

AUTOMATION OF PERSONAL FINANCES

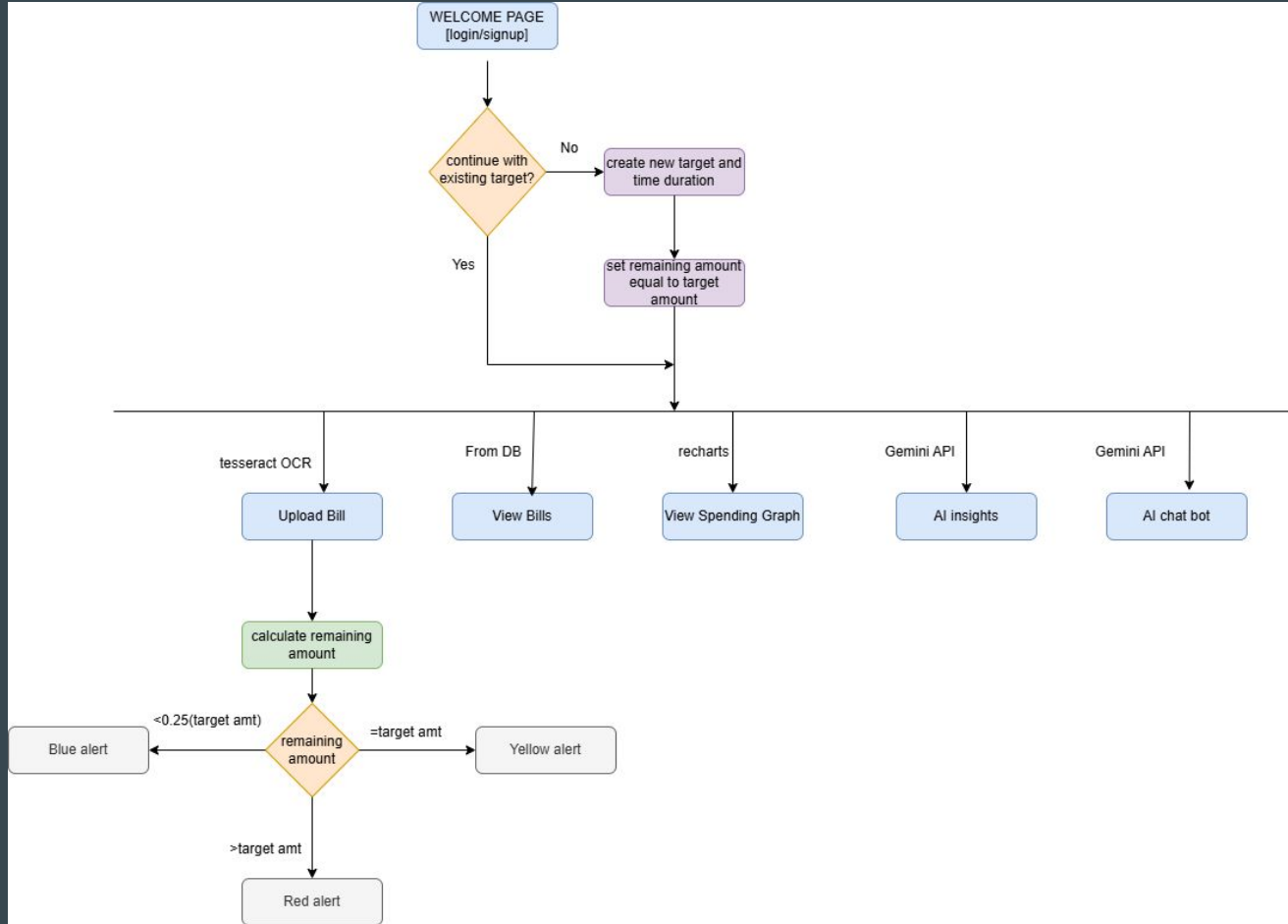
TRACK - AUTOMATION

Managing personal finances manually is time-consuming, error-prone, and lacks real-time insights.

Core Challenges:

- Users often struggle to track their spending habits and budget allocations.
- Bills and receipts are stored in physical or scattered digital formats, making analysis difficult.
- No clear visibility into where money is being spent, overspending patterns, or category-wise insights.
- Manually updating expenses in spreadsheets or apps can be inconvenient and inconsistent.

ARCHITECTURE DIAGRAM



SOLUTION OVERVIEW

1. Our project creates a hassle free environment where users can track their finance expenditure by just uploading the purchase bill rather than manually entering all the detail
2. Our solution provides graphical visualization of the data.
3. Real time data analysis using generative AI
4. Customized chat bot for finance related queries

TECH STACK

Frontend - React.JS, HTML/CSS

Backend - Node.js, Express.js

Database - MongoDB

Text Extraction - Tesseract OCR

Visualization - recharts

API and libraries- Gemini API, axios

Implementation details

1. Set Target Amount and time duration

User sets the target amount and the time during which he/she wishes to spend it.

2. OCR Bill Scanning

Uploads bill images, Tesseract.js extracts text and saves it to MongoDB.

3. Custom Regex Parser

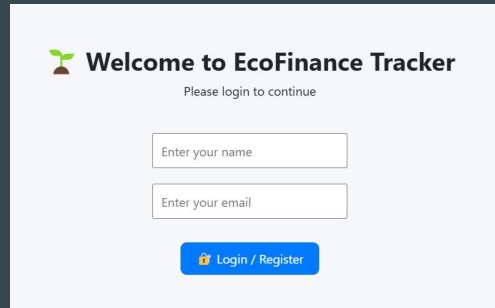
Extracts item names, prices, and dates from receipts using regex-based parsing.

4. Expense Tracking

Categorized transactions are stored in MongoDB for easy access and management.

5. Real-Time Budget Calculation

Tracks remaining budget and updates as bills are added.



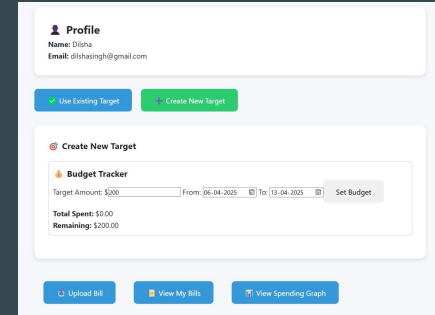
Welcome to EcoFinance Tracker

Please login to continue

Enter your name

Enter your email

Login / Register



Profile

Name: Disha

Email: dishasingh@gmail.com

Use Existing Target Create New Target

Create New Target

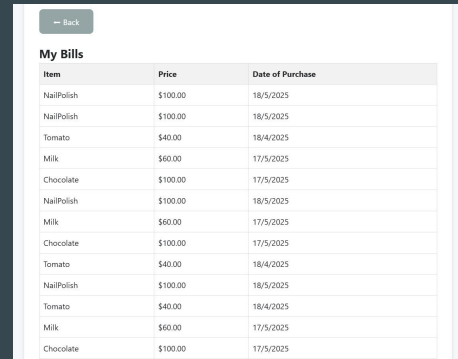
Budget Tracker

Target Amount: \$200 From: 06-04-2025 To: 13-04-2025 Set Budget

Total Spent: \$0.00

Remaining: \$200.00

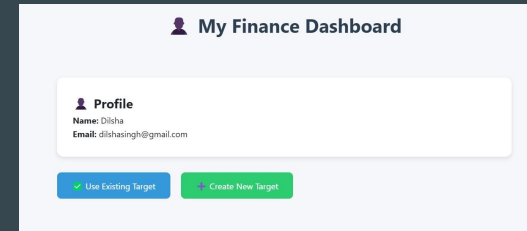
Upload Bill View My Bills View Spending Graph



Back

My Bills

Item	Price	Date of Purchase
NailPolish	\$100.00	18/5/2025
NailPolish	\$100.00	18/5/2025
Tomato	\$40.00	18/4/2025
Milk	\$60.00	17/5/2025
Chocolate	\$100.00	17/5/2025
NailPolish	\$100.00	18/5/2025
Milk	\$60.00	17/5/2025
Chocolate	\$100.00	17/5/2025
Tomato	\$40.00	18/4/2025
NailPolish	\$100.00	18/5/2025
Tomato	\$40.00	18/4/2025
Milk	\$60.00	17/5/2025
Chocolate	\$100.00	17/5/2025



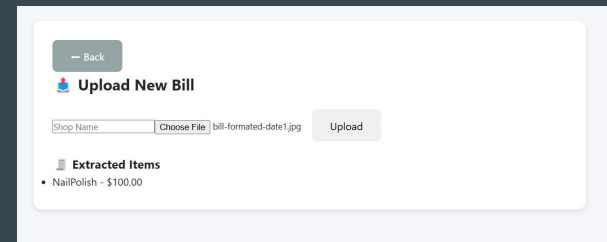
My Finance Dashboard

Profile

Name: Disha

Email: dishasingh@gmail.com

Use Existing Target Create New Target



Back

Upload New Bill

Shop Name Choose File bill-formated-date1.jpg Upload

Extracted Items

- NailPolish - \$100.00

6. Budget Management

Auto-updating budget with real-time calculations and alerts.

7. Spending Alerts

- Alerts triggered at 25%, 100%, and exceeded target amounts:
- Blue Alert: Remaining amount is 25% of target.
- Orange Alert: Remaining amount is 0.
- Red Alert: Remaining amount is less than target.
- Customizable alert thresholds.

8. Dashboard Analytics

- Spending History Visualization: Displays data using React and Recharts for easy tracking.
- Breakdown of spending by categories.

⚠ Warning: Your remaining budget is below 25%!



My Finance Dashboard

🎯 You've exactly reached your target.



My Finance Dashboard

🔴 Alert: You've exceeded your budget target!



My Finance Dashboard

9. Analysis of Items Purchased

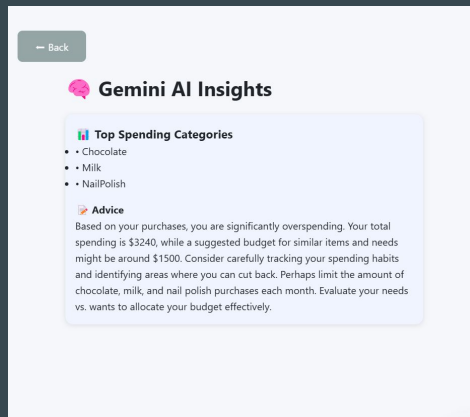
Detailed analysis of items and expenses to help identify spending patterns.

10. AI Insights

Uses the Gemini API to analyze spending patterns and provides intelligent suggestions, category breakdowns, and budget alerts for smarter financial decisions.

11. AI Chat Bot

Powered by Gemini, the chatbot answers finance-related queries, offers budget tips, and guides users on managing expenses in a conversational manner.



The screenshot shows a chat interface with a 'Back' button at the top left. The heading is 'Chat with our AI Assistant' with a speech bubble icon. The chat history shows a previous message from the bot: 'You: what is photosynthesis' and a response: 'Bot: I'm here to assist with **finance-related topics only**. Try asking about budgeting, expenses, or bills!'. At the bottom, there's a text input field with the placeholder 'Type your message here...' and a blue 'Send' button.

The screenshot shows a chat interface with a 'Back' button at the top left. The heading is 'Chat with our AI Assistant' with a speech bubble icon. The chat history shows a previous message from the user: 'You: how to improve my finance??' and a response from the bot: 'Bot: To improve your finances, let's break it down into key areas. I can offer guidance on: * **Budgeting:** Creating a plan for your income and expenses to track where your money is going. * **Saving:** Strategies for building an emergency fund, saving for specific goals (like a down payment), and investment options. * **Income/Expenses:** Analyzing your current income streams and expenses to identify areas for improvement. * **Bill Analysis:** Reviewing your recurring bills (utilities, subscriptions, etc.) to identify potential savings. * **Spending Habits:** Understanding your spending patterns and developing strategies to curb unnecessary spending. Which area would you like to focus on first? Alternatively, I can'. At the bottom, there's a text input field with the placeholder 'Type your message here...' and a blue 'Send' button.