Loan Prediction and Processing System

Team: Chutney
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Status Summary

• Work Done in Week 1:

>> Tavishi:
- Identifying and making basic classes in python.
- Finalyzing tools to be used in the project
- Setting up a flask server

>> Manan:
- Setting up basic front end with React with forms and routes.
- Identifying various use cases and identifying patterns to solve them.
- POC on integrating the database with the python backend

• Changes or Issues Encountered: Has anything changed so far in your approach to the project from the initial design in Project 5?
- There have been no major changes till now.
- We have identified more fields that need to be stored in the table.
- Integrating various tools like React-Flask-Python can take some work. One use case being, getting the form inputs to the Python code to process.
- Incorporating async database calls with the Class design. In Python, we cannot make the constructor (__init__) as asynchronous. Solution is to use the factory pattern. (Luckily, we were already implementing this for Client. But, as we implement further, we might need a similar solution in other places such as the LoanPredictionForm).

• Patterns: Now that you have more of your system implemented, please describe the use of design patterns so far in your prototype and how they are helping you or your design.
- Client is being created using the Factory pattern. This enables making the create call async to support database create/update calls.
- Manager class is singleton.
- Manager is also an observer over the clients. On each set interval, it'll go through the clientList and update each client regarding various events, payment reminders, etc.
- Manager will also command the bank and client to take various actions depending on the situation. (Yet to be implemented.)

Class Diagram

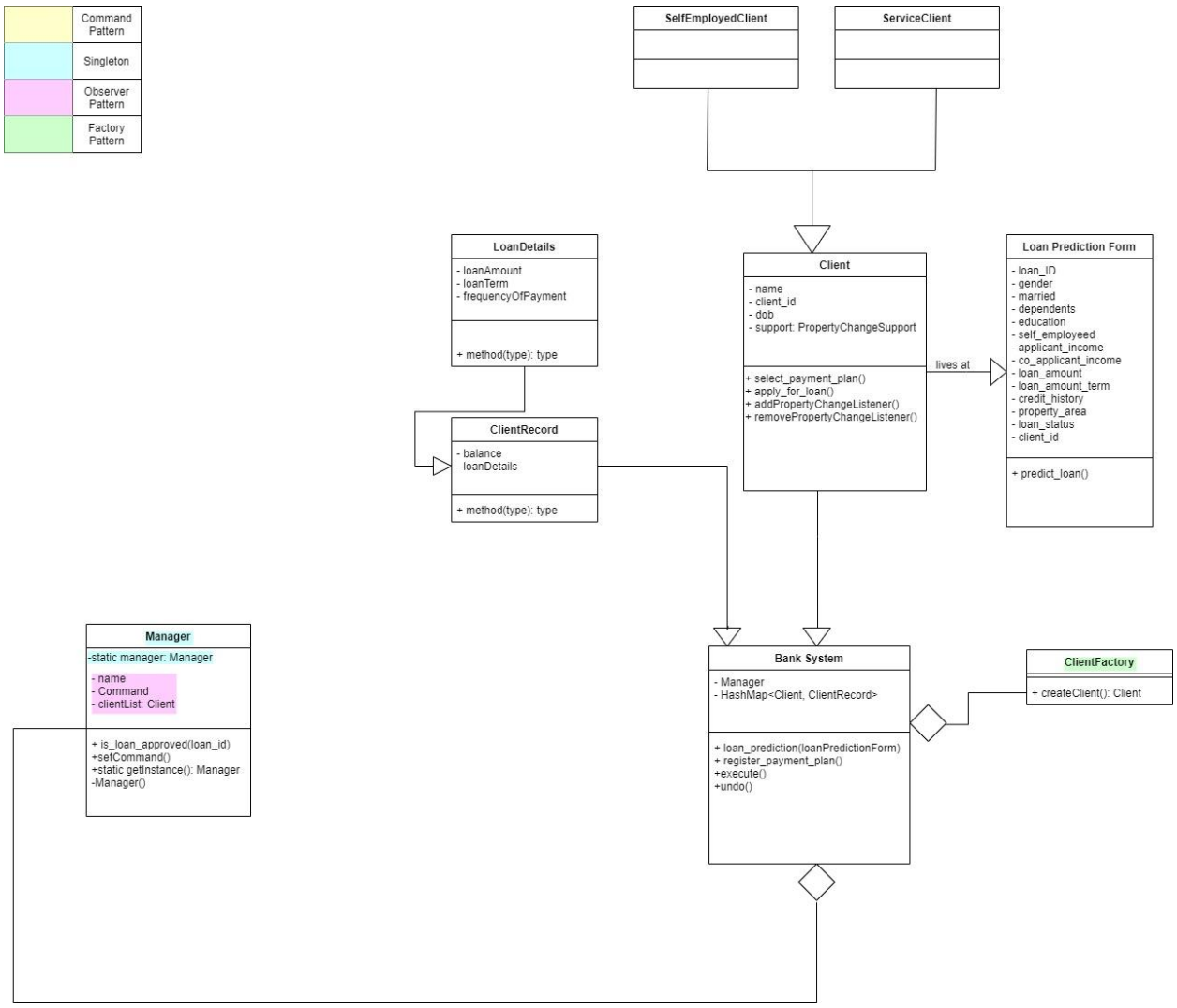

Figure 1: Class Diagram

Plan for Next Iteration

For the next iteration, we plan to improve the existing design of the web application.
This will involve additional UI elements, improving the react app and creating an interactive and intuitive interface to enable ease of access.

We will integrate the postgresql database with the react app by using flask as the middle layer. This will allow the loan form data collected from the user to be passed through the machine learning predictor directly.

In addition to this, we plan on implementing some more design patterns such as the command pattern. As depicted in the previous update, the manager will trigger loan events using the command patterns. We will also look for the scope to make the project more object oriented by using as many design patterns as possible.

We plan on completing all the tasks listed above by 07/21

The latest version of the code for the project can be found at:
https://github.com/thatgeekyperson/OOADProjectSU21/tree/main/Project6