Lab 2 -CreditTrax Product Description

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1 Introduction

1.1 Purpose

CreditTrax is a financial management application designed to assist young adults in managing their finances effectively. The application integrates budgeting, debt tracking, and financial literacy tools into a user-friendly platform. By leveraging AI-powered insights, CreditTrax provides personalized recommendations that help users optimize their spending habits, track outstanding debts, and establish financial goals.

1.2 Scope

The primary objective of CreditTrax is to empower young adults with the necessary financial tools to reduce debt and make informed financial decisions. The application includes AI-driven budgeting, debt tracking, financial literacy resources, and gamification elements. It will be developed as a web application using PHP, Laravel, and cloud-based storage solutions. The prototype will implement core features, such as personalized budget recommendations, debt tracking, and financial goal management, while advanced social and analytics functionalities may be limited in the initial phase.

1.3 Definitions, Acronyms, and Abbreviations

AI-Powered Budgeting: The use of artificial intelligence to analyze a user's financial data and generate personalized budgeting recommendations based on income, expenses, and debt obligations.

Debt Tracking: A feature that allows users to monitor outstanding balances, interest rates, and

due dates for various debts, such as student loans and credit cards.

Financial Dashboard: A real-time interface displaying a user's financial health through visualizations, such as charts and graphs, to track spending, budgeting, and debt repayment progress.

Financial Literacy Resources: Educational materials, including articles, videos, and interactive guides, designed to teach users essential financial concepts such as budgeting, saving, and debt management.

Gamification: The integration of game-like elements, such as rewards, badges, and progress tracking, to encourage user engagement and motivate positive financial behavior.

Personalized Budgeting Recommendations: AI-generated financial advice tailored to a user's unique financial situation, helping them optimize spending and savings.

Prototype: A preliminary version of CreditTrax developed for testing and demonstration purposes, containing core functionalities but potentially omitting some advanced features.

RWP (Real-World Product): The final, fully functional version of CreditTrax intended for widespread public use, incorporating all planned features.

What-If Analysis: A tool that enables users to simulate different financial scenarios, such as adjusting loan payments or modifying expenses, to predict potential outcomes and make informed decisions.

1.4 References

Consumer Credit - G.19, U.S. Federal Reserve, 9 Sept. 2024,

www.federalreserve.gov/releases/g19/HIST/cc_hist_memo_levels.html.

S. Chernikoff, "How are college costs adding up these days and how much has tuition risen?

Graphics explain," *USA TODAY*, 18 Apr. 2024,

www.usatoday.com/story/news/education/2024/04/18/college-tuition-costs-

graphics/73347491007/.

V. Cariaga, "Saving for the Future: Why Most Young Adults Put Nothing Toward Retirement,"

Yahoo Finance, 17 May 2024, finance.yahoo.com/news/saving-future-why-most-young-

160623467.html.

E. Gravier, "Remind yourself of 'what makes you happy': Blogger shares her advice about

battling debt and depression," *CNBC*, 11 Jan. 2024, www.cnbc.com/select/debt-and-mental-

health/.

"How to Get out of Debt," *Consumer Advice*, 1 Mar. 2018, consumer.ftc.gov/articles/how-get-

out-debt.

C. Horymski, "Consumer Credit Card Report," *Experian*, 4 Nov. 2019,

www.experian.com/blogs/ask-experian/state-of-credit-cards/.

D. Martinez and M. Seikel, "Credit card interest rate margins at all-time high," *Consumer

Finance*, 22 Feb. 2024, www.consumerfinance.gov/about-us/blog/credit-card-interest-rate-

margins-at-all-timehigh/.

K. Martincheck and M. Santillo, "Many Young Adults Have Taken on Debt. It Could Jeopardize Their Financial Futures," *Urban Institute*, 18 Sept. 2024, www.urban.org/urban-wire/many-young-adults-have-taken-debt-it-could-jeopardizetheir-financialfutures#:~:text=Young%20adults%20who%20don%27t,by%20up%20to%20100%20points.

National Institute of Standards and Technology, "NIST Cybersecurity Framework: A Framework for Improving Critical Infrastructure Cybersecurity," 2020, www.nist.gov/cyberframework.

C. Rugaber, "U.S. inflation at 9.1 percent, a record high," *PBS News*, 13 July 2022, www.pbs.org/newshour/economy/u-s-inflation-at-9-1-percent-a-record-high.

I. Rademacher and G. Melford, "Young Adults and Consumer Debt: The Quiet Crisis Next Time," *New America*, www.newamerica.org/millennials/reports/emerging-millennial-wealth-gap/young-adults-and-consumer-debt-the-quiet-crisis-next-time/.

E. Suknanan and J. Gravier, "Mint Is Gone — Here Are Some Alternative Budget Apps to Consider," *CNBC*, 9 Jul. 2024, www.cnbc.com/select/mint-budgeting-app-is-going-away-here-are-some-alternatives/.

R. Safier and A. Harrison, "Student Loan Debt: Averages and Other Statistics in 2023," *USA TODAY Blueprint*, 7 Sept. 2023, www.usatoday.com/money/blueprint/student-loans/average-student-loan-debt-statistics/.

"US External Debt, 2003 – 2023," *CEIC Data*, www.ceicdata.com/en/indicator/united-states/external-debt/.

M. Winters, "The 10 U.S. places with the highest cost of living—No. 1 costs more than double the national average," *CNBC*, 29 June 2024, www.cnbc.com/2024/06/29/us-highest-cost-of-living.html.
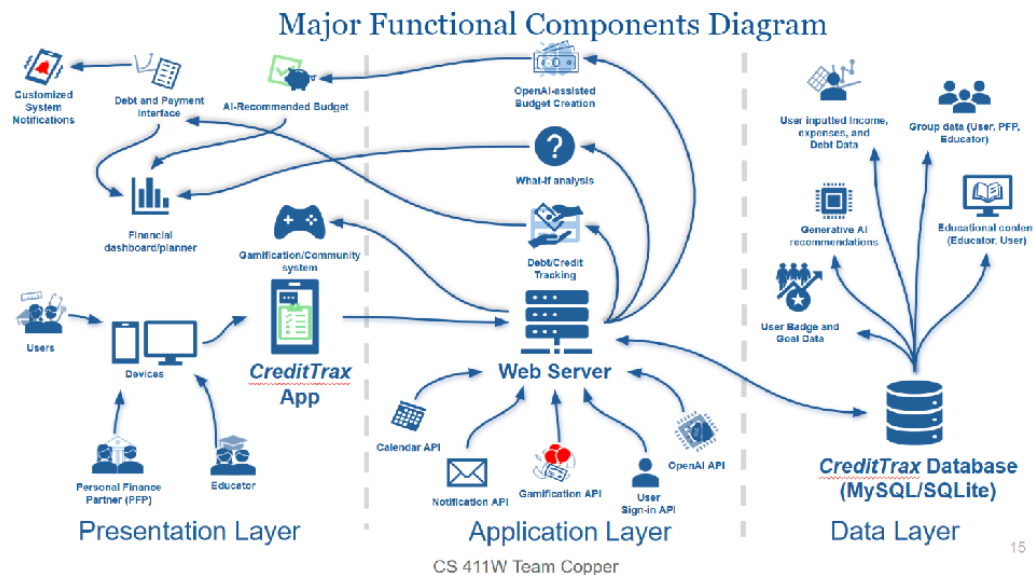
2 General Description

2.1 Product Perspective

CreditTrax is designed as a web application accessible via desktop and mobile browsers. It provides users with an intuitive and interactive platform to manage their financial health efficiently. By integrating AI-driven insights, the application allows young adults to make informed financial decisions, set realistic budgets, and track their spending habits over time. The system's architecture consists of three main layers that facilitate seamless user interaction and secure data management. The presentation layer delivers a user-friendly interface with a financial dashboard and profile management, ensuring accessibility across devices. The application layer processes AI-driven budgeting recommendations, debt tracking functionalities, and payment notifications. The data layer securely stores financial information, offering real-time insights into financial trends and user behavior.

The development of CreditTrax follows a modular approach, ensuring flexibility in feature expansion and integration with third-party financial APIs. The AI component enhances user experience by analyzing financial patterns and suggesting optimal spending habits. The system also incorporates a reward mechanism to encourage positive financial behaviors, increasing user engagement through gamification elements. By providing a comprehensive financial tool, CreditTrax aims to bridge the gap between financial education and practical

money management, enabling young adults to cultivate financial stability and long-term wealth-

building strategies.

Figure 1: Major Functional Components Diagram

CreditTrax is designed as a web application accessible via desktop and mobile browsers.

It consists of three main layers. The presentation layer is responsible for the user interface,

including the financial dashboard and profile management. The application layer manages core

functionalities such as AI-driven budgeting, debt tracking, and notifications. The data layer

ensures secure storage of user financial data, integrated with cloud solutions.

2.2 Product Perspective

CreditTrax is built to empower users by offering a range of financial tools that address

debt management, budgeting, and financial literacy. The application's personalized budgeting

feature enables users to create dynamic budgets based on their income, expenses, and financial

goals. AI-driven recommendations analyze spending habits and suggest optimizations to enhance

savings and reduce unnecessary expenditures. The debt tracking system monitors outstanding balances, interest rates, and due dates, ensuring that users remain aware of their financial obligations. Through real-time payment reminders and automated alerts, CreditTrax minimizes the risk of late payments and penalties, ultimately supporting responsible financial management.

The financial dashboard is a central feature that visually presents data analytics, providing users with actionable insights into their financial health. Users can leverage the What-If Analysis tool to simulate various financial scenarios, such as adjusting loan payments or modifying their monthly budget. This feature allows them to make informed decisions that align with their long-term financial aspirations. Additionally, CreditTrax incorporates gamification elements such as achievement badges and progress tracking to incentivize users to maintain disciplined financial habits. The integration of educational resources further supports users by enhancing their financial literacy, equipping them with the knowledge needed to navigate the complexities of personal finance effectively.

CreditTrax provides personalized budgeting using AI-driven recommendations based on income, expenses, and financial goals. Debt tracking helps users monitor outstanding balances, interest rates, and payment due dates. The financial dashboard presents visual analytics that offer insights into financial health. Gamification elements such as badges and rewards encourage positive financial behavior. The What-If Analysis tool allows users to simulate financial scenarios for better decision-making.

2.3 User Characteristics

The primary users of CreditTrax are young adults between the ages of 18 and 34, including college students, recent graduates, and young professionals who are in the early stages

of financial independence. This demographic often struggles with student loans, high credit card

interest rates, and limited financial literacy, making them highly susceptible to poor money

management and debt accumulation. CreditTrax addresses these challenges by providing a

guided financial management system that simplifies budgeting, promotes informed spending

habits, and encourages proactive debt repayment.

These users typically have varying levels of financial knowledge, necessitating an

application that is both intuitive and educational. CreditTrax ensures accessibility by offering an

easy-to-navigate interface with clear financial insights and interactive tools. Many young adults

prefer digital financial solutions over traditional financial advisement, making an AI-driven

platform like CreditTrax an effective solution for their needs. Additionally, users are likely to

benefit from goal-setting tools and rewards, which reinforce positive financial behaviors and

motivate consistent engagement with the platform.

The target users are young adults aged 18-34, including college students, recent

graduates, and young professionals. These users typically face financial challenges such as

student loans and high credit card interest rates, making financial literacy and budgeting essential

for them.

2.4 Constraints

Security and privacy must be prioritized, ensuring user financial data is securely

encrypted and stored. The application must be compatible with modern web browsers to provide

seamless access. Data accuracy is critical, as AI recommendations should be based on precise

financial information.

2.5 Assumptions and Dependencies

It is assumed that users will provide accurate financial data for AI-driven insights to be effective. The application will require an internet connection for real-time updates and notifications. The feasibility of integrating third-party financial APIs, such as those for calendar reminders, is also assumed.