Financial Adventure - Learning & Playing with Money

**1) Team Name and Member Details**

* Team Name: Vertex Labs
* Members:
  + Vidhika Mahida-Backend Developer
  + Rudradutt Gohil- Backend Developer
  + Dattaprasad Kavalekar- Frontend Developer
  + Siddhi Kulkarni- Frontend Developer

**2) Problem Statement**

Chosen Problem:

Many children lack financial literacy from a young age, leading to poor money management skills as adults.

Problem Analysis:

* Financial literacy is rarely taught in schools, leaving kids unprepared for real-world financial decisions.
* Traditional finance education is boring and not engaging for young learners.
* There is a need for an interactive, gamified solution that makes learning about money fun and engaging.

Target Audience:

* Primary Users: Children (8-12 years old)
* Secondary Users: Parents & Schools (for structured financial learning programs)

**3) Solution Overview**

Brief Explanation:

A web-based financial literacy game where kids make spending/saving decisions in an interactive, story-driven adventure.

Approach:

* Current Implementable Features:
  + Dynamic Branching Storylines – Players navigate a branching storyline where choices impact their financial journey.
  + Adaptive Mini-Games – Budgeting simulator, risk-vs-reward challenges, emergency expense planning.
  + Real-Life Scenario Integration – Buying groceries, planning a birthday party, handling emergencies.
  + Customizable Environments & Avatars – Players upgrade their virtual world based on smart saving.
  + Voice & Audio Enhancements – Narration, sound effects, and interactive voice feedback.
* Enhanced Features (Future Expansion):
  + Risk vs. Reward Decision-Making – Flash sales, impulse purchases, long-term benefits.
  + AI-Generated Personalized Financial Advice – AI mentor suggests smarter spending/saving strategies.
  + Time-Based Financial Goals & Interest Simulation – Timed savings goals reinforce patience and compound interest.
  + Emergency Fund & Unexpected Expenses – Introduces real-world setbacks like unexpected repairs.
  + Charity & Social Responsibility Challenges – Players can donate virtual money to meaningful causes.

Uniqueness:

* Most finance apps focus on adults—this is a kid-friendly, gamified experience.
* Interactive, decision-based learning instead of passive lessons.

**4) Frameworks/Technologies**

Tech Stack:

* Frontend: Vite (React or Vanilla JS for faster performance)
* Backend: Node.js (For additional logic)
* Database: JSON + Browser Local Storage (NoSQL for simplicity)
* Voice Features: Web Speech API for narration
* Gamification Logic: JavaScript-based event handling for dynamic branching

Reasoning:

* Scalability: Can be expanded into a mobile app later.
* Ease of Use: Simple JavaScript-based implementation ensures quick development.
* Cost-Effective: No external financial API dependencies, making it legally safe.

**5) Feasibility and Implementation**

Implementation Ease:

* Uses a lightweight frontend approach with minimal backend needs.
* Browser-based storage ensures offline functionality.
* Can be scaled with AI-based personalization in later stages.

Effectiveness:

* Improves financial literacy through engaging, interactive learning.
* Teaches financial responsibility through practical decision-making exercises.

**6) UI/UX Mockup**

Screens Overview:

* Home Page: Choose a financial adventure.
* Game Scene: Interact with choices, track virtual currency.
* Mini-Games: Budgeting challenges, timed savings goals.
* Rewards Page: Badges, achievements, and avatar customization.

User Flow:

1. Kids choose a scenario → Make financial decisions → Game responds dynamically.
2. Earn/save money → See impact of financial choices → Learn key money concepts.

Accessibility Considerations:

* Voice narration for children who struggle with reading.
* High-contrast UI for better visibility.
* Touch-friendly navigation for easy use on tablets and mobile.

**7) Business Scope and Use Case**

Use Case Scenarios:

* Schools: Use the game as part of financial literacy programs.
* Parents: Encourage kids to practice money management in a fun way.
* EdTech Platforms: Can integrate as a module for learning platforms.
* Odoo Integration:
  + Integration into Odoo's Education Program: "Financial Adventure" can be incorporated into Odoo's existing Education Program, offering an interactive platform for teaching financial literacy.
  + Expansion of eLearning Modules: The game can be added to Odoo’s eLearning suite, providing schools with a dynamic tool for teaching financial concepts.
  + Gamification of Learning Processes: Odoo’s Gamification module can track and reward student progress within the game, enhancing engagement.
  + Community and Partner Collaboration: Partnerships with educational institutions can promote "Financial Adventure" as part of a comprehensive financial literacy curriculum.

Market Need:

* Growing demand for edtech + gamification in education.
* Financial literacy is a key skill that parents and educators want children to develop.

Future Expansion:

* Integrate AI-powered finance mentors.
* Add multiplayer challenges for collaborative learning.
* Expand into a mobile app for a broader audience.

**8) System Design and Architecture**

Technologies Overview:

* Frontend: Vite for fast development.
* Backend: Node.js for optional backend logic.
* Database: JSON and Local Storage for offline support.
* Gamification Engine: JavaScript-based progress tracking.
* Voice Assistance: Web Speech API for narration.

Functional Flow:

* **Game Start & Story Selection** - Player selects a financial adventure with initial funds and objectives.
* **Decision-Making Process** - Player makes spending, saving, and earning choices affecting virtual currency and storyline.
* **Real-Time Feedback & Learning** - System provides instant feedback, financial advice, and adjusts game progression.
* **Mini-Games & Challenges** - Players complete budgeting simulators and savings challenges to reinforce learning.
* **Progression & Rewards** - Story adapts based on financial habits, unlocking new opportunities and achievements.
* **Game Completion & Insights** - Players receive a summary of their journey and personalized financial improvement tips.
  + Players receive a summary of their financial journey and insights on improvement.
  + Progress is saved for continued learning and replayability with different scenarios.

**9) Coding Approach**

Development Strategy:

* Phase 1: Develop the core interactive story engine.
* Phase 2: Add mini-games & financial challenges.
* Phase 3: Implement voice narration & sound effects.
* Phase 4: Optimize for UI enhancements & accessibility.

Coding Standards:

* Modular JavaScript functions for scalability.
* Code reviews & testing for game logic.
* Responsive design for cross-device usability.