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**Final Team Project**

**CSC 4022-470 Secure Software Engineering**

**FinApp**

**Financial Insights Web Application**

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# Project Overview

This project aims to create a user-friendly web application for financial insights, which will allow users to securely view and visualize their financial data from multiple different sources, including bank accounts, stocks, and liquid assets. The primary data source will be Plaid API, with possible integrations of other APIs for stocks and cryptocurrency data.

# Project Goals

1. Provide users with a centralized platform to monitor their financial accounts and investments.
2. Deliver intuitive data visualization through interactive charts and graphs.
3. Ensure real-time accuracy and security through Plaid API integration.
   * Consider additional APIs for stock market and cryptocurrency data.
4. Create a user-friendly and efficient interface for a smooth user experience.

# Project Features

The project scope outlines the specific areas of focus and responsibilities:

* **User Authentication:** Users will have the option to create accounts and securely log in to the platform.
* **Financial Overview:** Users will be presented with an intuitive dashboard that provides an overview of their financial assets, including bank account balances, stock portfolios, and liquid assets.
* **Data Visualization:** This web application will consist of interactive charts and graphs to help users visualize their financial data effectively.
* **Plaid API Integration:** This application’s functionality will rely on the Plaid API to fetch and update user financial data.
* **Stock and Cryptocurrency Data:** Additional APIs will be considered for integrating stock market and cryptocurrency data, offering users a comprehensive financial snapshot.
* **User-Friendly Interface:** The user interface will be designed with ease of use in mind, ensuring a smooth user experience.

# Target Audience

The target audience for this application focuses on casual investors looking to monitor basic transactions and funds on all connected accounts and people who wish to see a nice roundup of all their financials in one application. This application is not anticipated to show advanced analytical data, so any advanced features would be done on the appropriate service.

Project Requirements

Functional Requirements

* + User authentication before full website access and maintained throughout the lifetime.
  + Secure any received data from Plaid/financial APIs. Data needs to be encrypted and securely deleted when it's not needed.
  + Modular, self-contained elements for each financial application connected by the user. These containers will show all relevant data, such as invested funds, transactions, and graphic elements. Data needs to be masked between all containers.
  + Historical data should be polled from plaid/APIs whenever available instead of caching to reduce data exposure.
  + GUI resolution support should consist of various devices and resolutions and browsers.
  + Support HTTPS and restrict the use of HTTP protocols.
  + Create modular graphics and charts for data display.

Non-Functional Requirements

* + Physical security on balances and transactions. The app will only display numeric values when prompted by the user to prevent people from viewing users’ financials ‘over-the-shoulder.'

Project Team

The project team will consist of the following roles sourced from Turing Tribe:

* Project Manager
* Systems Administrator (Backend Developer)
* Frontend Developer/ UX/UI Designer
* Quality Assurance Tester

The diversity of this team will bring a range of skills and knowledge necessary for the successful development and deployment of this financial insights’ web application.

# Project Risks

Preliminary Threat Assessment - While our primary focus is on providing valuable financial insights, we acknowledge the importance of security. Below is a list of our preliminary security considerations:

* **Data Security**
  + Stored data will be encrypted. This includes users’ usernames, passwords, and API keys.
  + Physical security by means of hiding information in the app unless requested by the user.
  + Implement proper account permission on databases such as read-write access.
  + Implement proper data sanitation on all user input received from the program.
    - SQL injection attacks
    - Some mitigation on cross-site-scripting attacks
* **API Security**
  + Proper use of API keys (both private and public).
  + Confirmation from users on the use of Plaid API.
  + Proper verification of requests from the Plaid API.
  + User setting to save/or not save API authentication with their accounts.
* **User Authentication**
  + Users will be prompted to make a secure password. At least 12 characters long, at least one uppercase and one lowercase letter, at least 1 number, and at least one special character.
  + After password confirmation, the user will be prompted with their dual-factor authentication such as email/text.
* **Updates**
  + Updates throughout planning addressing any security risks or flaws.