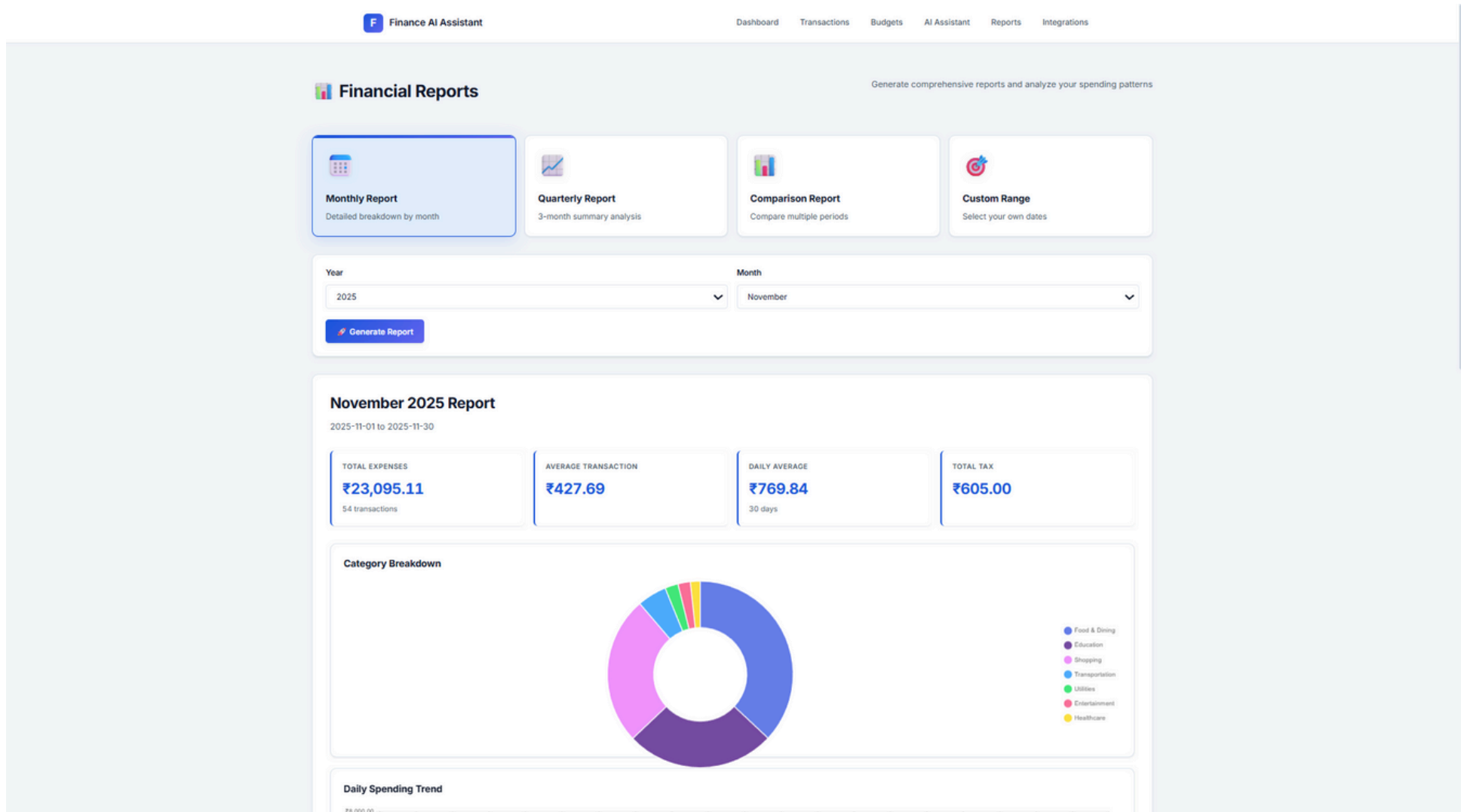
[Figure 3: Budget Tracking]

# 9. Output Screenshots



[Figure 4: Finance Assistant chatbot]

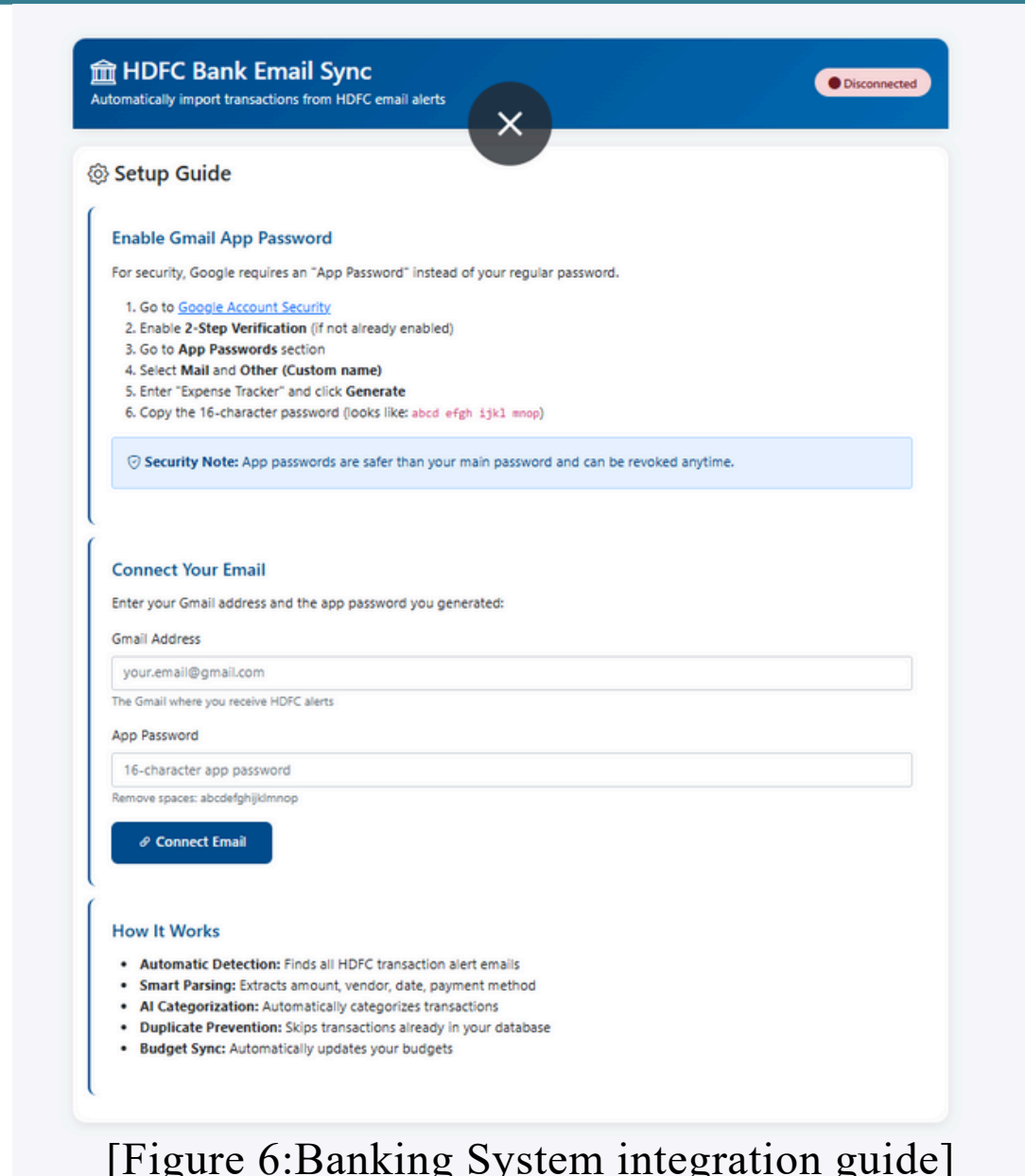
# 9. Output Screenshots



[Figure 5: Reports page]

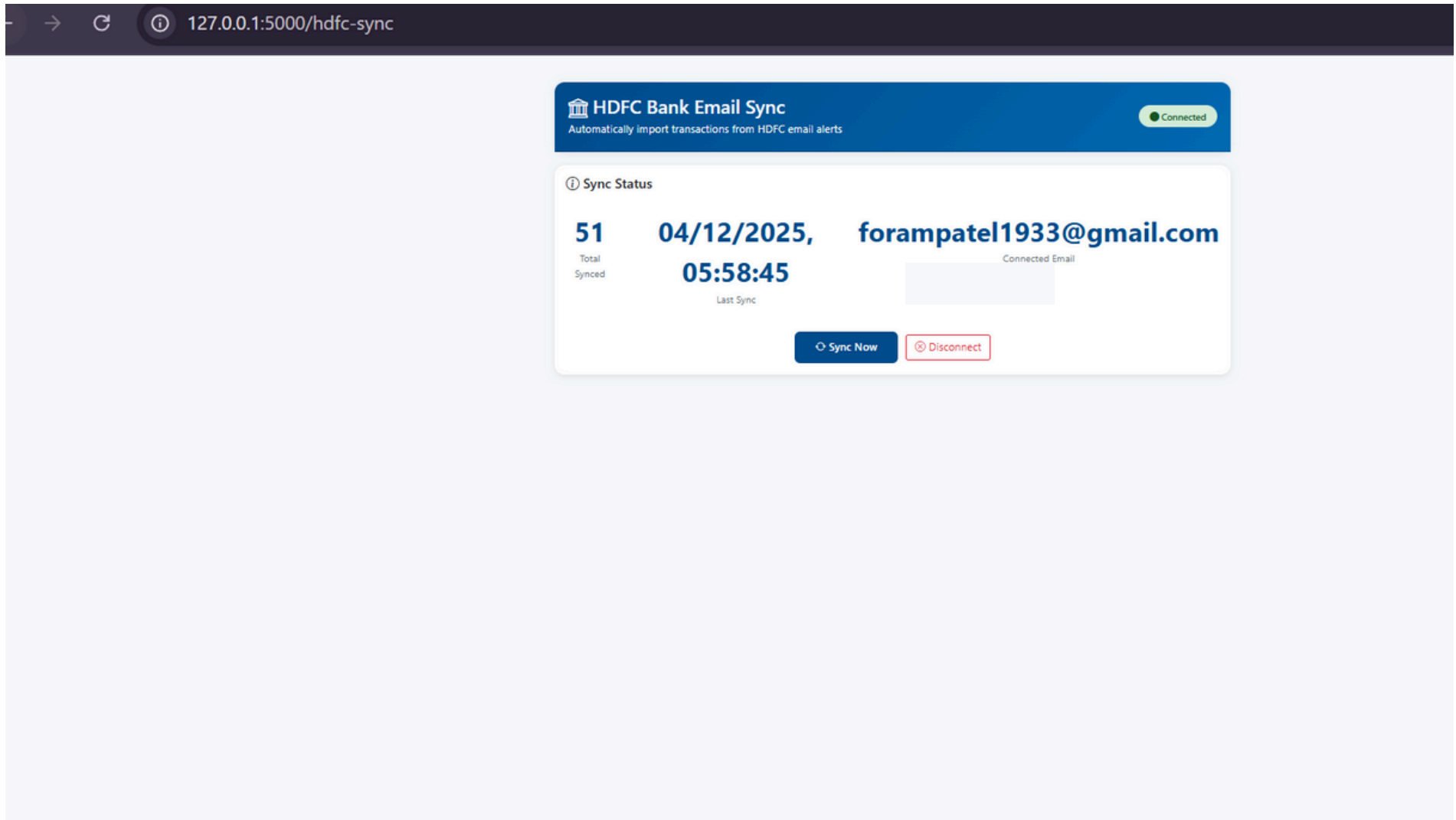


# 9. Output Screenshots



[Figure 6:Banking System integration guide]

# 9. Output Screenshots



[Figure 7: Bank App synced successfully]

# 10. Challenges Faced

## **Challenges Faced:**

- NLP accuracy issues while extracting data from diverse receipts and invoices.
- Chatbot sometimes misunderstood user queries or gave less relevant responses.
- Ensuring consistent performance across varied document formats and inputs was tricky.

# 11. Conclusion

## **Conclusion:**

In this project, we developed an AI-powered finance assistant that can automatically read receipts, invoices, and bank statements, organize expenses, and generate meaningful insights. The system provides personalized financial recommendations, helping individuals, households, and small businesses manage their money more efficiently. With advanced AI features and the planned banking integration, the assistant not only simplifies day-to-day finance management but also prepares users for smarter budgeting, savings, and tax readiness.

Thank you

Any Question ?