Arthya – India's Personal Finance Copilot

Problem Statement

In **Tier-2 and Tier-3 cities across India**, a lot of people **struggle to manage their money** the right way. Instead of expert advice, they often rely on WhatsApp forwards, YouTube videos, or friends — which can be misleading. **Professional advice is either too costly** or hard to understand, especially when it's all in English. Most apps assume you're tech-savvy, which isn't the case for many. This gap leads to poor money habits, overspending, and missed chances to invest. Solving this is important — **we want** everyone, **no matter their background,** to have **access to simple**, local-language **financial help** they can trust.

Target Audience & Context: We're building Arthya mainly for people in **Tier-2/3 cities** who use their phones but aren't very comfortable with banking apps. Many of them speak local languages and prefer voice over typing. These users usually earn between **₹10,000 to ₹50,000 per month** and are often first-time earners or small business owners. They want to save, budget, or learn about finance — but don't know where to start. With India's **huge rise in smartphones and voice search**, now is the perfect time to give them something that feels **simple, personal, and made for them**.

Use of Gen-AI

Our multilingual AI assistant is powered by **Sarvam-M** (24B parameters), fine-tuned for Indian languages. It supports conversational financial guidance in Hindi, Hinglish, Odia and 11 other indian languages. We use **AI4Bharat's speech-to-text** models to enable local language voice input and **Sarvam Bulbul V2 TTS** for expressive voice output in 11+ Indian languages. The LLM, embedded via **LangChain's agentic framework**, connects to a SQL tool for answering user-specific questions like "How much did I spend in May?" and a RAG tool with Chroma vectorstore for educational queries like "What is PPF?". This allows Arthya to not only advise but also educate. ML algorithms combined with regex extract key financial data like ₹ amounts and spending descriptions, and classify them into categories like travel, groceries, bills, etc. This powerful blend of tools allows Arthya to understand natural language, track spending, and guide users on smart money choices.

Solution Framework

Arthya is a smart, multilingual personal finance assistant that helps users track spending, understand financial concepts, and build good habits. The core idea is to create a low-friction, AI-powered financial copilot that works without bank integration. Our approach emphasizes accessibility through local languages, ease of input via voice or chat, and an educational, advisor-like tone.

How it works:

1. **User Input:** Users speak or type in Hindi/Odia/Hinglish (e.g., "I paid ₹200 to Uber").

2. **Speech Recognition:** AI4Bharat's STT model converts spoken input into text.

3. **Extraction + Classification:** Regex identifies amounts and references. A lightweight ML model classifies it under categories like Transport or Food.

4. **LLM Response:** Sarvam-M LLM processes the intent and replies with personalized advice (e.g., "You've crossed your transport budget this week").

5. **Voice Output:** Response is voiced out using Sarvam Bulbul API for accessibility.

Tech Stack:

- Frontend: **React.js**, **Tailwind CSS**, **Recharts/Chart.js**
- Backend: **Node.js, Express.js**
- Database: **MongoDB**
- AI: **Sarvam-M (LLM), LangChain**
- STT: **AI4 Bharat**
- TTS: **Sarvam Bulbul V2**
- Data parsing: **Regex + ML classifier**
- Some parts of our ideation process were guided and refined with the help of AI tools like **ChatGPT** to structure our thoughts and explore use cases more effectively

---

Feasibility & Execution

We will build Arthya from scratch during the offline hackathon. Our steps:

1. Set up backend APIs using Node.js and Express.
2. Design MongoDB schemas for users, logs, and spending categories.
3. Build a responsive frontend using React.js + Tailwind CSS.
4. Connect LangChain LLM (Sarvam-M) to handle input prompts.
5. Integrate AI4 Bharat STT for voice input and Sarvam Bulbul for TTS output.
6. Create regex + ML model to extract and categorize expenses.
7. Plot data visually using Chart.js or Recharts.
8. Test workflows locally with mock data stored in CSVs.

Scalability & Impact

Arthya is designed to scale across multiple Indian states and languages without changing core infrastructure. By using APIs like Sarvam Bulbul and AI4Bharat's STT, Arthya becomes voice-capable in nearly every major regional language. The CSV-based mock dataset allows easy demoing even without internet access. As smartphone and voice adoption grow in India, Arthya can be adapted to SMS, or voice assistants. It has the potential to empower millions to track their money and build confidence in personal finance — all through natural conversation in their mother tongue.

Conclusion: Minimum Lovable Product

Arthya will be built from the ground up as a **chat + voice budgeting assistant** tailored for Indian users. It supports Indian languages, financial education, and personalized insights using the **Sarvam-M LLM and Bulbul TTS**. Our MLP will work with **CSV-based data**, **chart visualizations**, and **natural voice input/output**. It's designed to be practical, lovable, and ready for field pilots with minimal dependencies.