PROJECT PROPOSAL

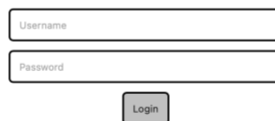## *AI Driven Personal Finance Assistant*

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Project Abstract

What the product does and how it does it from a user point of view – at a high level. (You can include screenshot mockup of the interface)

This application's primary purpose is to apply AI and machine learning models to provide users with the best personalized financial advice. The application will analyze a person's financial data such as expenses, savings, and income, and offer a customized recommendation for budgeting, saving, investing, and managing debt. The front end will begin with a login page where the user must create an account if they have not already. Next, the user will be asked to submit any information about their current finances, like bank statements, credit card statements, or income statements. Next, we will utilize machine learning to categorize expenses and determine the user's spending patterns. Furthermore, the goal will also be to inform the user where the user can reduce expenses. The user will have the choice of picking the option of budgeting tool, saving recommendations, or debt management. The budgeting tool will set a budget for a category. For example, if the user exceeds the amount they should have spent on groceries an alert would be provided to the user about his current plan. The saving recommendation would be based on the user's income and provide a plan on how much the user should spend or save. Based on the time limit I would also like to provide predictive Analytics. This is about predicting future financial scenarios and helping users make the best decisions. The biggest part of this application will be security. We will be dealing with some extremely sensitive documents. Therefore, security will be a huge part of this project.

I have started a little bit of the code, where I built the basic user interface.

Welcome to Financial Assistance

Username

Password

Login

Conceptual Design

UML Diagram

This is just a general UML model of all the classes and how they are connected. I have not created any functions yet. Therefore, I have left the attributes and the functions column blank for the movement as I have not created any functions or attributes. However, this UML model explains how the code will work. It starts from the right side with the app.js. The app.js uses the navigation bar (navbar.js), login page (loginPage.js), financial dashboard page (finacialDashboard.js) and index.js. These are all the classes of the user interface. The index.html class is where the code is run and where the online server runs. financeAPI.js will be used as means of communication between the frontend and the backend. The app.py is the main python class which call the APIs and retrieves the information. Once the information is received it gets updates in the user.py before it gets analyzed. Once all the information has been updated a directory of the information is formed in auth.py. From the user.py the next step is the data_processor.py where all the data is processed of the user. Based on the data the financial_advice_generator,py will apply machine learning algorithms to the available data. Once all the analysis is done the data is moved to finance.py where we create the best plan for the user. This is the flow of the project, of course over time when I figure out more information, I will constantly update the UML model.
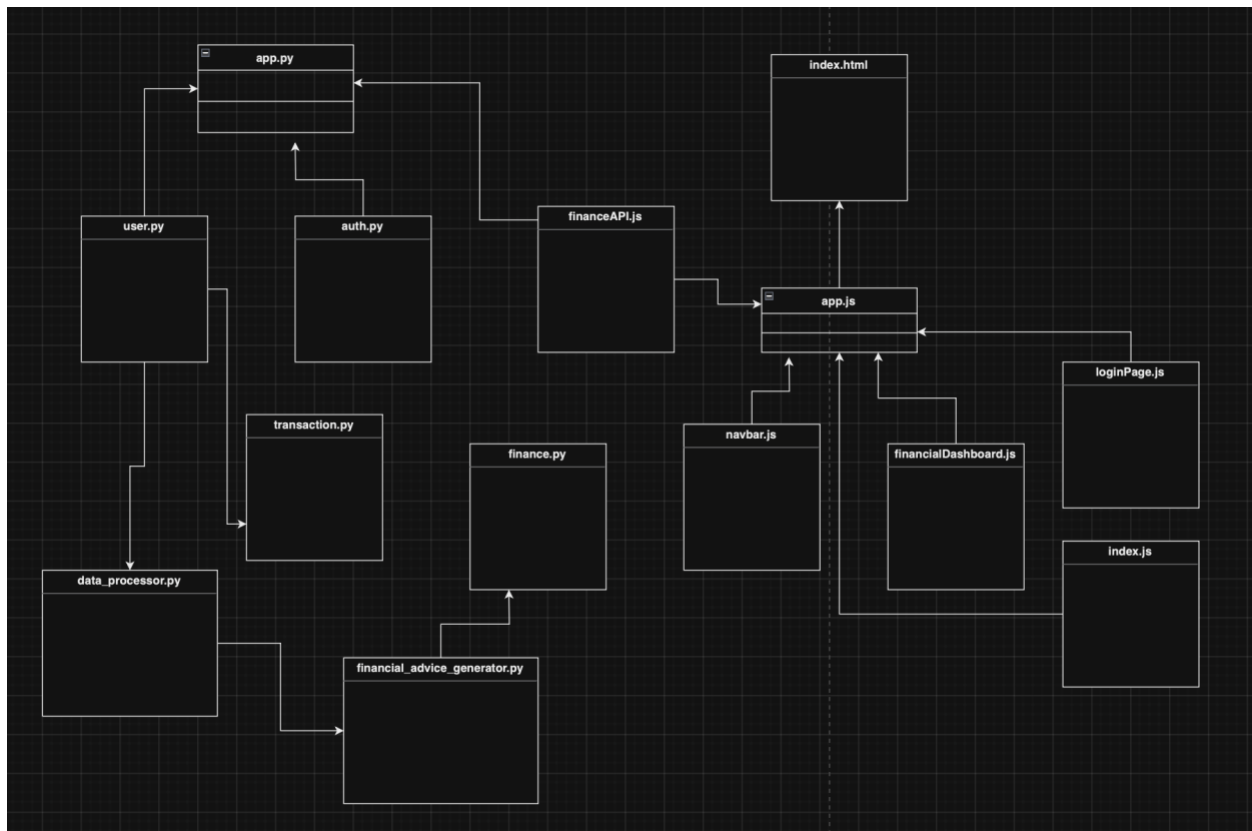
Technology Used

Frontend: JavaScript, React, Typescript, HTML, CSS

Backend: Node.js, Python: Flask, SQL

Proof of Concept

GitHub repository link:
https://github.com/IshanAgg125/AI-Driven-Personal-Financial-Assistant.git

The frontend code is compiling and running. Most of the backend code is working and compiling; however, I haven't had the chance to make the code run together. All the instruction on how to run the code is available in the README file in the repository. Here is a copy of the readme file. The instructions are at the bottom.
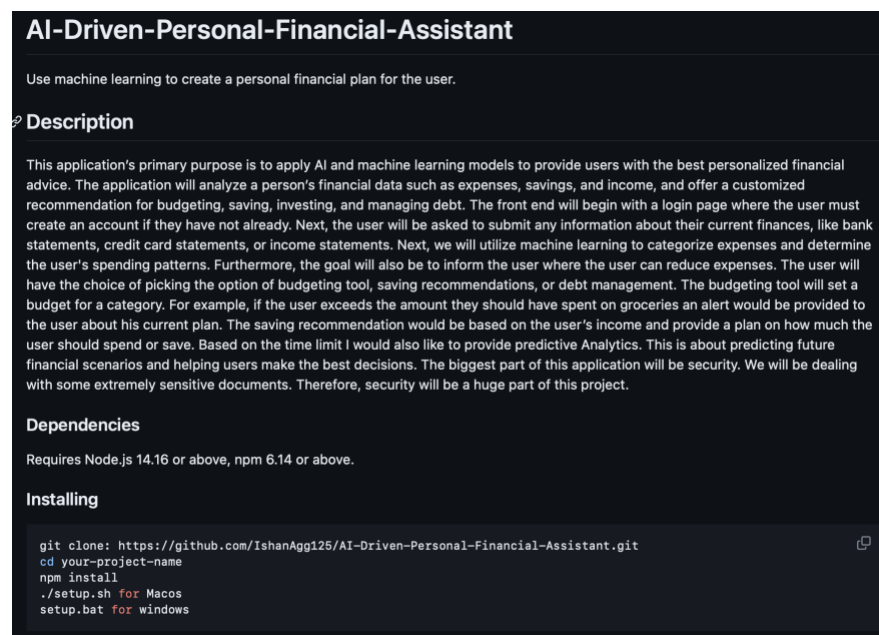
Background

Monarch money is to some extent like what I am building. It syncs all your bank accounts, views balance history, tracks real estate, tracks any assets, and provides personal financial assistance. I will more than likely not be using any of the content from the website. Which includes the UI design, page content, etc.

Here is the website to the page: https://www.monarchmoney.com/features/net-worth

Required Resources

All the required sources for this project are available. No extra technology is required for this project.