Simple Budgeting Application

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GitHub:

CMPT-276-SUMMER-2025/final-project-23-fields: final-project-23-fields created by GitHub Classroom

Overview

This project is intended to address common budgeting challenges faced by individuals in a variety of situations—whether they're students, freelancers, travellers, or simply people trying to stay on top of their personal finances. Manually tracking expenses, especially when managing multiple bank accounts or spending in different currencies, can be both tedious and error-prone. One team member personally experienced this while travelling across Europe—paying in various currencies and constantly converting prices mentally to stay within budget. At one point, they had to create a multi-currency Excel sheet and manually input each purchase, which was time-consuming and inefficient.

In today's global economy, it's common for people to shop online from international retailers, use a mix of payment platforms like PayPal, Venmo, Wise, WeChat, or Alipay, and frequently deal with fluctuating exchange rates. These cross-border transactions often come with added fees and uncertainty around timing and cost. By bringing this application to life, we serve to simplify or even eliminate the need for users to do their own calculations and conversions. It gives users a clear, organized view of their spending habits while helping them reduce unnecessary costs and allowing them to make smarter financial decisions with minimal effort.

User Personas

Persona 1: The Budget-Conscious Student

- Name: Alex Chen

- Age: 21

- Occupation: University student

- Background: Lives away from home, receives monthly allowance, and works part-time. Has limited budget and tries to track spending but often forgets or gives up halfway.

- Goals: Stay within monthly budget, reduce unnecessary spending, save for summer travel.

- Pain Points: Doesn't like using spreadsheets; confused by multiple categories; loses track of money spent online.

- How the App Helps: Having simple transaction uploads, lets the app categorize automatically, and uses visual charts to see where money is going make budgeting less overwhelming and more insightful

Persona 2: The Global Freelancer

- **Name:** Sarah Martinez

- **Age:** 32

- **Occupation:** Freelance UX designer

- **Background:** Works with clients in Europe, the US, and Asia. Gets paid in multiple currencies through PayPal and Wise. Also uses multiple

bank accounts for different clients.

- **Goals:** Track which projects are profitable, prep finances for taxes, manage foreign transaction fees.

- **Pain Points:** Finds it hard to convert currencies consistently, forgets which client paid via which app, and struggles with manual tracking.

- **How the App Helps:** Automatically groups transactions by platform, converts all earnings to local currency, and helps her categorize personal vs. business expenses.

Persona 3: The Frequent Traveler

- **Name:** David Okoro

- **Age:** 28

- **Occupation:** Digital nomad / Remote developer

- **Background:** Travels across Europe and Asia while working. Uses Wise and Alipay for spending and receives income in CAD and USD.

- **Goals:** Budget across countries, avoid losing money to poor exchange rates, and track spending trends over time.

- **Pain Points:** Struggles with comparing prices between currencies; loses track of local cash spending.

- **How the App Helps:** Consolidates multi-currency spending, shows converted totals, and visualizes which cities or countries cost the most.

Persona 4: The Global Online Shopper

- **Name:** Emma Tan
- **Age:** 26
- **Occupation:** Fashion buyer & online resale hobbyist
- **Background:** Frequently shops from international websites like Taobao, eBay, and AliExpress. Uses PayPal, Alipay, and credit cards for payments. Keeps track of purchases to resell or keep, but finds it hard to manage costs due to changing exchange rates and unexpected fees.
- **Goals:** Know the real cost of each international order, plan purchases when exchange rates are favorable, and track total spending across multiple platforms.
- **Pain Points:** Manually converting currencies is tedious and inaccurate; hard to estimate final checkout cost with fees; spending quickly adds up without noticing.
- **How the App Helps:** Automatically converts spending to local currency, organizes transactions by platform, and shows category breakdowns and currency trends to support smarter purchase decisions.

Persona 5: The elderly woman with disabilities

- **Name: Stacy Abrams**
- **Age: 82**
- **Background:** Has a history of dyslexia, affecting her ability to do math. She also uses a credit card which she has to remember to pay her debts by the end of every month.
- **Goals:** To successfully keep track of the amount she's spending per month on groceries, utilities and other bills to ensure she's able to pay back the credit card along with saving up.
- **Pain Points**: Given her disability, she's unable to do calculations by hand or using a calculator. With the large amount of transactions accumulating per month, her age also prevents her from having the

necessary focus to look at each individual transaction along with other financial investments.

- **How the app helps**: Helps her track all her spending on her credit card along with managing her personal investments which will then be displayed in a visually appealing way rather than pure data.

Chosen APIs

ExchangeRate API

Provides current currency exchange rates to convert spending in different currencies into the main currency.

1. Show current exchange rates for multiple currencies and alerts users.

(As a traveller, I want to see the latest exchange rates for different currencies so I can manage my money better while spending internationally.)

2. Convert all transaction amounts into a main currency to compare

(As a freelancer, I want all my spending shown in one main currency so I can see how much I really spent and categorize expenses clearly.)

3. Alert users to favourable exchange rate changes to know when to buy currencies
(As an online shopper, I want to get alerts when exchange rates are cheap so that I can save money when making international purchases.)

Hugging Face API

Can do AI-powered text analysis to process financial data from uploaded files and give personalized budgeting advice.

1. Analyze uploaded transaction data and summarize spending patterns

(As a student, I want the app to look at my spending and tell me where my money goes so I don't have to check every purchase myself.)

2. Generate personalized budgeting advice based on user data
   (As a freelancer, I want personalized budgeting advice based on my financial data so I can manage my irregular income better.)

3. Identify unusual or large expenses for user review

(As a traveller, I want the app to point out large or unusual expenses so I can quickly review and control unexpected spendings.)

Google Cloud Vision API

Provides accurate OCR (text recognition) to extract text from images and PDFs. It has a free tier allowing 1,000 uses per month.

1. Extract text from bank statement images or PDFs uploaded by users

(As a student, I want to take pictures or upload my bank statements so the app can read the info without me typing.)

2. Convert extracted data into structured transaction records

(As a freelancer, I want the app to organize the info from my statements so I don't have to sort it myself.)

3. Detect and flag unclear or incomplete scanned data for manual correction

(As a traveller, I want the app to tell me if a picture is unclear so I can fix it before the receipt is thrown away.)

MonkeyLearn API

Provides AI-based text classification to automatically categorize transactions, helping users organize spending automatically.

1. Automatically categorize transactions into spending groups (food, transport, shopping, etc.)

(As a student, I want the app to put my purchases into categories like food and transport so I can see where I spend money.)

2. Allow users to correct or override automatic categories with manual tagging

(As a freelancer, I want to change categories if needed so my work and personal expenses are separate.)

3. Provide summary reports of spending by category

(As a traveller, I want the app to show me how much I spend in each category so I can adjust my budget on-the-go.)

Storyboard

Home Screen:

When users open the app, they see 3 main options.

Upload Bank Statement:

Users click "Upload Statement". They can upload a CSV, Excel, or PDF file from their bank or finance app. The website reads the file. If it's a PDF, the app turns it into text using OCR (optical character recognition).

Categorization:

The app looks at the transaction list, and it automatically guesses the category (like "Groceries" or "Transport"). It suggests categories using simple rules or AI to sort and tag transactions. Users can fix wrong categories or add notes like "birthday gift" or "for trip".
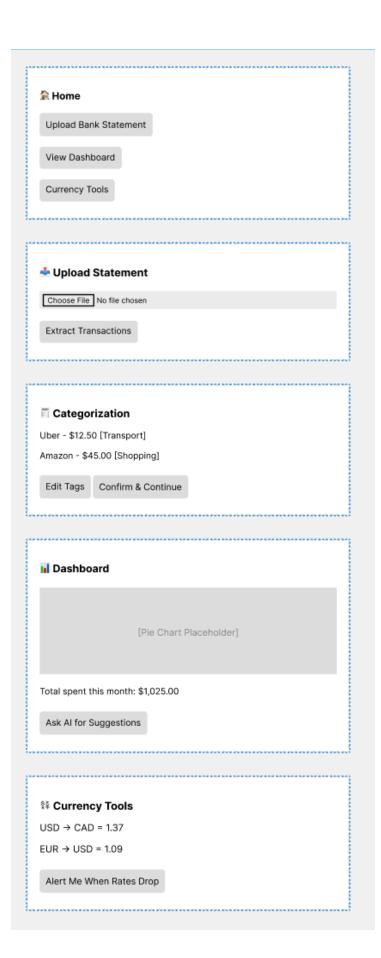
See Dashboard:

After tagging, users go to the Dashboard to see pie charts or bar charts showing what they spent on, total spending in one main currency (e.g. everything in CAD), read a short summary of how they spent money (using AI) and ask the AI for simple budgeting tips.

Pie Graph: Allows a user to understand how much they're spending in each expense type in a visually appealing way rather than just numbers. The pie graph is split into multiple colours for each expense type for contrast.

Currency Tools:

Users can check live exchange rates between currencies, convert prices to understand what they're really spending and get alerts when it's a good time to buy a currency (to save money).

🏠 Home

Upload Bank Statement

View Dashboard

Currency Tools

📤 Upload Statement

Choose File No file chosen

Extract Transactions

🗒 Categorization

Uber - $12.50 [Transport]

Amazon - $45.00 [Shopping]

Edit Tags   Confirm & Continue

📊 Dashboard

[Pie Chart Placeholder]

Total spent this month: $1,025.00

Ask AI for Suggestions

💱 Currency Tools

USD → CAD = 1.37

EUR → USD = 1.09

Alert Me When Rates Drop

Chosen Front-End Technology Stack: React

We plan to use React because the tutorial already showed us the basic steps, and it's easy to build on from there. React also works well with JavaScript, which our team is already using.

Since we are not using a back-end or database, React helps us manage everything directly on the front-end. It works well with APIs and local storage, making it easier to build a simple, smooth and responsive budgeting app.