

Lab 2 – CreditTrax Product Specification

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1 Introduction

1.1 Purpose

The purpose of this document is to provide the software requirements specification for the CreditTrax prototype. This document is intended for developers gaining knowledge about the prototype.

1.2 Scope .

CreditTrax is a finance web application that leverages AI to educate young adults in personal finance while helping them manage their finances.

The core feature is the what-if analysis, allowing young adults to simulate certain financial scenarios such as paying off debt or saving money, and generating detailed report for the scenario. In addition, the what-if analysis can use AI to generate a recommendation on whether the simulated scenario can be reasonably achieved by the user. Young adults can use the AI as a chatbot to converse with regarding their budget, financial goals, what-if analysis, or general finance topics.

This product is also intended to use as a budgeting tool so young adults can track expenses, a debt tracker to help young adults in debt, a feature to create and track goals, a gamification feature to make personal finance enjoyable, and a community page for young adults to connect with each other as well as with their professors and personal finance partners.

CreditTrax will not pull credit information for the user nor report their credit information to credit agencies. The app will also not pay the user's bills by itself and create new lines of credit for the user.

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

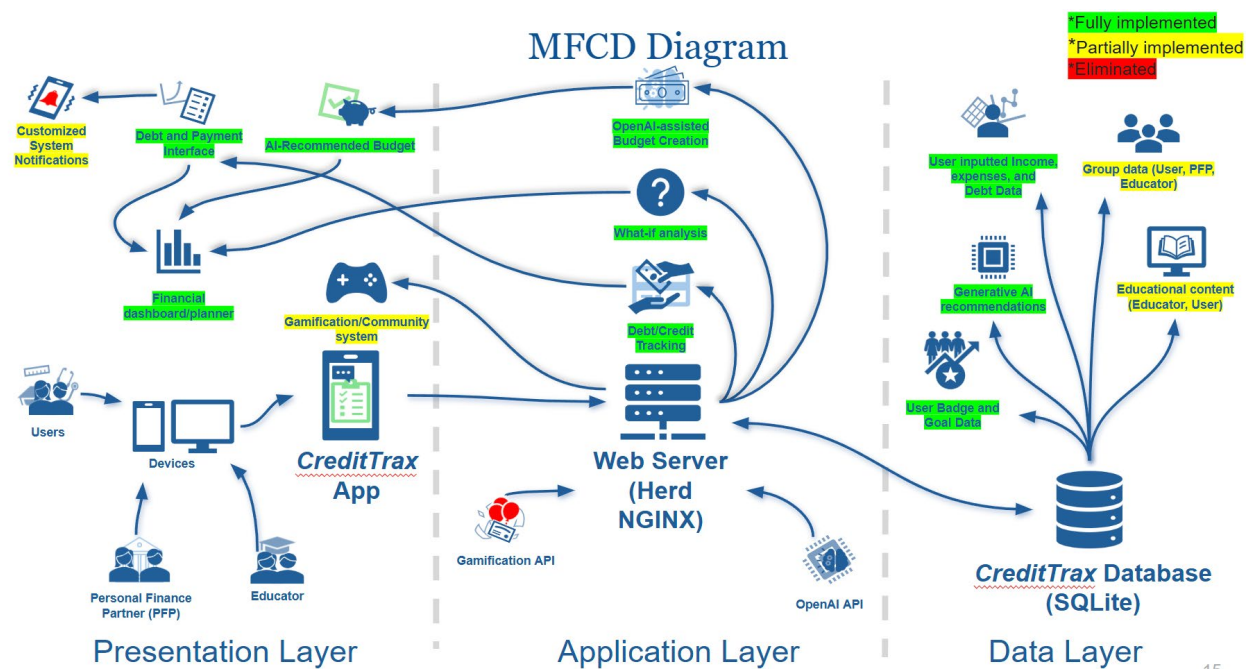
Section 2 of this document describes CreditTrax's software features, configurations, and interfaces, and their requirements for implementing the prototype.

2 General Description

CreditTrax will be developed as a web application deployable from Laravel Forge virtual machine. It will have three interfaces with the primary one being for young adults while the other two are for personal finance partners and educators. The interfaces will be developed for computer and phone screens. While most features will be implemented in the prototype, some features will either be partially implemented or eliminated.

2.1 Product Perspective

CreditTrax's prototype architecture is divided into three layers as seen in Figure 1: The presentation layer, application layer, and data layer. Laravel and its dependencies such as Filament, Alpine, and TailWind are used to develop the user interface in the presentation layer. HTML, CSS, and JavaScript are used to implement the frontend. The application layer will also be implemented by Laravel with PHP as the programming language. The data layer is the database where SQLite will be used to store data regarding the user's financial data, community, and what-if scenarios. OpenAI API will be used to help develop the AI-assisted feature and GameLayer API will be used to implement the gamification feature.

Figure 1: Major Functional Components Diagram

2.1.1 Hardware Interfaces

The prototype requires a computer with internet access and an operating system of Mac, Windows, or Linux.

2.1.2 Software Interfaces

The software needed to develop the prototype includes Laravel and its packages such as TailWind, Alpine, Filament; Charts.js, a JavaScript package used to create charts in the frontend, a virtual machine hosted by a server in Laravel Forge, SQLite, OpenAI API, and GameLayer API.

2.1.3 User Interfaces

A computer with internet access, a keyboard, and a mouse is required to interact with the prototype.

2.1.4 Communications Interface

CreditTrax will use HTTP for communication through a web browser.

2.2 Product Functions

Most of the features from the real world product will be implemented in the prototype as seen in Table 1. For the young adult, these features are account creation, debt source creation, budgeting features such as AI-driven budget creation, expense tracking, and budgeting adjustments, creation of goals, AI-assisted what-if analysis, and the financial dashboard. The features that are partially implemented are the gamification feature, community page, and educational resources. For educators and personal finance partners, the dashboard will be fully implemented but the community page is partially implemented. The only feature being eliminated from the real world product is the smart payment reminders for the debt feature.

Table 1: CreditTrax Feature Description and Prototype Implementation

Feature	Description	Prototype
Add/Delete Account	Full add/delete functionality for user accounts	Fully Implemented
Login/Authentication	MFA and session management	Fully Implemented
Profile Management	Customizable user profile	Fully Implemented
Add/Edit Debt	Comprehensive tracking and editing	Fully Implemented
Smart Payment Reminders	Customizable with escalation	Eliminated
Personalized Budget Creation	AI-driven recommendations	Fully Implemented
Expense Tracking	Detailed tracking with visuals	Fully Implemented
Budget Adjustments	AI-driven recommendations based on spending patterns	Fully Implemented
Short/Long-Term Goals	Customizable short-term goal tracking	Fully Implemented
Goal Progress Visualization	Visual tracking	Fully Implemented
AI-assisted projection/simulation	Use of AI for what-if analysis	Fully Implemented

Create/Simulate scenarios	Algorithmic Impact simulations	Fully Implemented
Comprehensive Financial Dashboard	Budget and debt visualizations, goal progression, and general rewards stats	Fully Implemented
Badges and Rewards	Custom badges for achievements	Partially Implemented, basic badges for demonstration
Community/Group page	Full community functionality with leaderboards	Partially Implemented, can create groups and request friends
Educational Resources	Upload external resources, show financial concepts embedded in other features	Partially Implemented, only show embedded finance information

2.3 User Characteristics

The main users of CreditTrax are the young adults, anyone ages 18-34 who are in college, vocational school, and/or working in a job or career. Technical expertise can be basic if they have experience with using a computer. In addition, CreditTrax has features for college professors who want to provide the app to their students as a tool as well as personal finance partners who also want to offer a tool to their clients.

2.4 Constraints

A legal constraint for CreditTrax is the notion that AI is not 100% accurate and should not be used for official financial advice. The AI is ultimately there to recommend and educate on basic financial concepts and it is up to the user's discretion to use what the AI has generated.

2.5 Assumptions and Dependencies

Laravel, Laravel Forge, TailWind CSS, Alpine, Chart.js, Filament, OpenAI API, and GameLayer API are dependencies needed for CreditTrax to function.