

INFOSYS BUDGETWISE AI BASED EXPENSE FORECASTING TOOL

Integrates predictive analytics with real-time data to deliver accurate, adaptive forecasts that improve financial decision-making

TEAM – A

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INTRODUCTION TO AI BUDGET FORECASTING



Predictive accuracy from ML models analyzing large volumes of historical and real-time data



Dynamic adaptation: models update forecasts as new data arrives



Risk mitigation through pattern detection and anomaly alerts



Informed strategic planning with scenario simulation and resource allocation insights



More reliable budgeting versus static models via continuous analytics

PROJECT STATEMENT

Tracking expenses are often time-consuming, tedious, and prone to human error.

Effective budget management is a common challenge for many. The core problems this project aims to address are:

- **Unconscious Overspending:** Many people overspend without a clear, real-time understanding of their financial habits.
- **Inefficiency of Manual Budgeting:** Traditional methods of manually.
- **Difficulty in Future Planning:** Accurately estimating Future expenses is difficult, making long-term financial planning and savings a significant challenge.



OBJECTIVES



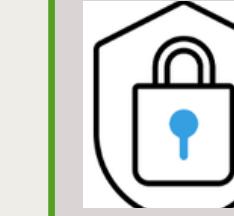
Automate Financial Hygiene:

Reduce manual time spent cleaning and categorizing transactions.



Proactive Financial Planning:

Provide accurate forecasts to prevent overspending.



Data Integrity & Security:

Use a secure backend to safely manage large financial data.



Actionable Goal Tracking:

Track spending limits with real-time progress alerts.



Informed Decision-Making:

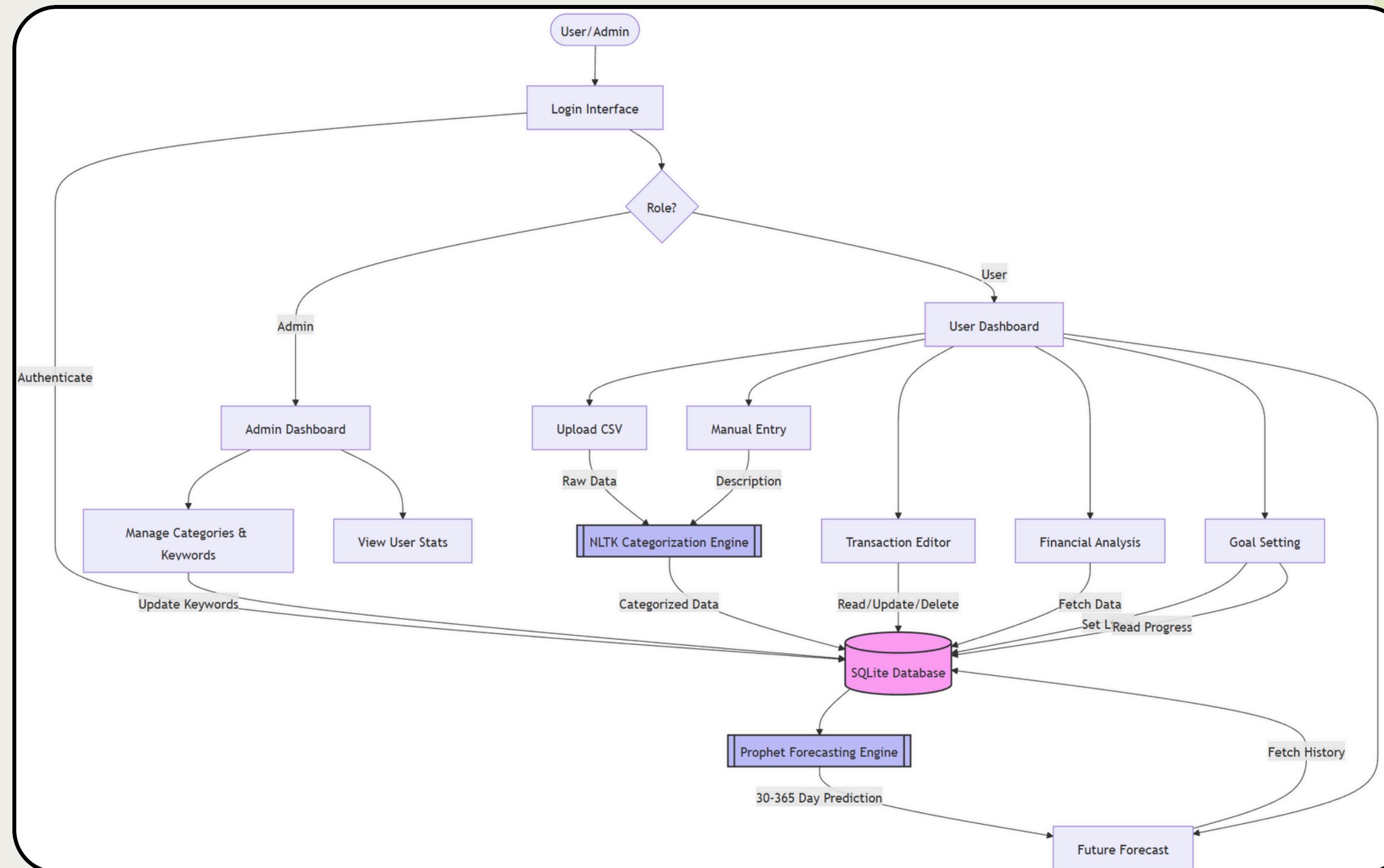
Convert financial data into useful insights and recommendations.



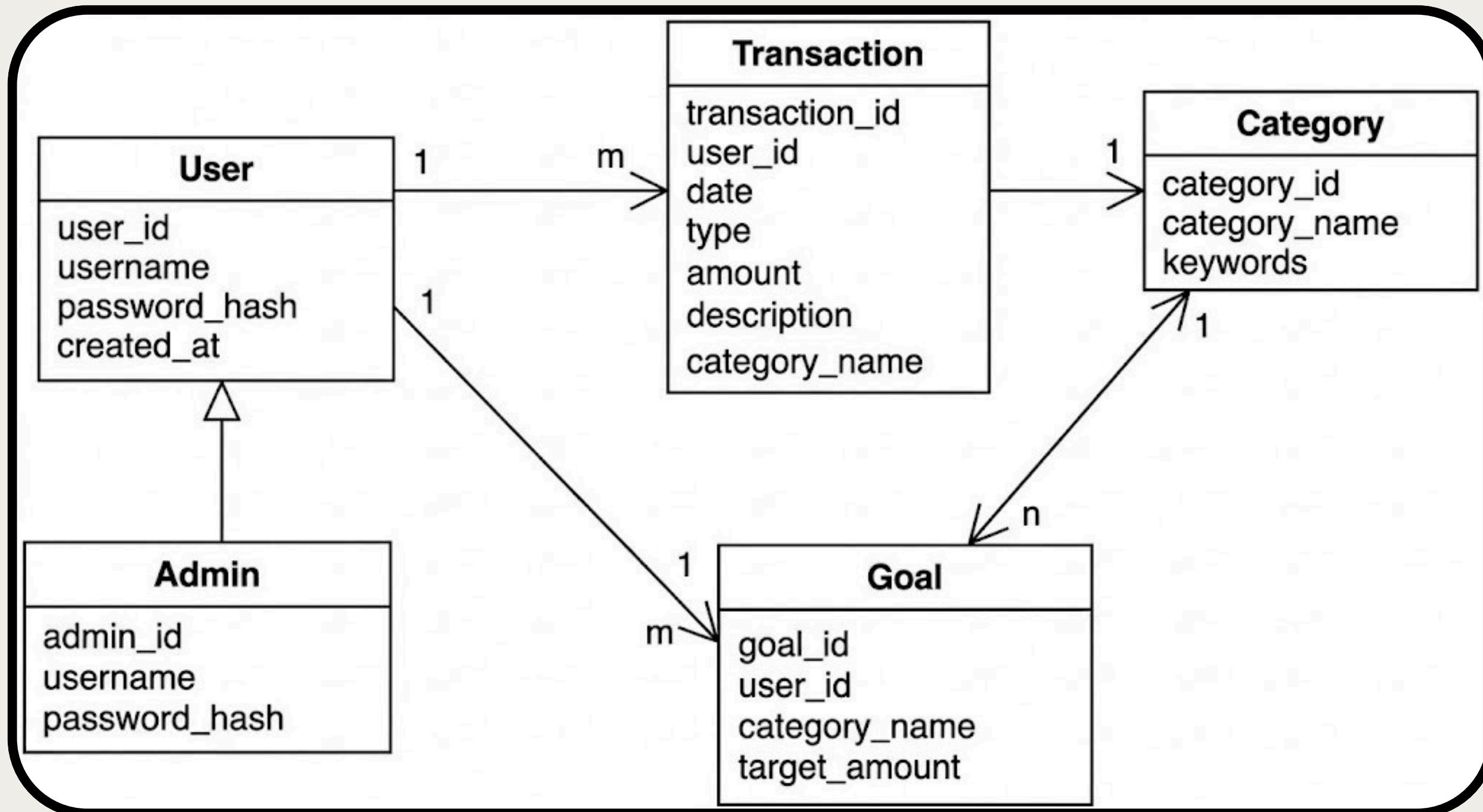
Cross-Platform Access:

Allow users to view and manage finances from any device.

PROCESS FLOW DIAGRAM:



DATABASE SCHEMA

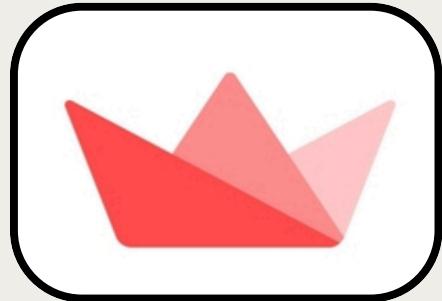


TECH STACK



Python

Core Backend Logic



Streamlit

Interactive Web Interface



SQLite

Local Data Storage



Pandas

Data Analysis & Cleaning



NLTK

Automated Text Categorization



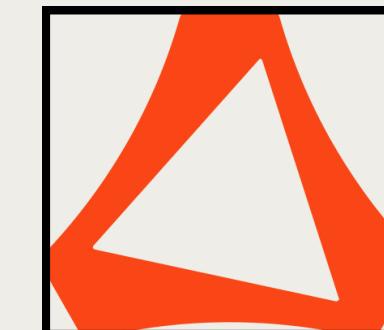
Prophet

Time-Series Forecasting



Matplotlib

Static Statistical Visuals



Altair

Interactive Forecast Charts

MILESTONE 1: Foundation & Basic Input

1. Implemented a secure **Role-Based Authentication system** with hashed password protection.
2. Integrated **SQLite database storage** for reliable and efficient data management.
3. Developed a **Manual Transaction Entry interface** for easy input and real-time validation.
4. Enabled **instant database updates**, improving accuracy and reducing processing time.

Welcome to BudgetWise

User Login Register Admin Login

Admin User

Admin Pass

Login



Welcome, teamA

Logout

Log & Manage Analysis Goals Forecast

Upload CSV

Choose a file



Drag and drop file here
Limit 200MB per file • CSV

Browse files



personal.csv 47.3KB

Manual Entry

Date

2025/11/26

Amount

0.01



Type

Expense

Desc

Add

MILESTONE 2: Data Processing, Analysis & Visualization

1. Integrated **NLTK-based NLP model** to automatically categorize transactions from descriptions.
2. Built a **smart categorization engine** for improved organization of financial records.
3. Designed a **comprehensive Financial Dashboard** with interactive visual charts.
4. Added **analytics for income vs. expenses and category-wise spending breakdowns**.

Welcome, teamA

[Logout](#)[Log & Manage](#) [Analysis](#) [Goals](#) [Forecast](#)

Income

\$7,027,500.00

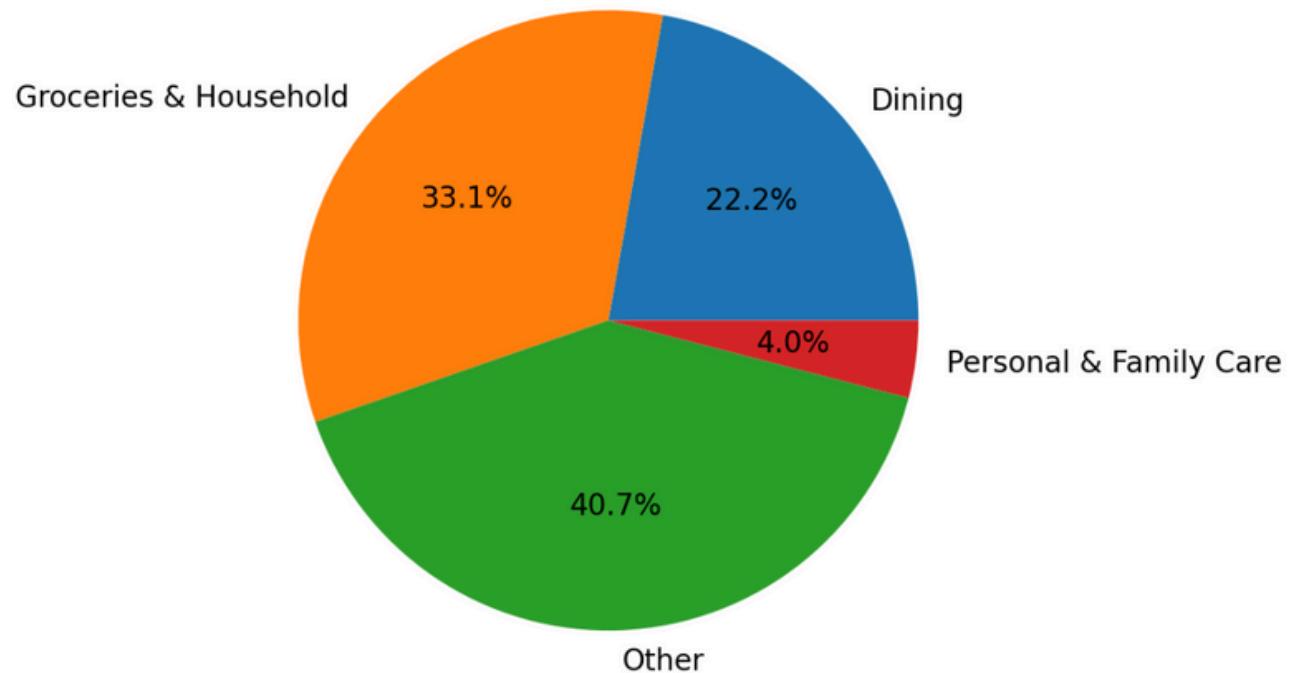
Expense

\$2,970,965.92

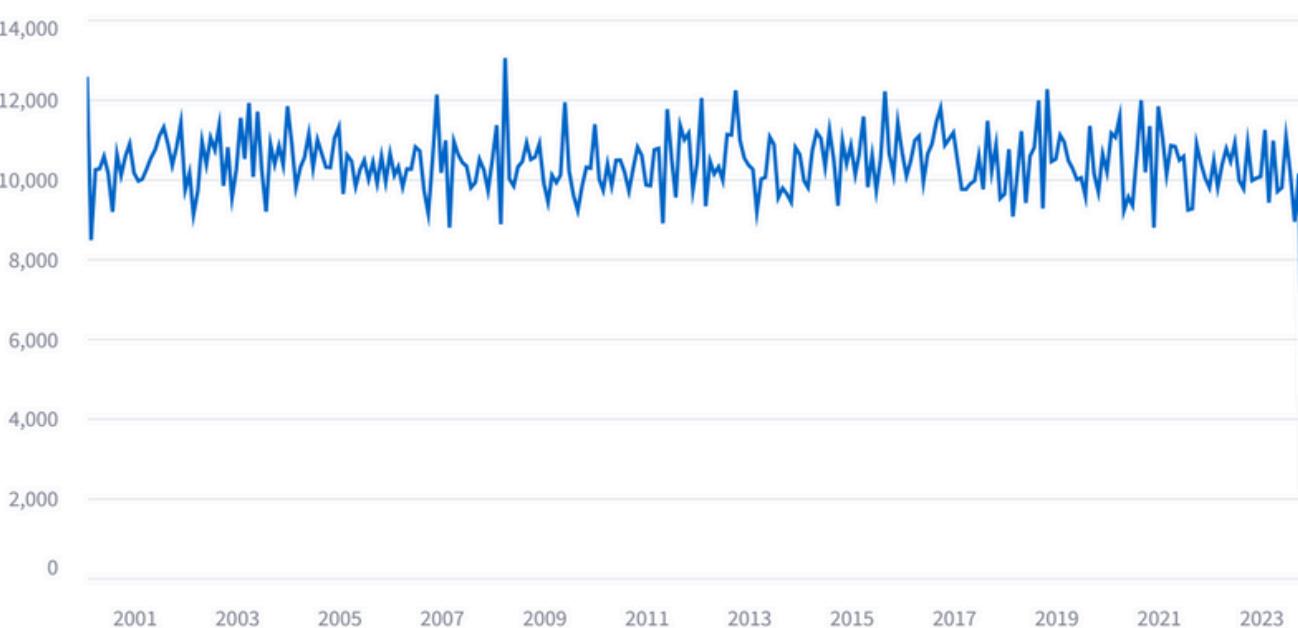
Savings

\$4,056,534.08

Category Breakdown



Trend



```
# NLTK Setup
try:
    nltk.data.find('corpora/stopwords')
except LookupError:
    nltk.download('stopwords', quiet=True)
try:
    nltk.data.find('tokenizers/punkt')
except LookupError:
    nltk.download('punkt', quiet=True)

from nltk.corpus import stopwords
from nltk.tokenize import word_tokenize
stop_words = set(stopwords.words('english'))
```

Edit Transactions

> ⚠ Danger Zone

Showing 50 of 50002 transactions.

Page

1

Date	Type	Amount	Description	Category
2025-11-17	Expense	\$150.00	rent	Housing
2025-11-17	Expense	\$50.00	restaurant	Dining
2023-10-03	Expense	\$18.31	Groceries	Groceries & Household
2023-10-02	Expense	\$3.29	Coffee/Snacks	Other
2023-10-02	Expense	\$35.56	Transportation	Other
2023-10-02	Expense	\$93.11	Eating Out	Dining
2023-10-02	Expense	\$89.10	Eating Out	Dining
2023-10-02	Expense	\$13.88	Coffee/Snacks	Other

MILESTONE 3: Forecasting Engine & Initial Goal Setting

1. Implemented **Meta's Prophet forecasting model** to predict spending trends up to 365 days ahead.
2. Added **advanced data visualizations** including confidence intervals and seasonal trend analysis.
3. Enabled **weekly spending pattern forecasting** for better financial planning.
4. Improved **forecast accuracy and user insight** through dynamic charts and statistical modeling.

[Deploy](#)[Logout](#)

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Select Historical Data View:

Weekly Average (Recommended)

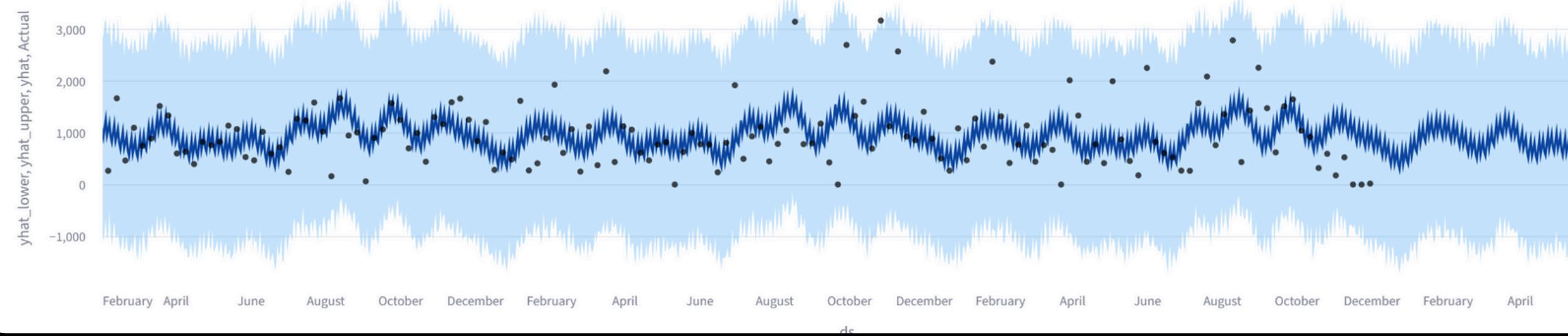
Select days to forecast:

30 201 365

[Generate Forecast](#)

Forecasted Expenses for the Next 201 Days

Legend: Black=Actual Weekly, Blue=Prediction, Area=Confidence



MILESTONE 4: Admin Dashboard & System Management

1. Built a **Goal Setting Module** allowing users to set monthly category spending limits.
2. Added **real-time “Over Budget” alerts** and progress tracking indicators.
3. Developed an **Admin Dashboard** for system monitoring and category management.
4. Enabled **instant AI logic updates** through dynamic parameter configuration.

Admin Dashboard

Logout

System Stats

Total Users: 6 | Total Transactions: 52005

User Management

Select User to View Details

Select User

Select User

Afrin

Nabeel

Srujan

eshapriya

saathwika

teamA

Category Management

New Category Name

Create Category

Select Category

Housing

New Keyword (lowercase)

Add Keyword

Current Categories:

- Housing
- Transportation
- Groceries & Household
- Dining
- Entertainment
- Personal & Family Care

Welcome, teamA

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Set Goal

Category

Entertainment

Limit

50.00



-

+

Over Budget by \$5!

[Save Goal](#)[Delete Entertainment](#)

Progress (This Month)

Entertainment

55/50



FUTURE ENHANCEMENT & ROAD MAP :

1. Granular Forecasting:

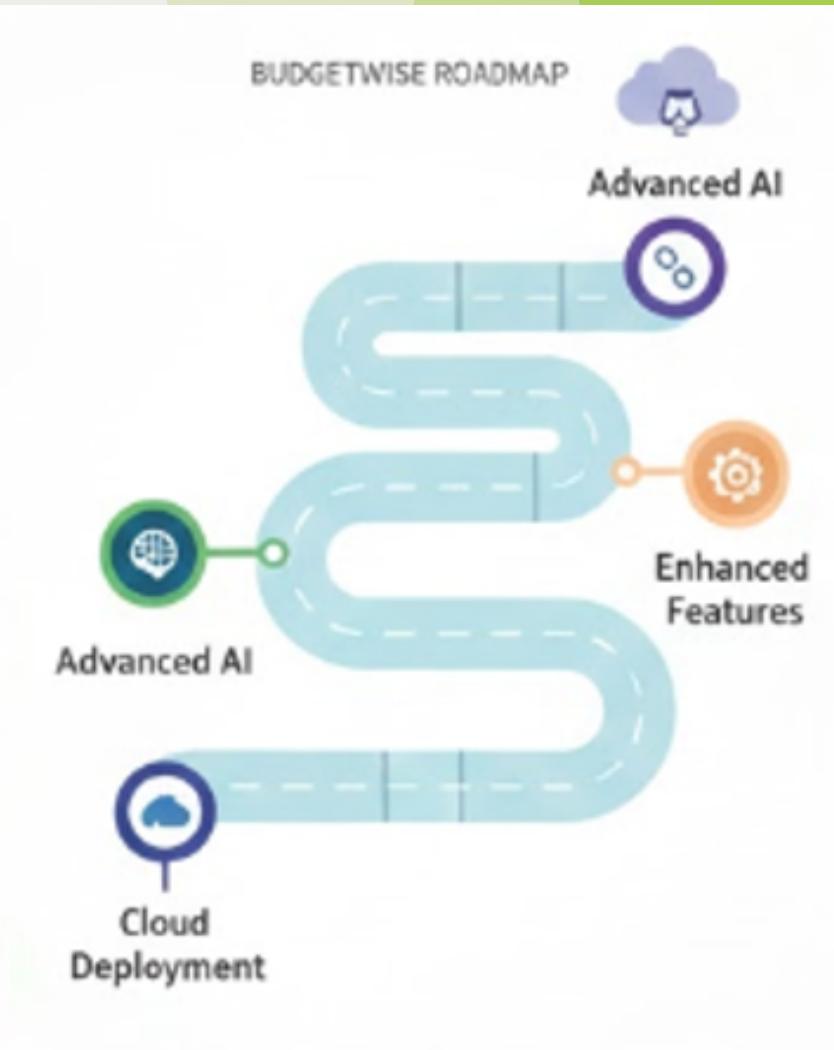
Extend the Prophet engine to forecast individual high-impact categories (e.g., predict "Dining" or "Groceries" spending specifically) rather than just total daily expenses.

2. Automated Bank Feeds (API Integration):

Integrate with financial APIs like Plaid or Yodlee. This would securely connect to users' bank accounts and import transactions automatically in real-time, eliminating the need for manual CSV uploads.

3. Advanced Goal Setting:

Move beyond simple monthly spending limits to include long-term savings goals (e.g., "Save \$5,000 for a car by December") with forecasting models projecting whether the user is on track to meet the deadline.



CONCLUSION

BudgetWise: Empowering Your Financial Future

We've demonstrated how BudgetWise transforms complex financial management into an intuitive, AI-driven experience. By automating categorization, providing predictive forecasts, and enabling proactive goal tracking, BudgetWise empowers individuals to gain unparalleled clarity and control over their finances, ensuring smarter decisions and greater financial stability.

Thank You!