MoneyWise - An Interactive Financial Literacy Platform for Young Irish Adults

Name: Hafsa Moin
Module: Web Browser Application Development
Student ID: D00256764

Problem Statement

Financial literacy among young adults in Ireland remains a critical barrier to financial wellbeing and long-term economic difficulty. Recent studies reveal that more than 42% of young adults struggle to grasp basic financial concepts (RTE,2025). This demonstrates a severe educational gap that impacts their ability to make informed financial decisions. Furthermore, PTSB's Reflecting Ireland research reveals a significant gap in financial among adults in Ireland, with many lacking the basic understanding of savings, credit, and budgeting principles (PTSB, 2025). Although the Irish Funds Association has addressed this gap by launching initiatives to enhance financial literacy among Transition Year students to prepare young people for financial independence (Irish Funds, 2024), these programs are limited to scope, reaching only a fraction of a population, not to mention many students go on to skip transition year entirely. Therefore, this application has been developed to address the accessibility gap as well as make an interactive and educational tool that enhances the learning experience for young adults.

Objectives

1. This application aims to provide comprehensive video-based literacy modules that cover basic concepts like budgeting, saving, credit management and investing.
2. This application implements quiz-based assessments after each lesson to reinforce learning, provide feedback, and allow users to track their progress through the dashboard
3. This application develops a simple but effective budget calculator that enables users to input their expenses and understand their spending patterns
4. This application designs a personalised dashboard that allows users to keep track of their lessons and how they score in quizzes to motivate them to engage more effectively

Framework Justification

- React Frontend: This enables the development of complex UI elemtsn like interactive quizzes and budget calculators allowing a smooth performance and being able to provide real time updates.

- Node.js: Provides a fast and scalable backend

- MongoDB: Its' flexible schema makes it easier to store and maintain user data and it's built to scale up as the application gets bigger and implement more features

Application Design

This application follows the MERN Stack Architecture (MongoDB, Express, React, Node)

- Frontend: React components organised by features (Home, Budget Calculator, Lessons, Register)
- Backend: RESTful API built with Express, handling User Registration and Authentication
- Database: MongoDB Atlas which is used to store user credentials
- State Management: Redux handles the user session, ensuring that once a user logs in, their identity is persisted across the Dashboard and Quiz sections.

Key Features Implemented

Feature 1: User Authentication System

Registration with email validation and password strength requirements
Logout functionality clearing tokens and session data

Feature 2: Financial Lessons Module

3 lessons organized into categories (Budgeting, Saving, Credit)
Embedded YouTube video players for multimedia content
Progress tracking marking lessons as complete

Feature 3: Interactive Quiz System

Multiple-choice questions (2-3 per lesson)
Real-time answer selection with instant feedback
Immediate scoring upon submission
Answer validation against correct answers stored in database
Quiz history tracking for progress monitoring

Feature 4: Budget Calculator

Input fields for monthly income
Expense categories: Rent, Food, Transport, Utilities, Entertainment, Savings
Real-time calculation of total expenses and remaining balance

Feature 5: User Dashboard

Personalized greeting with user's name
Progress statistics: lessons completed (X/3), quiz average (%)
Quick navigation to continue learning or start new lessons.

Code Quality & Standards

Modular Architecture: Separation of dedicated component, service, and utility files
Reusable Components: Button, Input, Card components used across application.
Error Handling: Try-catch blocks in all async operations, user-friendly error messages.
Code Documentation: JSDoc comments on complex functions.
Consistent Naming: camelCase for variables/functions, Pascal Case for components

Functional Testing
I implemented automated test suites for the core modules:

Budget Calculator (BudgetCalculator.test.jsx):
- Verified that income and expense inputs correctly calculate totals.
- Validated the dynamic logic for displaying "Surplus" vs "Deficit" labels based on user input.
- Result: Pass. Logic ensures mathematical accuracy for financial planning.

Learning System (LessonDetail.test.jsx):
- Tested that lessons load correct content based on URL parameters.
- Verified the "Mark Complete" functionality and persistence in local Storage.
- Ensured navigation links to quizzes only appear for valid lessons.
- Result: Pass. Educational flow is logical and persistent.

Quizzes (Quiz.test.jsx):
- Validated question rendering and answer selection logic.
- Tested the score calculation engine and the final results display.
- Verified that quiz results are stored to track user average scores.
- Result: Pass. Gamification mechanics work as intended.

Usability Evaluation
- Accessibility: Used semantic HTML (buttons, inputs) to ensure screen reader compatibility.

- Feedback Loops:
Added visual cues (checkmarks for completed lessons, color-coded surplus/deficit) to guide the user.

Overall Scope

MoneyWise successfully delivers a comprehensive financial literacy platform addressing a documented gap amongst young Irish adults. With almost 70% of young Irish adults struggling to grasp basic concepts, and significant gaps identified in adult financial literacy nationwide (PTSB, 2025), this application provides an accessible and engaging solution. This application combines education, assessment, and tools in one experience making it a unified platform and includes engaging elements that progress tracking, and quiz scoring encourage continued engagement.

Future Enhancements

Phase 2 Features (Identified but not implemented due to time constraints):

- Social features: Discussion forums, peer learning communities
- Advanced calculators: Mortgage calculator, retirement planning, investment simulators
- Goal setting: User-defined savings goals with progress tracking
- Notifications: Email/push reminders for continued learning
- Admin panel: Content management system for updating lessons
- Quiz explanations for incorrect answers would enhance learning
- More comprehensive test coverage

References

Browne, Oliver. "Here's How Financial Literacy Affects the Money in Your Pocket." RTE.ie, 23 Nov. 2025, www.rte.ie/brainstorm/2025/1123/1493145-financial-literacy-money-purchases-savings-debt-finance-subscriptions/, urn:epic:1493145.

"Irish Funds Announces next Phase of Transition Year Programme to Enhance Financial Literacy among Students | Irish Funds Industry Association | International Investments." Irish Funds Industry Association Clg, 2024, www.irishfunds.ie/news-knowledge/news/irish-funds-announces-next-phase-of-transition-year-programme-to-enhance-financial-literacy-among-students/.

"PTSB Reflecting Ireland Research Reveals Gap in Financial Literacy amongst Adults in Ireland." Ptsb.ie, 2025, www.ptsb.ie/about-us/notices/2025/june/ptsb-reflecting-ireland-research-reveals-gap-in-financial-literacy-amongst-adults-in-ireland/.