Financial Chatbot

Empowering Your Financial Future: AI-Driven Insights for Smarter Money Management

Team Name: **The FinSavvys**

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Project Overview

Our Mission

Develop an AI chatbot that automatically reads transaction records, classifies spending into categories, and helps users make better financial decisions.

Target Users

Students, young professionals, and anyone learning to budget who wants clearer insights into daily spending without manual tracking.

Core Value

Transforms raw transaction data into clear, actionable insights — saving time and revealing spending habits users might otherwise miss.

The Problem We're Solving

Why People Struggle

- Tracking spending is time-consuming
- Statements are long and hard to read
- Multiple accounts create confusion
- Easy to lose sight of spending patterns

Most people know they should track expenses, but rarely find time. Our system fixes this by automating the process and making budgeting less stressful.

Key Requirements

1

Automated Classification

Upload bank statements in CSV, Excel, or PDF formats. System automatically categorizes transactions into food, housing, transport, health, and more.

2

Intelligent Q&A

Answer natural language questions like "How much did I spend on food last month?" with accurate, instant responses.

3

Pattern Recognition

Detect spending trends, identify recurring expenses, and highlight areas of high expenditure with actionable insights.

4

Personalized Budgets

Generate monthly budget recommendations based on historical transaction data and continuously improve through user feedback.

Non-Functional Requirements

Performance : Fast response with no noticeable delay, optimized for large financial datasets (min. 16 GB RAM recommended).

Scalability : Handles multiple users and big datasets simultaneously; easily scales with user or data growth.

Usability Simple, intuitive interface for all skill levels; supports both voice and text interaction.

Reliability Delivers accurate insights with minimal downtime, even under heavy load.

Maintainability Modular design enables smooth updates and feature additions without disrupting existing functions.

Integration Seamless connection with banking APIs, budgeting tools, and visualization platforms (e.g., Tableau).

Data Consistency Ensures synchronized, up-to-date, and accurate transaction and spending data across modules.

Privacy & Security Employs strong encryption and data-protection policies; no data sharing without user consent.

Our Technical Approach

Natural Language Processing

Understands user questions and intent

Machine Learning

Auto-categorizes expenses and learns from feedback

Knowledge Representation

Organizes user data for quick retrieval

Pattern Recognition

Identifies trends and generates suggestions

Development Strategy

Phase 1: Foundation

Prepare clean sample data and build simple transaction labeling model

Phase 2: Integration

Connect model to chatbot interface for user questions and answers

Phase 3: Enhancement

Add monthly summaries, spending advice, and advanced features

Phase 4: Refinement

Test thoroughly, gather feedback, and optimize performance

Working in stages helps us spot problems early and improve continuously as we build.

Progress Completed

Data Pipeline ✓

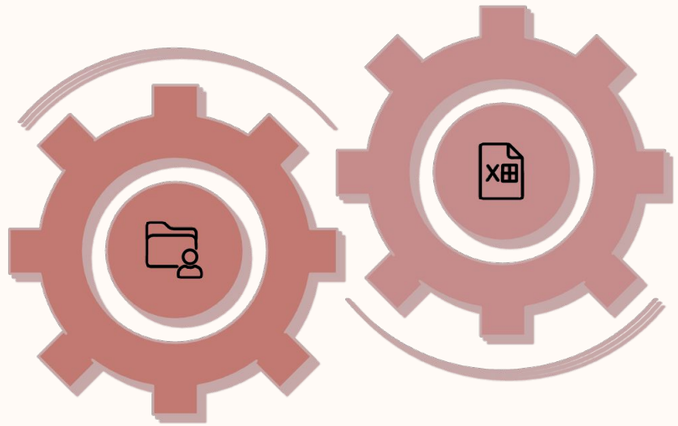
- Scripts to read and clean financial datasets
- Structured format conversion
- Exploratory data analysis complete
- Data consistency validation

ML Classification ✓

- Weak labeling using keyword rules
- Text embedding generation
- Logistic Regression model trained
- Initial performance metrics established

ML Classification

Perform exploratory analysis and apply machine learning models



Data Pipeline

Read, clean, convert, and validate datasets for analysis

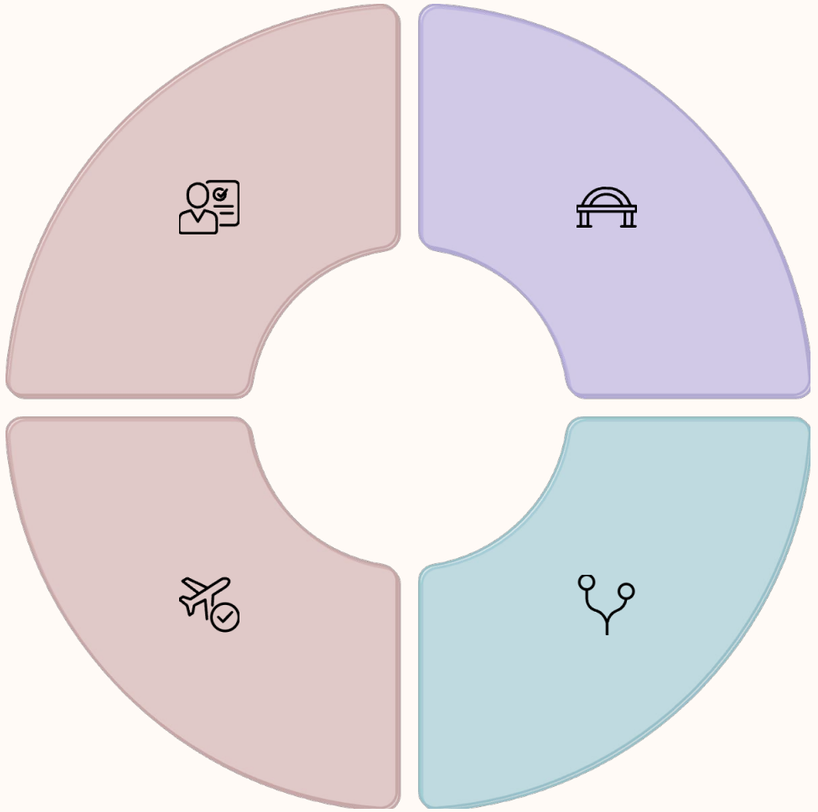
Team Structure & Workflow

Sudeepta & Rucha

Research and documentation to maintain clear, consistent design

Mitali

Connects research ideas to program implementation



Sahit

Testing, demos, and build quality assurance

Sasi

Main development and system integration work

Weekly meetings keep progress steady and workload balanced across the team.

Next Steps

Natural Language Query Processing

Enable the system to understand and respond to user questions in conversational language

Autonomous Budget Generation

Create personalized monthly budgets based on spending patterns and financial goals

Continuous Learning

Implement feedback loops so the system improves accuracy and recommendations over time

Lessons Learned

Technical Insights

- Iterative development catches issues early
- Data quality is foundation of AI accuracy
- Weak labeling enables learning from unlabeled data

Team Collaboration

- Clear role division improves efficiency
- Weekly check-ins maintain momentum
- Balanced workload prevents burnout

User-Centered Design

- Convenience drives adoption
- Simplicity matters more than features
- Real-time feedback enhances trust

Looking Forward

Our chatbot will transform financial management from a chore into an effortless, intelligent experience that empowers better decisions.

Customer Interaction

Users can upload multiple bank statements at once and receive transaction-based insights within minutes.This eliminates the need for manual analysis of spending history, making financial tracking faster, easier, and more intuitive.

Non-Technical Experiences

Our team learned the importance of clear communication and collaboration through weekly meetings and shared documentation.We improved time management by dividing work into smaller, testable tasks that kept progress steady.

Thank You for Listening