Lab 1 – CreditTrax Product Description

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1   Introduction

Financial instability is an increasingly prevalent issue for young adults in the United States. Many find themselves burdened by student loans, credit card debt, and rising living expenses, all while lacking the financial literacy skills necessary to navigate these challenges. As of 2024, student loan debt in the U.S. has reached over $1.74 trillion, with about 60% of college graduates carrying this burden post-graduation (Safier & Harrison, 2025). The average interest rate on credit cards has risen from 12.9% in 2013 to a record high of 22.8% in 2023, further compounding financial strain (U.S. Federal Reserve, 2024). The consequences of these financial burdens extend beyond immediate financial challenges. They delay life milestones such as home ownership, marriage, and retirement savings, and impact mental health. A significant percentage of those in debt experience stress, anxiety, and even depression.

Despite the proliferation of financial management tools, existing apps often fail to address the multifaceted nature of young adults' financial struggles. Some tools focus on budgeting, others on debt management, and few combine these essential functions within a single, user-friendly interface. Additionally, many current solutions lack tailored recommendations that account for the unique financial needs and constraints of young adults, leading users to seek guidance from multiple apps or forego financial management altogether. This fragmented approach leaves significant gaps, particularly for young adults who may be new to budgeting and managing debt.

In response to these gaps, CreditTrax aims to provide an all-encompassing solution that merges debt tracking, budgeting recommendations, and financial literacy tools. This AI-powered app will offer a personalized financial dashboard, spending habit tracking, reminders for timely debt payments, and real-time feedback to improve financial decisions. By educating users on

financial fundamentals and enabling them to establish both short- and long-term goals, CreditTrax promotes positive financial habits that can reduce debt-related anxiety and set young adults on a path toward financial stability.

In conclusion, CreditTrax seeks to empower young adults by equipping them with the knowledge and tools needed to manage their finances more effectively, reduce debt, and gain control over their financial future.

2   Product Description

CreditTrax is a comprehensive financial management application tailored to address the unique challenges faced by young adults in the United States. By integrating debt tracking, personalized budgeting recommendations, and financial literacy tools, CreditTrax empowers users to take control of their finances. The app is designed to be user-friendly and engaging, using AI-driven insights and gamification to foster healthy financial habits and reduce the stress associated with managing debt.

In addition, the goal of CreditTrax is to provide young adults with the tools and knowledge they need to achieve financial stability. Specifically, the app aims to help users track and manage debts like student loans and credit cards, while also offering actionable budgeting advice customized to their unique financial situations. The app also educates users on fundamental financial concepts, encouraging smarter financial decisions and motivating them through gamified features like badges and progress tracking.

2.1   Key Product Features and Capabilities

CreditTrax offers a wide array of features designed to make financial management accessible and effective. The app allows users to track their debts by entering details such as credit card balances, student loans, interest rates, and payment due dates, providing a clear, organized view of their financial obligations. Budgeting recommendations are powered by AI, which analyzes the user's income, expenses, and debt to generate tailored suggestions for optimizing their finances. Users also have access to a personalized financial dashboard that provides real-time insights with visualizations such as graphs and charts to monitor spending habits and debt progress.

Another standout feature is the "what-if" analysis tool, which enables users to simulate various financial scenarios, such as increasing loan payments or reducing discretionary spending, and see the projected outcomes. To keep users motivated, CreditTrax incorporates gamified elements like badges and rewards, which recognize progress toward financial milestones. Finally, the app provides robust financial literacy resources, including educational materials such as articles, videos, and interactive guides, to help users build a strong foundation of financial knowledge.

2.2   Major Components (Hardware/Software)

Figure 1: Major Functional Components Diagram

Major Functional Components Diagram

CS 411W Team Copper
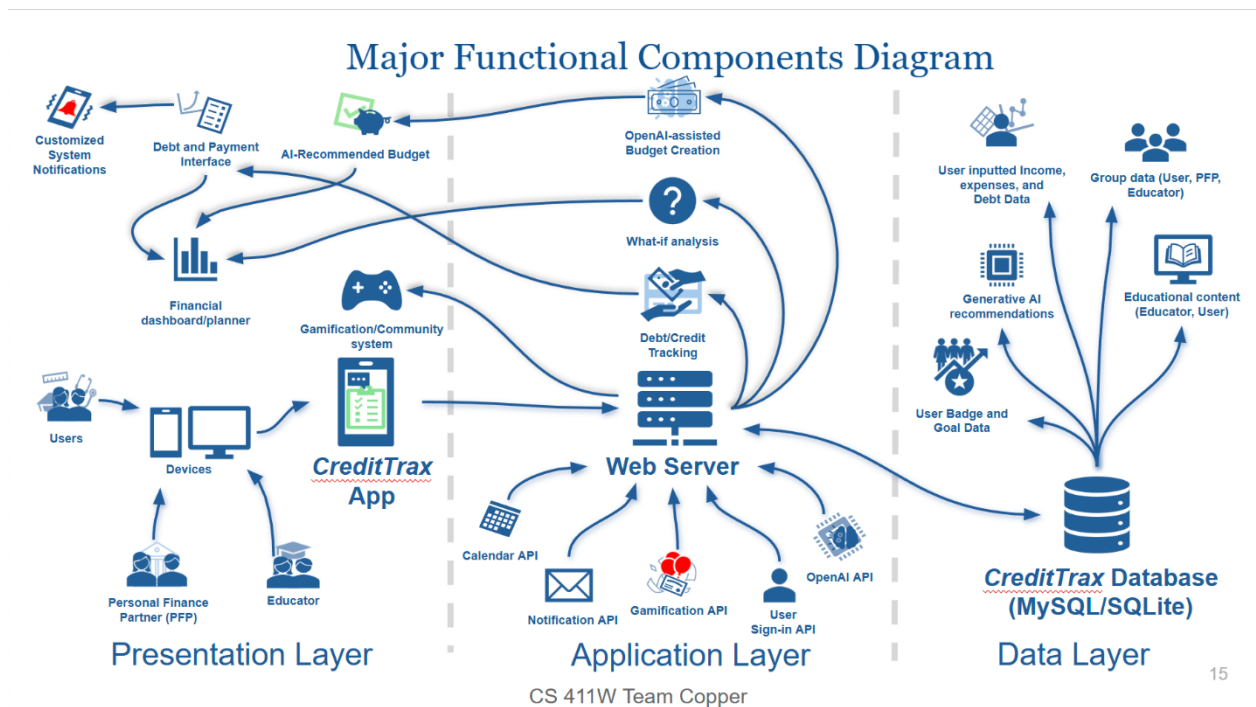
The architecture of CreditTrax is divided into three main components: the presentation layer, application layer, and data layer. The presentation layer includes user-facing features such as login screens, user profiles, and the financial dashboard, all designed to offer an intuitive and seamless user experience. The application layer handles the core functionality of the app, including debt tracking, AI-powered budgeting algorithms, and notification systems for payment reminders. This layer ensures that all processes are executed efficiently and securely. The data layer stores all user information, such as income, expenses, debts, and progress metrics, leveraging secure cloud storage solutions like Amazon RDS to ensure scalability and data protection. Additionally, CreditTrax integrates external APIs, such as a Calendar API for

scheduling payment reminders and a Badge API to enhance gamification, providing a richer and more engaging user experience.

3   Identification of Case Study

- For whom is this product being developed? Why?

- Identify case study group—the small group of users who will use app prototype and provide feedback.

- Who else might use this in the future?

4   Product Prototype Description

- Provide a top-level description of the CS 411W prototype as it relates to the end product from CS 410 (i.e., the goal).

- Are capabilities reduced or eliminated? Simulated – modeled?

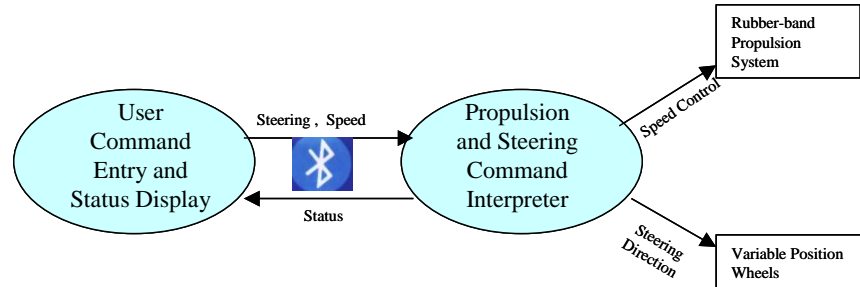- Include a *Table of Comparison between RWP and Prototype* in section 4.2

4.1   Prototype Architecture (Hardware/Software)

- How will the prototype be structured to demonstrate key features of the CS 410 product.

- Provide and describe the *Prototype MFCD*.

Figure 1

Product XYZ Major Functional Component Diagram

<Note the format of labeling the figure: figure/table number should be bold followed by a

line break with the title of figure/table in italics>

4.2 Prototype Features and Capabilities

- What does the prototype demonstrate?

- Why is that significant in showing how the problem is solved?

- How you have demonstrated success?

- How does the prototype address the CS 410 project risk mitigation?

- Describe the functional goals and objectives.

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Table 1

Table of Comparison Between RWP and Prototype

Feature	Prototype	Real World Product
a propulsion system	Rubber band	Belt
fixed position wheels	Same as RWP	Same as Prototype
variable position wheels	Same as RWP	Same as Prototype
cockpit	Simulated using PC-based display and Bluetooth	Operator will use
Exhaust distribution element	Simulated on PC-display	Real combustion

<Note: A figure/table should be embedded within a section. There should be text before and after a table/figure. A section should neither start nor end with a figure/table.>

4.3   Prototype Development Challenges

- Describe the expected challenges to be encountered while completing the prototype – e.g., knowledge missing, capability missing, supporting technology issues.

5   Glossary

- Definitions, acronyms, or abbreviations used in this document. This section should only include those terms or abbreviations that are not commonly known or are unique to your product.

- Terms should be bolded followed by a colon and the definition.

<Note: This must start at the top of a new page>

Example:

Radio Frequency Identification (RFID): an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. An RFID tag is an object that can be attached to or incorporated into a product, animal, or person for the purpose of identification using radio waves.

6   References

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5. Safier, Rebecca, and Ashley Harrison. *Student Loan Debt: Averages and Other Statistics in 2023*. USA TODAY Blueprint, 7 Sept. 2023,

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