Lab 2 – CreditTrax Product Specification

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1   Introduction

1.1. Purpose

This document defines the technical requirements and system architecture for CreditTrax. It is written for developers and serves as a technical reference for system implementation.

1.2. Scope

CreditTrax aims to simplify financial management for young adults through a web-based mobile application that implements Debt Tracking, AI-driven Budgeting Recommendations, and simulates financial scenarios with What-If Analysis and bot-driven discussions. It benefits users by providing insights into financial obligations and their future impact, supporting better decision-making with tools like the Personalized Financial Dashboard, What-If Analysis, and Goal Setting. The system includes educational Financial Literacy Tools and motivational Community Rewards to enhance user engagement. It does not process payments or manage transactions, relying on user input for tracking and analysis.

1.3. Definitions, Acronyms, and Abbreviations

Annual Inflation Rate: The percentage increase in the cost of goods over the course of a year.

APR (Annual Percentage Rate): The annual rate charged for borrowing money as a percentage of the total borrowed amount.

Credit Score: A three-digit number that reflects an individual's creditworthiness based on their credit history, influencing lenders' decisions on loan approvals and interest rates.

Debt: Money that is borrowed and must be repaid, typically with interest.

Financial Literacy: A strong understanding of essential financial skills and concepts, such as budgeting, saving, and debt management.

Financial Management: The process of budgeting, saving, and monitoring personal finances to achieve one's financial goals.

Financial Uncertainty: The fear or concern about one's financial situation, often relating to income, debt, or future stability.

Student Loans: Money borrowed by an individual for educational purposes (for tuition, transportation, textbooks, etc.) which must be repaid with interest.

"What-if" Analysis: A technique that allows users to simulate various (financial) scenarios and visualize their potential outcomes.

Young Adults: Individuals between the ages of 18 to 34 who are in the workforce and have limited experience with personal finances.

Young Professionals: Young adults aged 18-34 who are in the workforce, in college, or have recently graduated.

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1.5. Overview

The remaining sections of this SRS provide a technical description of CreditTrax, guiding developers through its implementation. Section 2, "Overall Description," details the system's architecture via the Major Functional Component Diagram (MFCD), specifies prototype feature implementations, and defines user characteristics, constraints, and dependencies essential to development.

2   Overall Description

2.1   Product Perspective

CreditTrax operates as a three-tier web-based mobile application optimized for iOS and Android devices, hosted on a virtual machine provided by the project's mentor. It integrates with external APIs, including OpenAI for AI-driven budgeting and What-If Analysis with bot-driven discussions, and GameLayer for Community Rewards, enhancing financial insights and user engagement with the system.

Figure 1

Major Functional Components Diagram
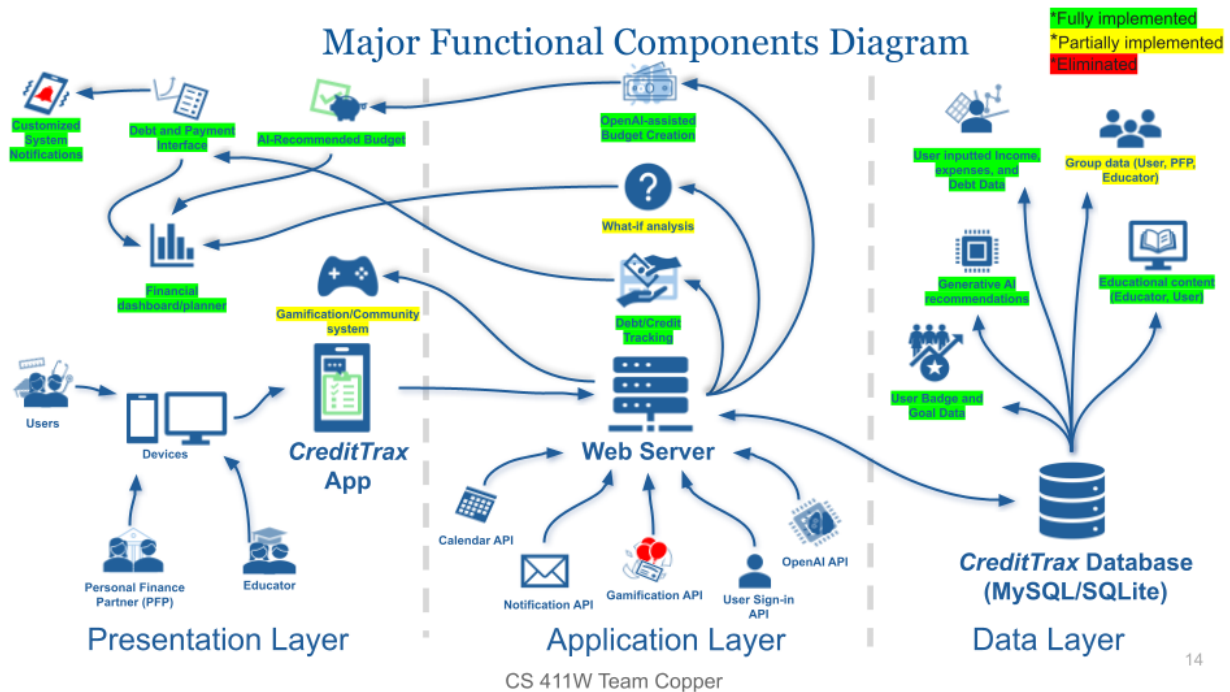
The presentation layer is where frontend development occurs, utilizing HTML5, CSS,

TailwindCSS, and Alpine.js to implement a responsive user interface accessible vie web

browsers. The application layer handles backend development with PHP and the Laravel

framework to process What-If Analysis, budgeting logic, and API integrations with OpenAI and

GameLayer. The data layer manages database operations, utilizing SQLite to store user profiles,

debts, goals, budget, and What-If Analysis reports. API interactions include calls to OpenAI for

real-time budgeting recommendations and bot-driven What-If Analysis discussions, and

GameLayer for reward badges and point tracking.

2.2 Product Functions

CreditTrax provides a set of features to assist young adults in managing their personal finances through a web-based mobile application. These include Account Management for user authentication and profiles, Debt Tracking for monitoring financial obligations, Goal Setting for defining financial targets, Budgeting Recommendations driven by OpenAI's API, and What-If Analysis for simulating scenarios with bot-driven discussions via OpenAI's API. Additional features like Financial Literacy Tools and Community Rewards enhance user engagement, though their prototype implementations are limited.

Table 1

RWP vs Prototype 1

Real World Product vs Prototype

*Fully implemented
*Partially implemented
*Eliminated

Functionality Group	Feature	RWP	Prototype	Notes
Account Management	Add/Delete Account	Full add/delete functionality for user accounts	Fully Implemented	Can use stand-in accounts
	Login/Authentication	MFA and session management	Fully Implemented	Use stand-in accounts
	Profile Management	Customizable user profile	Fully Implemented	Use stand-in accounts
Debt Tracking	Add/Edit Debt	Comprehensive tracking editing	Fully Implemented	
	Smart Payment Reminders	Customizable with escalation	Eliminated	Unsure of method used to send reminders to user without Google APIs
Budgeting	Personalized Budget Creation	AI-driven recommendations	Fully Implemented	Focus generative AI use in what-if analysis
	Expense Tracking	Detailed tracking with visuals	Fully Implemented	
	Budget Adjustments	AI-driven recommendations based on spending patterns	Fully Implemented	Focus generative AI use in what-if analysis

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Table 2

RWP vs Prototype 2

Most core features like Account Management, Debt Tracking, Budgeting, Goal Tracking,

What-If Analysis, and Personalized Financial Dashboard are fully implemented in the prototype,

providing a bases for financial management and demonstrating proof-of-concept. Financial

literacy tools and community rewards are partially implemented with basic content and badge

data. Smart payment reminders, initially planned, have been eliminated from the prototype

scope.

2.3 User Characteristics

CreditTrax targets young adults aged 18-34 as its primary users, typically newly integrated workforce members or recent graduates with limited financial literacy and basic mobile device proficiency. These users aim to better manage their finances and improve financial literacy. They require minimal financial expertise, but a mild familiarity with web browsers and mobile devices is required to navigate the user interface and input data like debts, goals, and income.

Usage scenarios include daily checks of the Personalized Financial Dashboard to monitor debts, spending, and goal progress, weekly sessions to review Budgeting Recommendations powered by the OpenAI chatbot, and occasional use of What-If Analysis to simulate scenarios with bot-driven discussions for guidance.

Constraints include users' lack of familiarity with financial terms, requiring intuitive design and clear guidance.

2.4 Constraints

CreditTrax requires a consistent internet connection for web-based access and communications with OpenAI and GameLayer. Legal constraints include data privacy concerns while handling user's financial information.

2.5 Assumptions and Dependencies

CreditTrax depends on third-party APIs like OpenAI for Budgeting Recommendations and What-If Analysis bot discussions, and GameLayer for Community Rewards badges. It requires a Virtual machine for deployment, SQLite for data storage, and PHP with the Laravel framework for backend functionality. The system assumes consistent access to APIs, a stable internet connection, and accurate user-inputted data like debts, goals and income for optimal operation.