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Baba-Bank – TI-515 Web Programming

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Introduction

As part of our project, we developed a website called Bababank, an interactive and intuitive banking system designed to meet the needs of bank advisers and customers. This project is part of our learning process and our desire to apply technical skills in a concrete and realistic environment.

Bababank was developed using programming languages and techniques seen in class. The front end is based on the Vue.js framework, guaranteeing a dynamic and responsive user interface. The backend was built using Node.js and the Express framework, ensuring efficient query management and fluid communication with a MySQL database, where sensitive user, transaction and loan data is stored securely.

Bababank enables customers to manage their finances simply and transparently, with features such as applying for a loan from their bank advisor and making payments to other accounts. Advisers, for their part, have tools at their disposal to assess loan applications and provide personalised follow-up for their customers.

The aim of this report is to detail the design and development stages of our project using various graphs discovered during the course, presenting the technological choices made, the system architecture and the main functionalities. In this way, we hope to demonstrate our mastery of the elements seen during the course and our ability to work together effectively to produce a complete and functional IT project.

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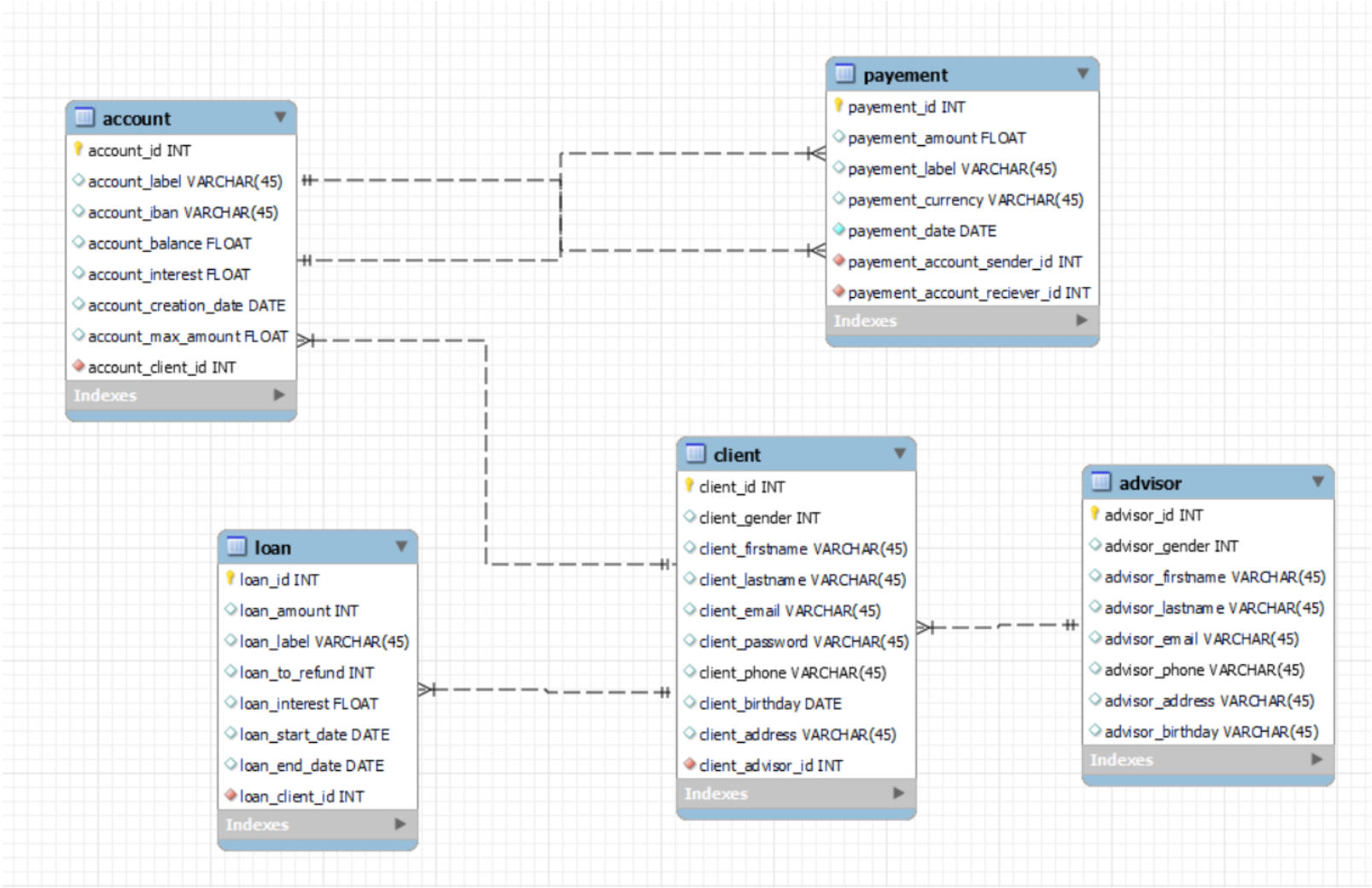
Table Structure Diagram :which is the base of our project. We decided to represent a bank system with different tables : advisor, client, loan, account and payment.



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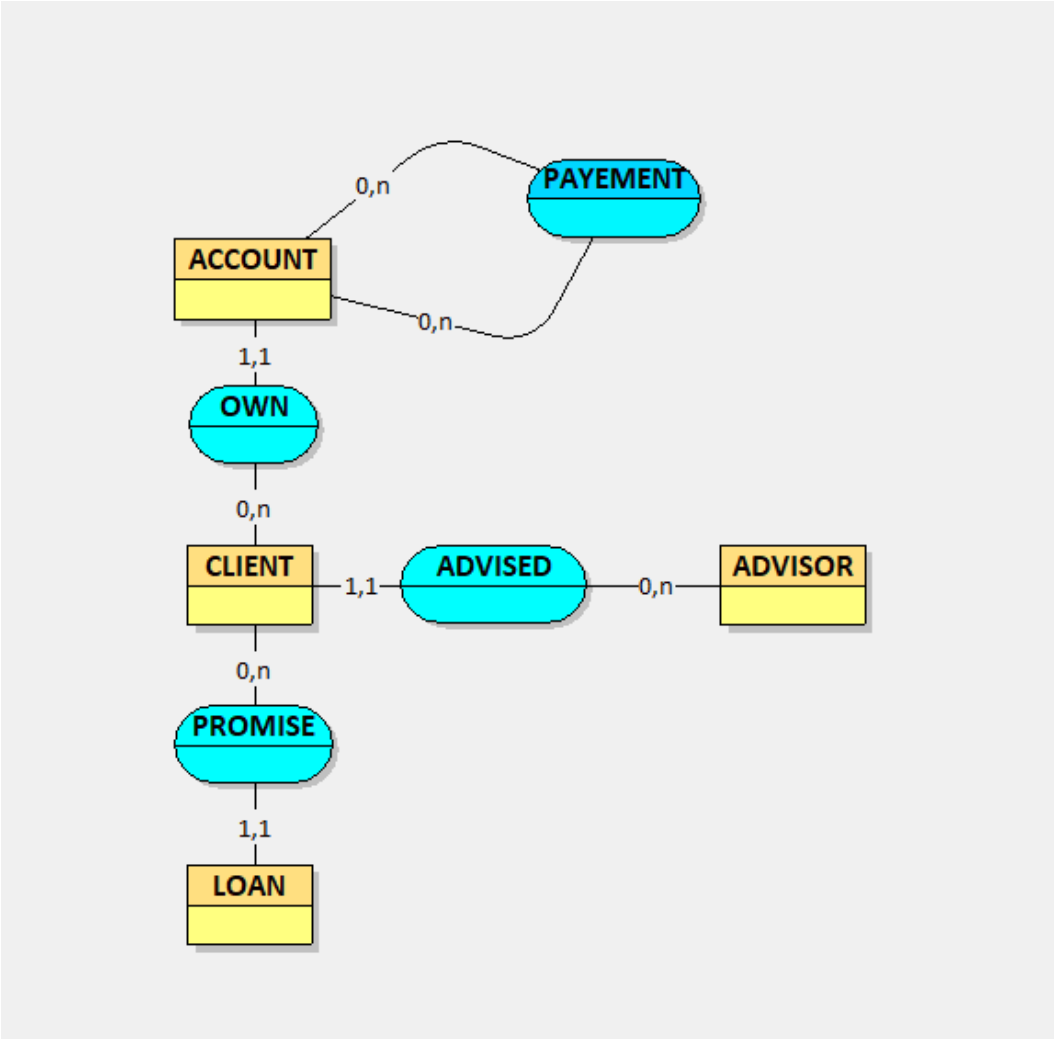
Schema E/R : An Entity-Relationship Diagram (E/R Diagram) is a visual representation of the entities, their attributes, and relationships within a database, used to design and model its structure. It helps illustrate how data is connected and organized.



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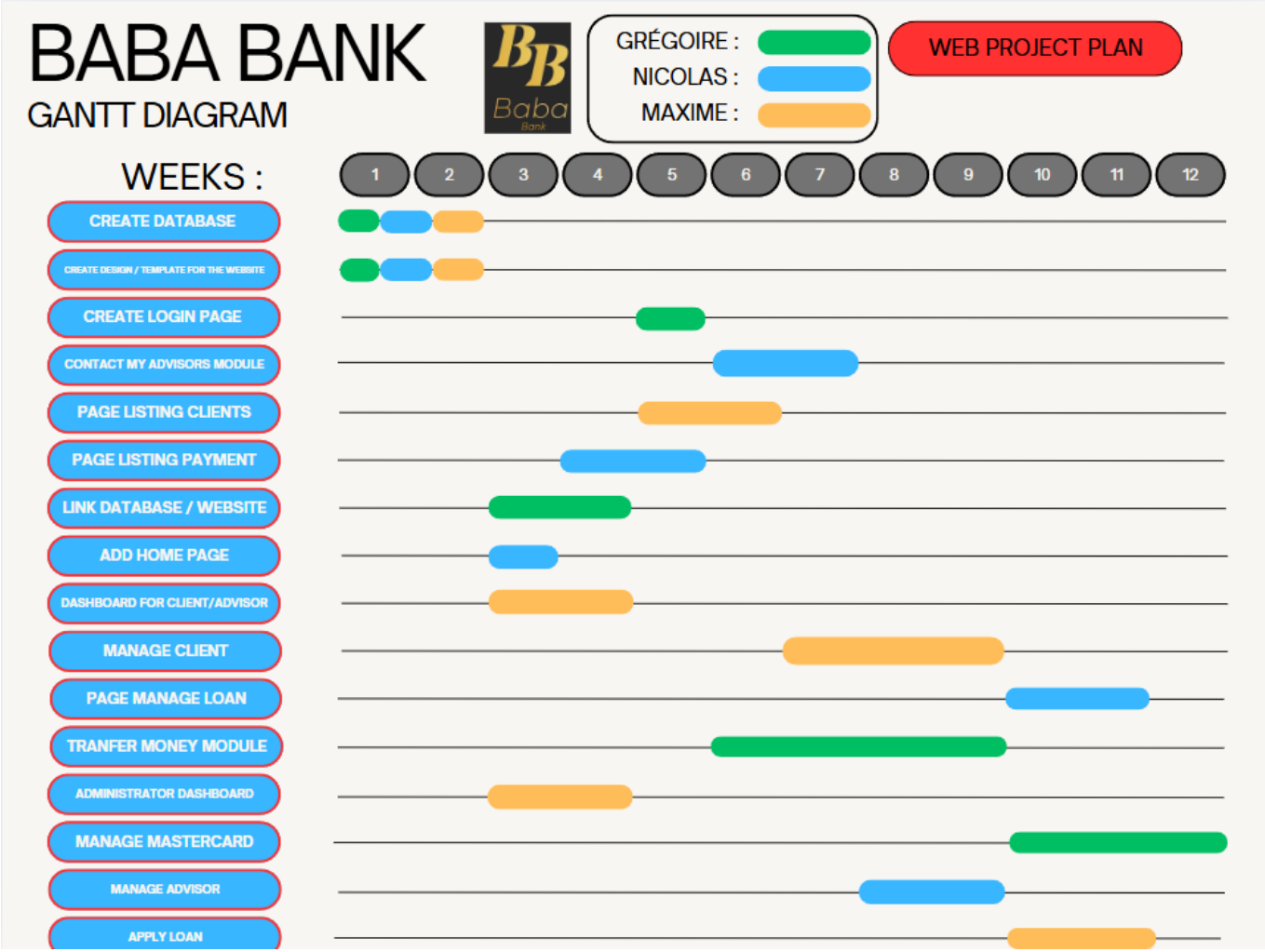
Gantt Diagram : is a visual project management tool that displays tasks, their durations, and dependencies on a timeline, helping to track progress and schedule activities effectively.



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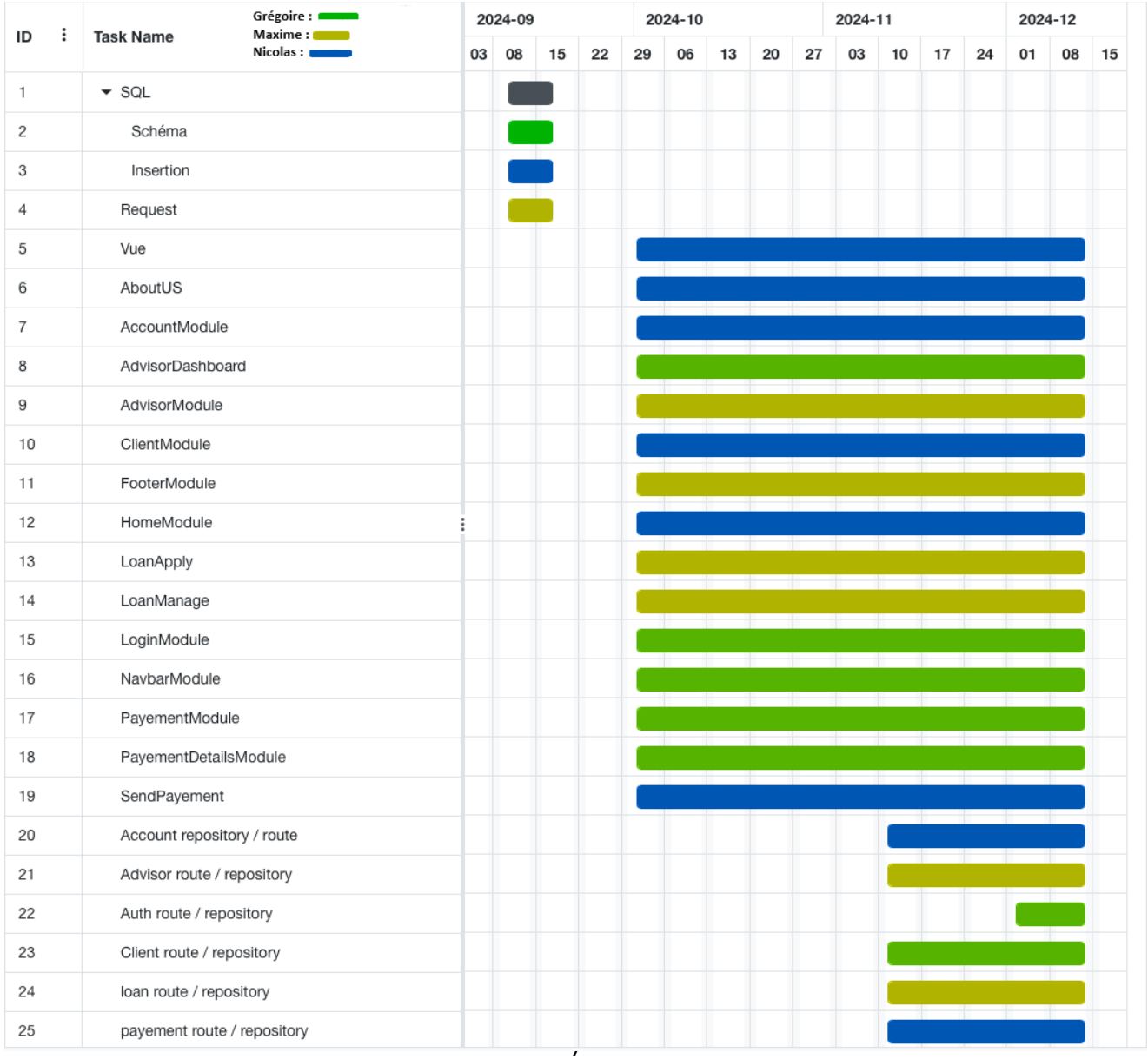

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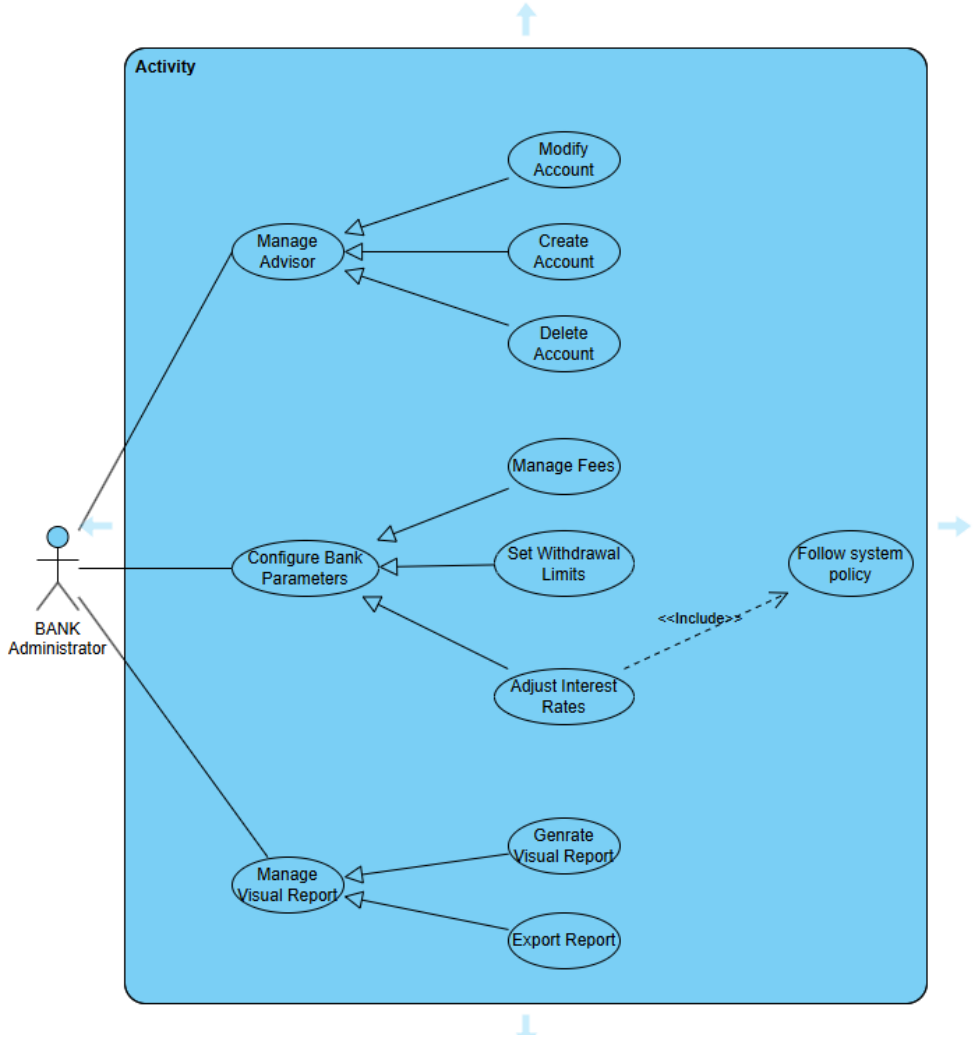
Use Case Diagram of Administrator : visually represents the interactions between the administrator and the system, showcasing the administrator's roles, responsibilities, and use cases, such as managing users, configuring settings, or generating reports.



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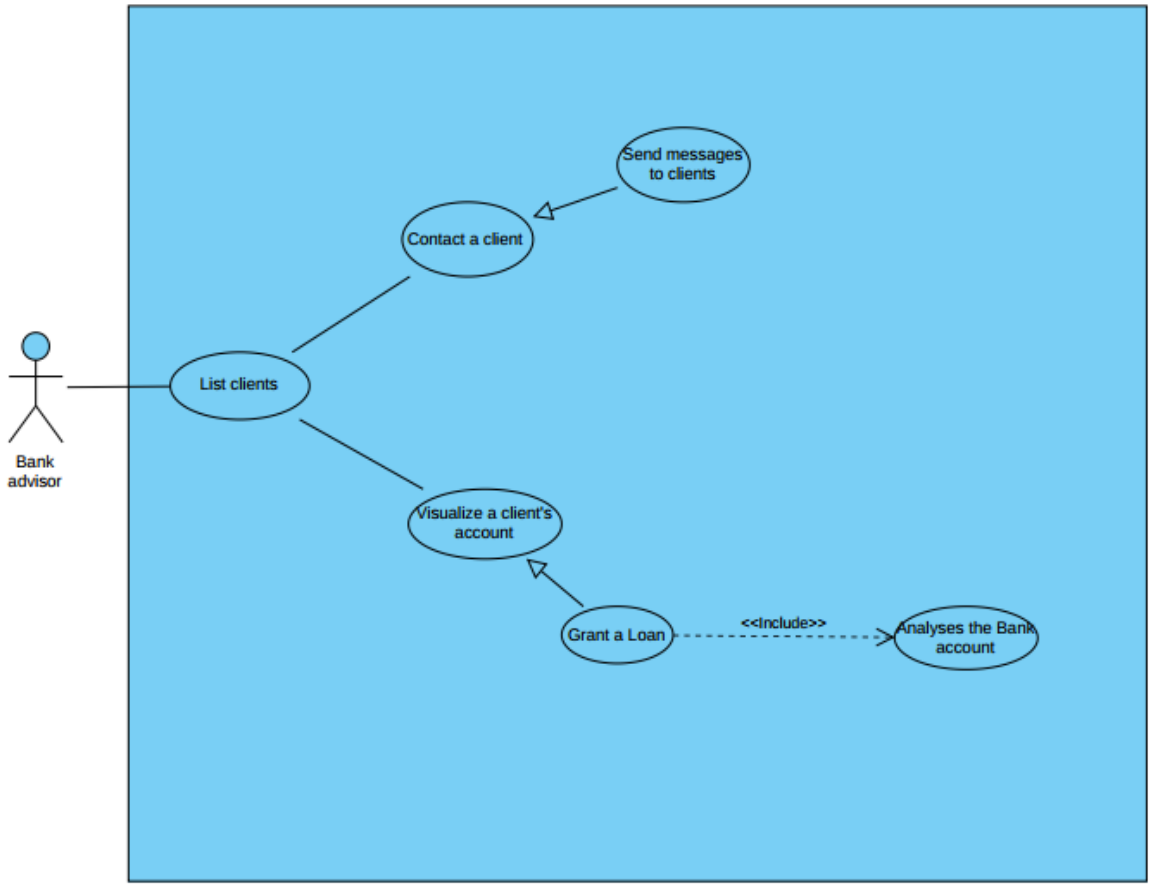
Use Case Diagram of Advisor : illustrates the interactions between the advisor and the system, highlighting tasks such as managing client information, responding to inquiries, and providing recommendations.



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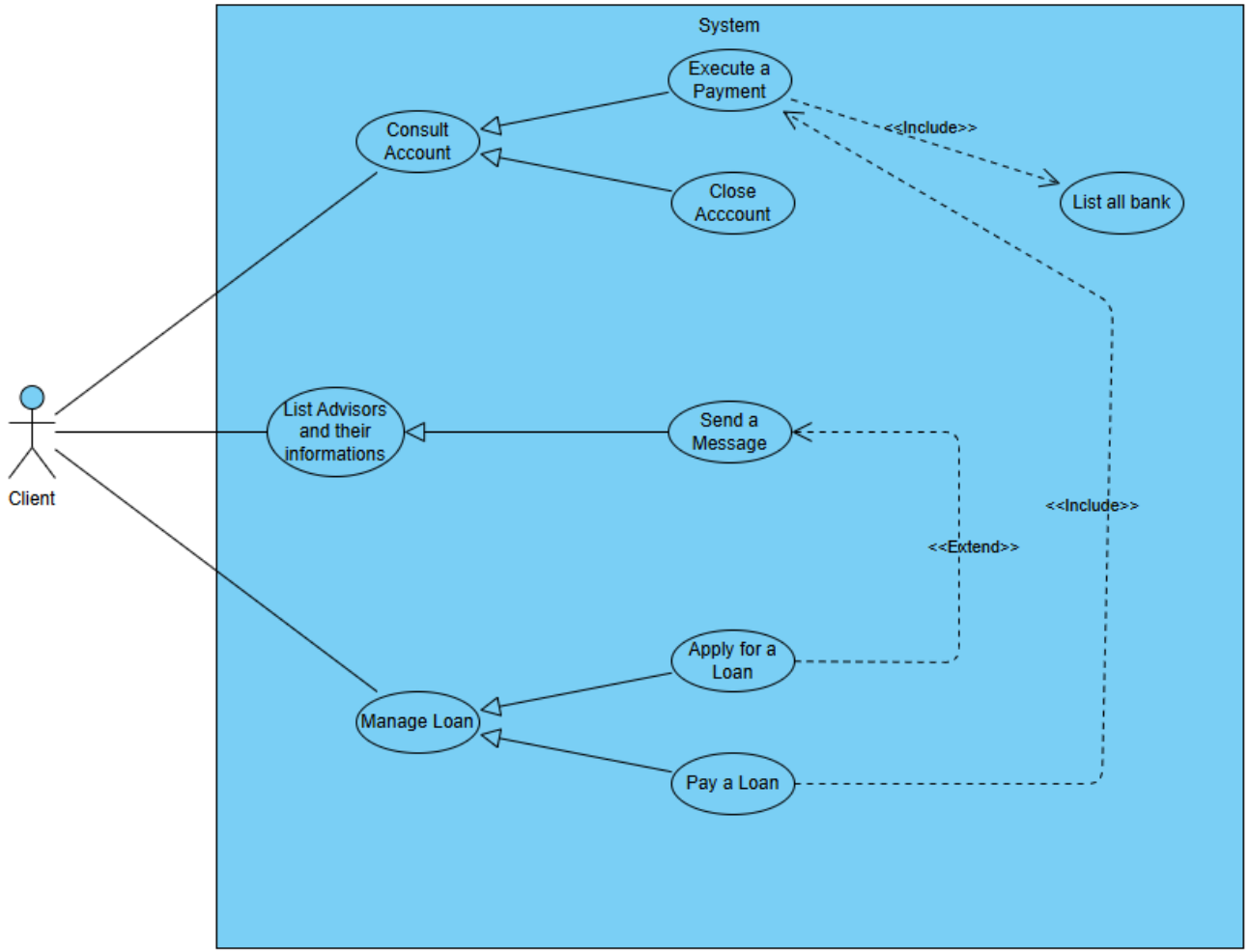
Use Case Diagram of Client : depicts the interactions between the client and the system, focusing on actions like viewing information, submitting requests, and tracking progress or updates.



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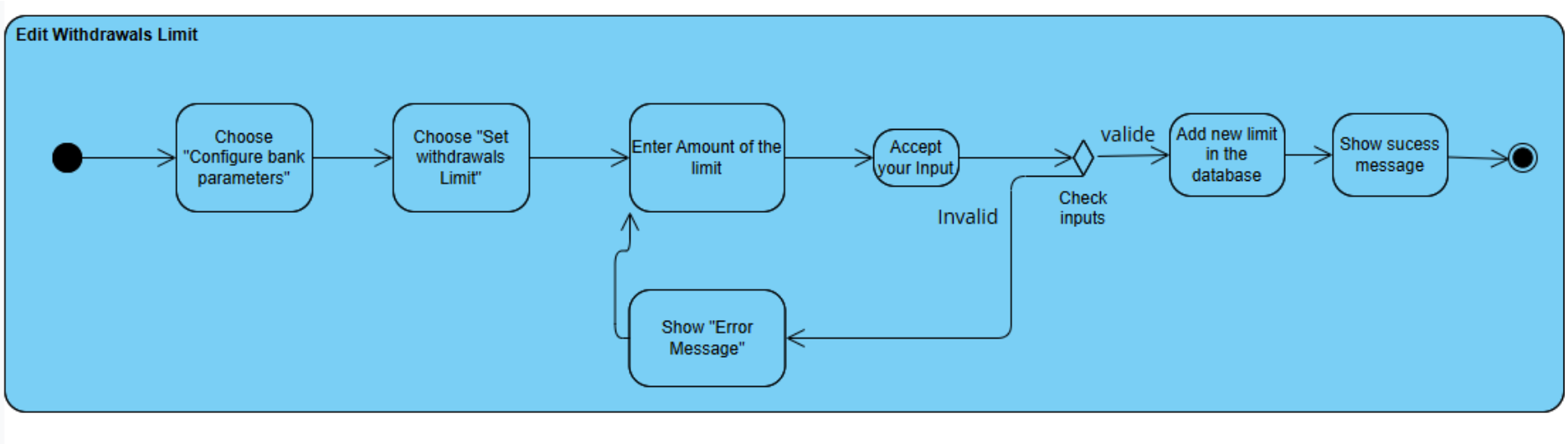
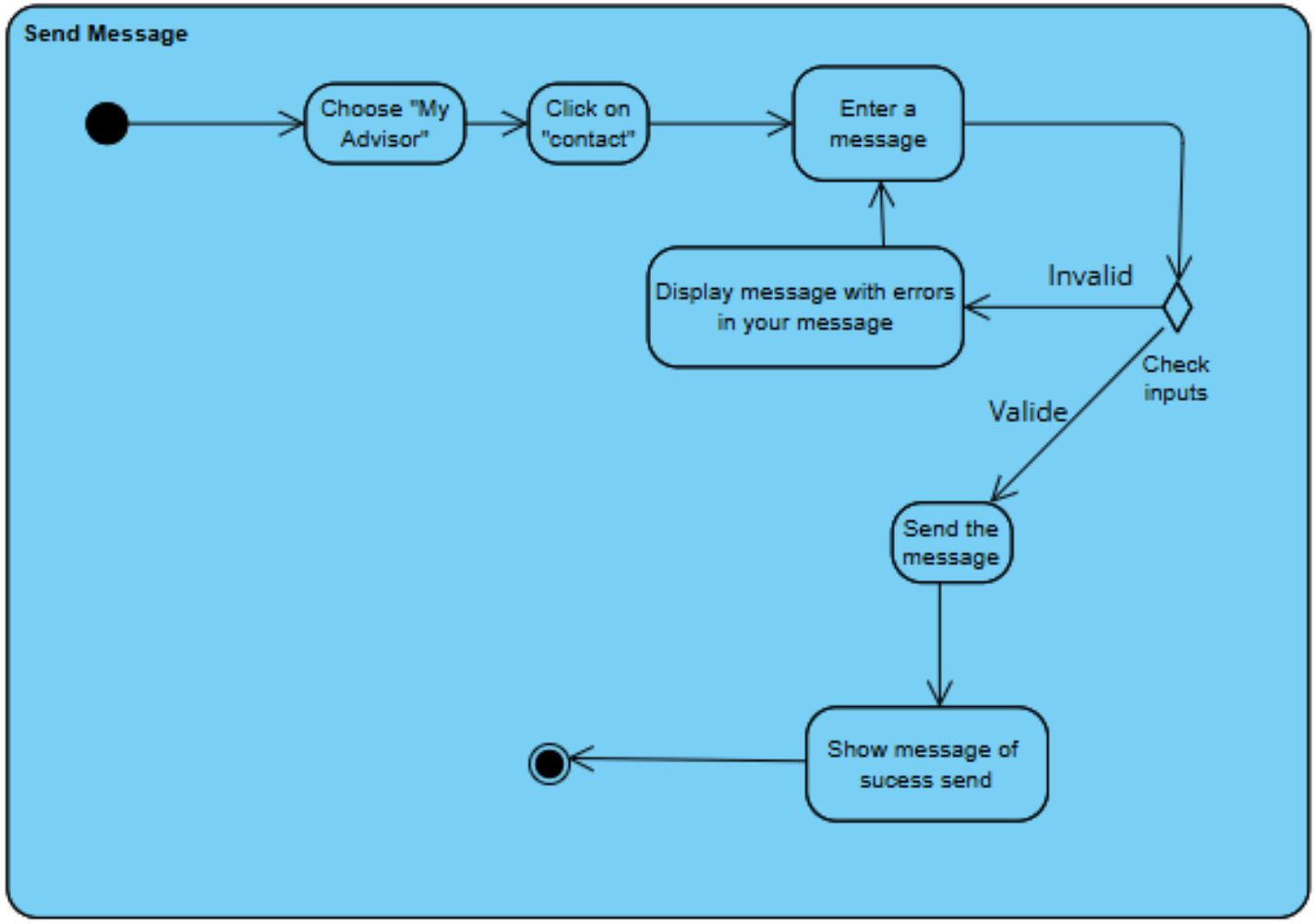
Activity Diagram of Administrator Action : Edit Withdrawals Limit : visually outlines the steps involved in modifying a user's withdrawal limit, including login verification, accessing account settings, updating the limit, and saving the changes.



Activity Diagram of Client : Send Message to Advisor : illustrates the process of composing and sending a message, including steps like accessing the messaging interface, writing the message, and submitting it to the advisor.



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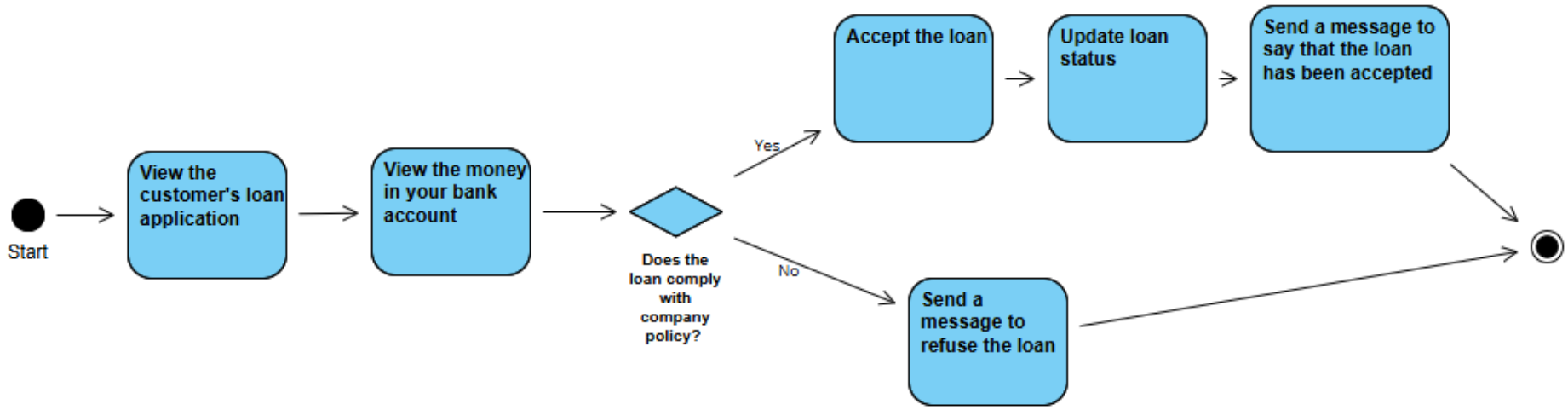
Activity Diagram of Advisor : Grant a Loan : outlines the process of reviewing a loan application, verifying client eligibility, approving the loan, and finalizing the grant process.



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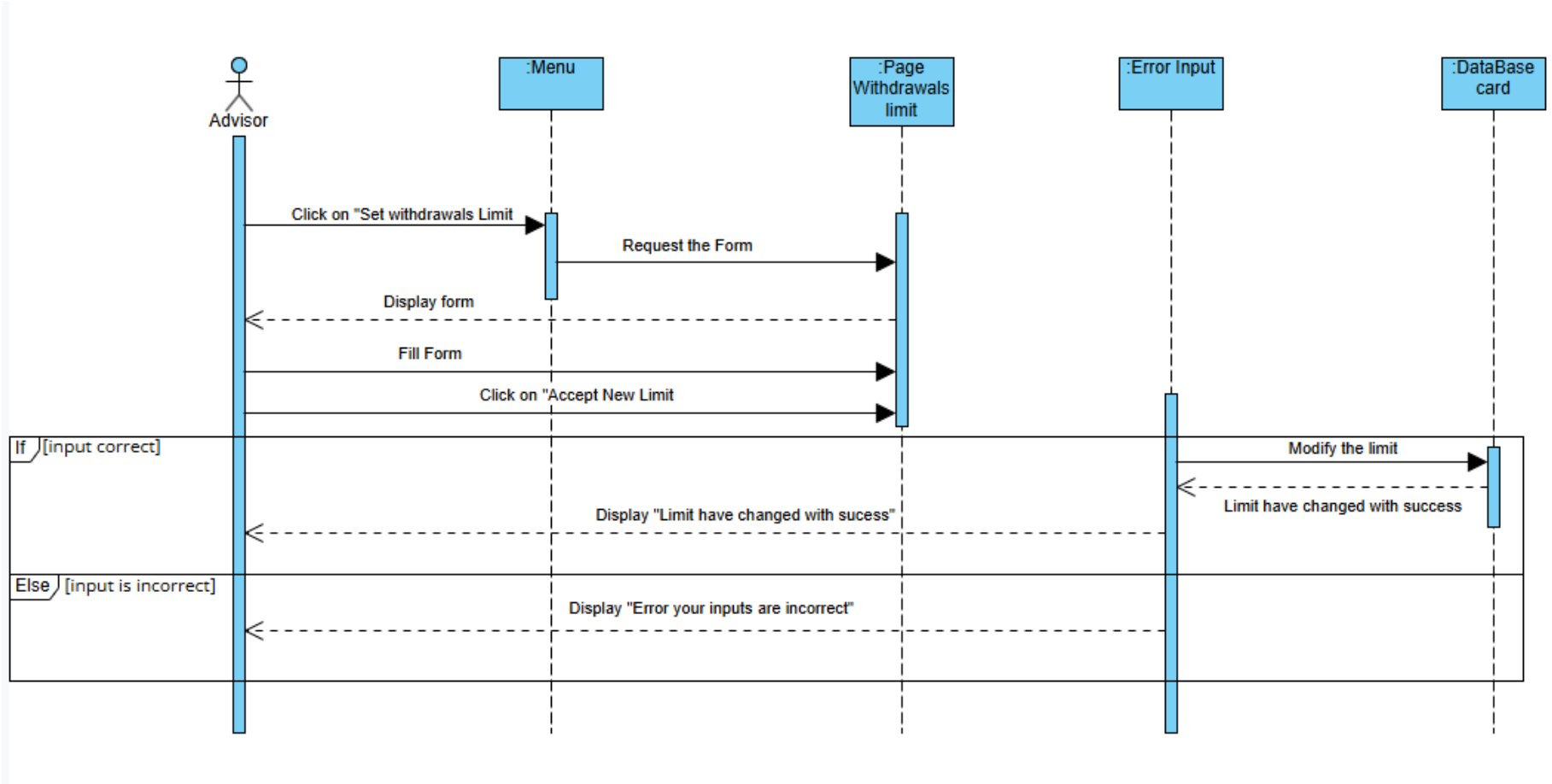
Sequence Diagram Advisor : represents the interactions between the advisor and the system or other entities over time, showing the sequence of messages and actions involved in tasks like managing client requests or providing advice.



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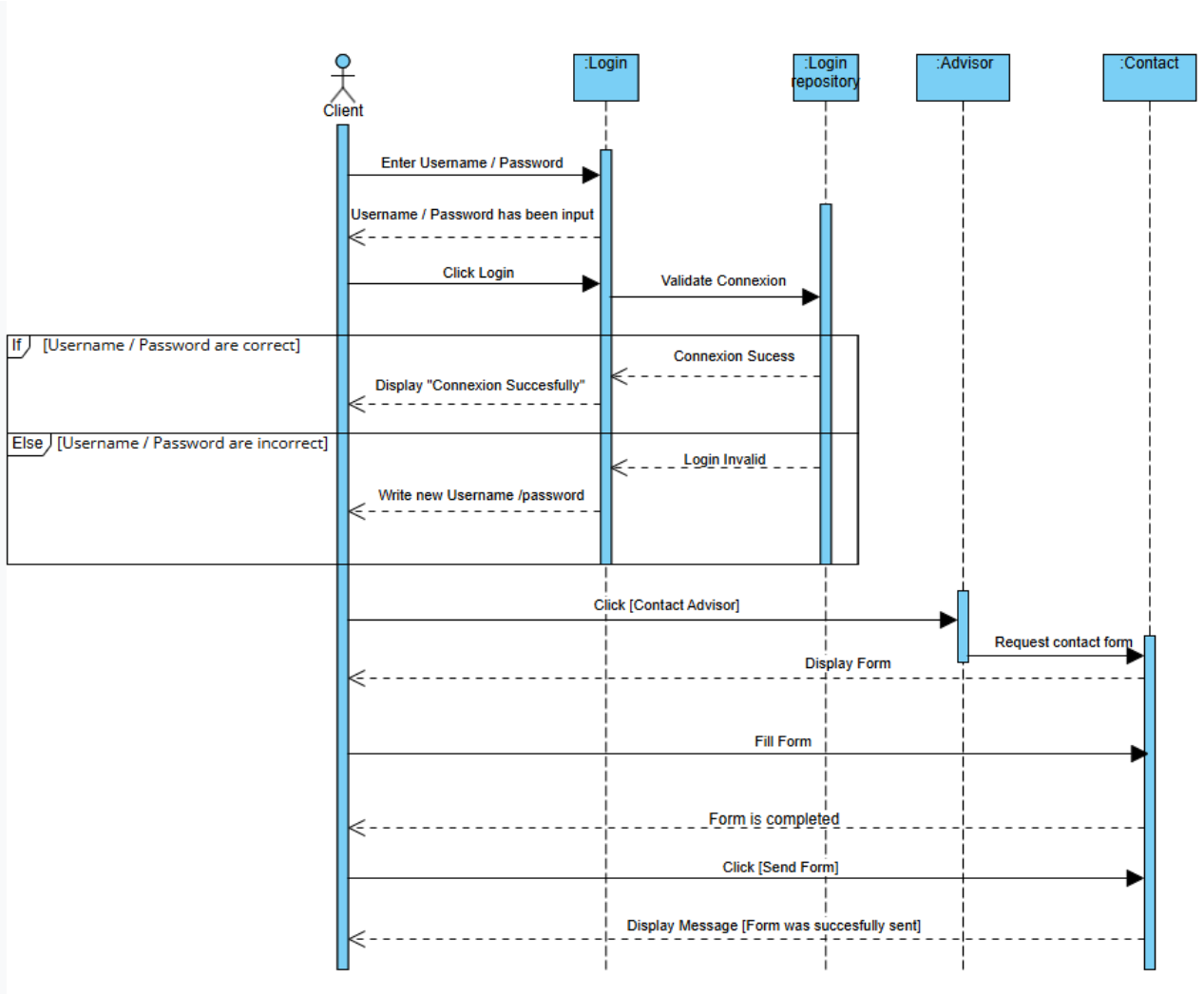
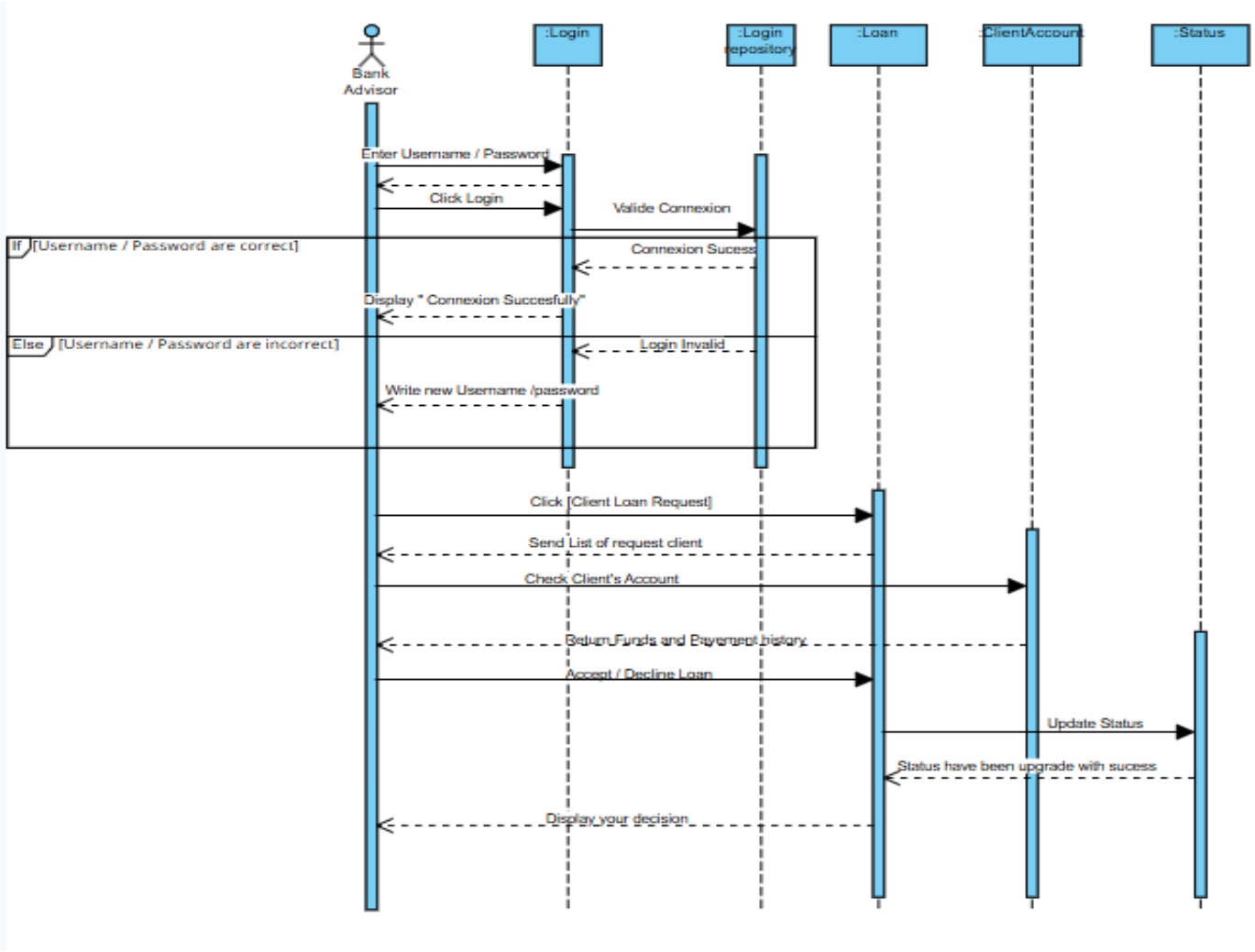
Sequence Diagram Client : illustrates the step-by-step interactions between the client and the system, detailing the sequence of messages exchanged for actions like submitting requests or retrieving information.



Sequence Diagram Advisor : depicts the sequential interactions between the advisor, the system, and other entities, highlighting processes like responding to client queries or managing financial operations.



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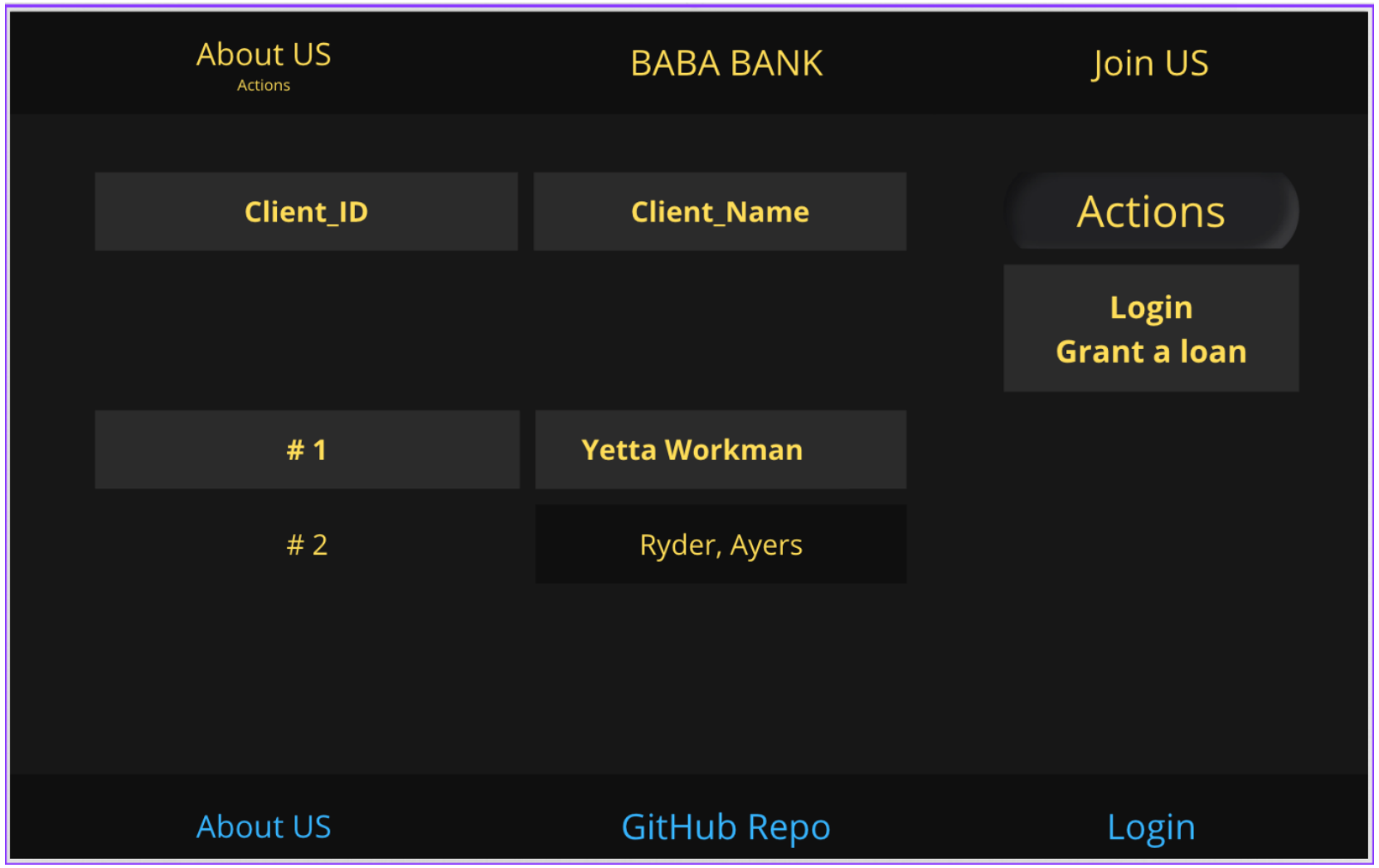
WireFrame : is a simple visual blueprint of a webpage or application interface, focusing on layout, structure, and functionality without including detailed design elements or visuals.



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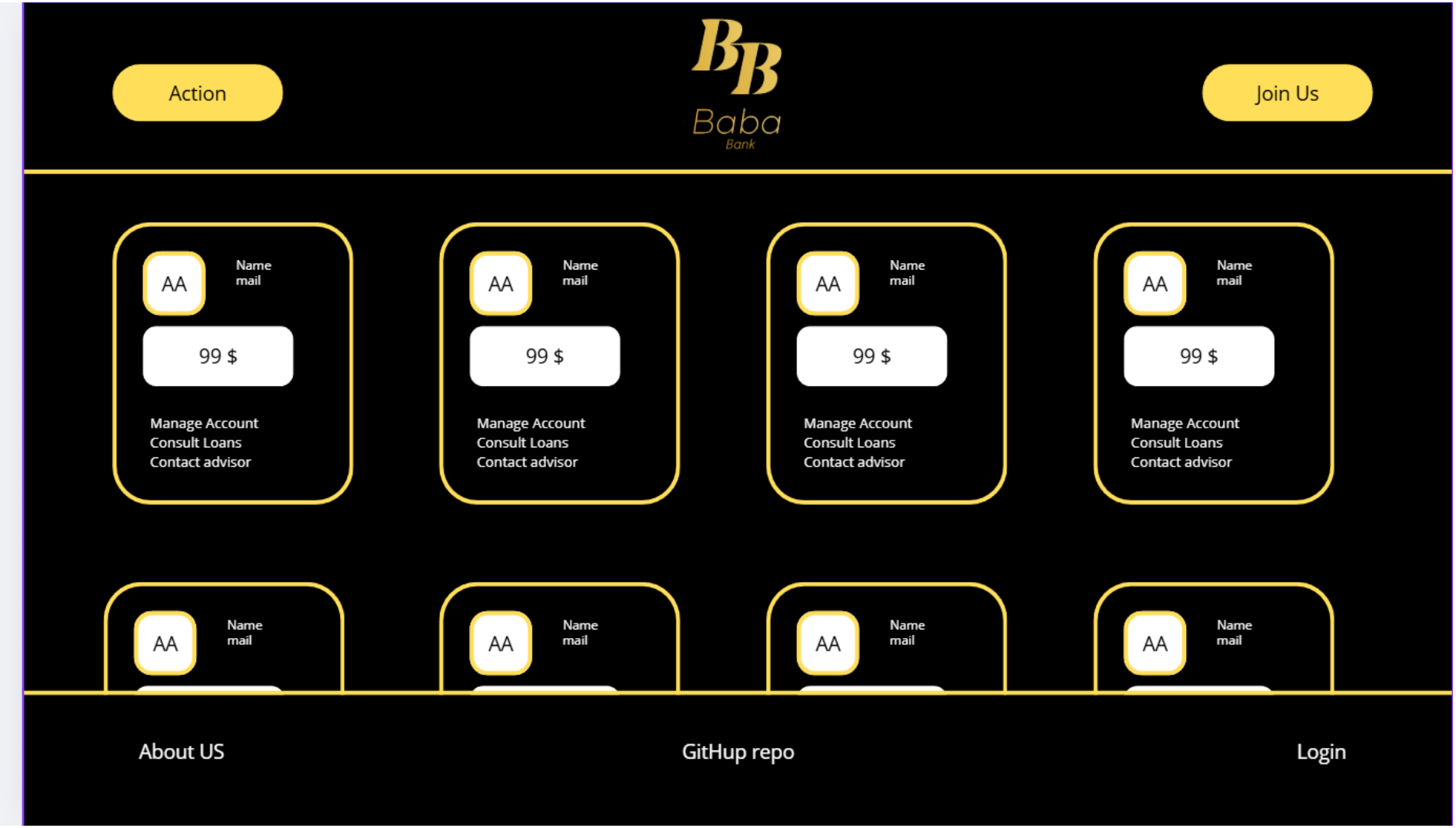


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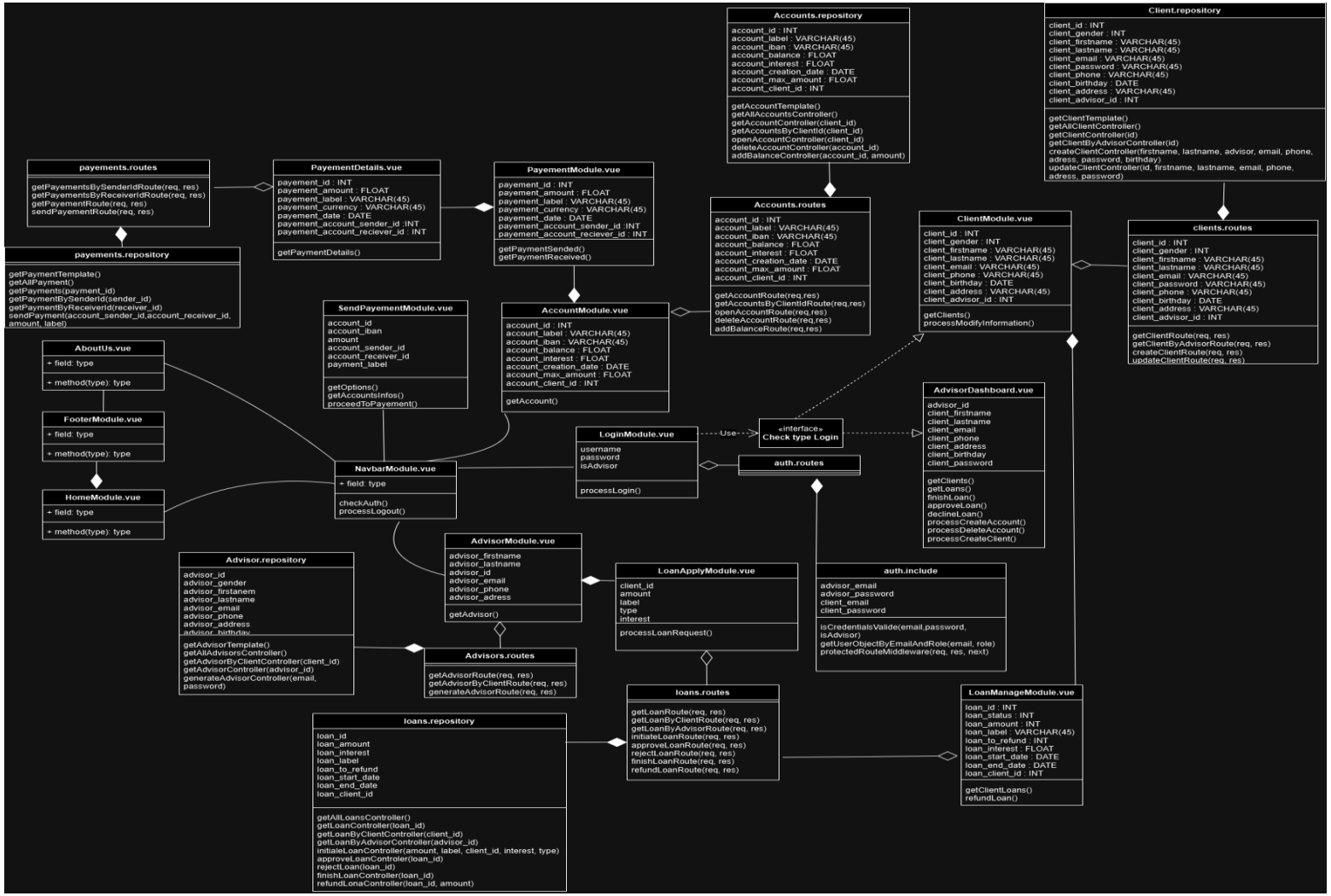
Class Diagram : is a UML diagram that represents the structure of a system by showing its classes, attributes, methods, and the relationships between them.



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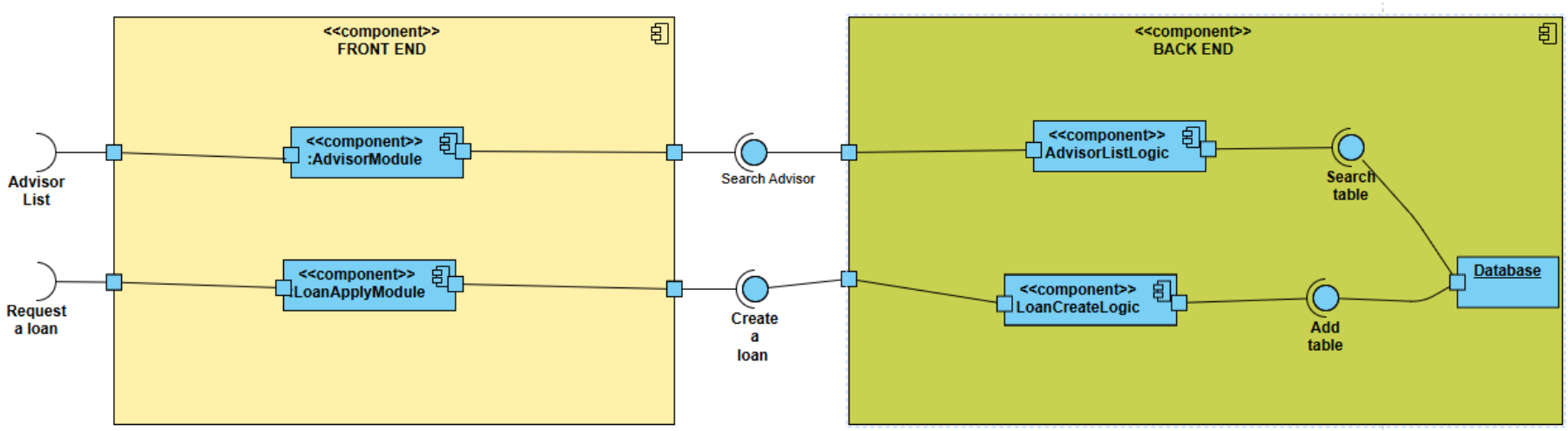
Component Diagram Send Message : illustrates the architecture of the system components involved in the message-sending process, such as the user interface, backend service, and messaging service, along with their interactions.



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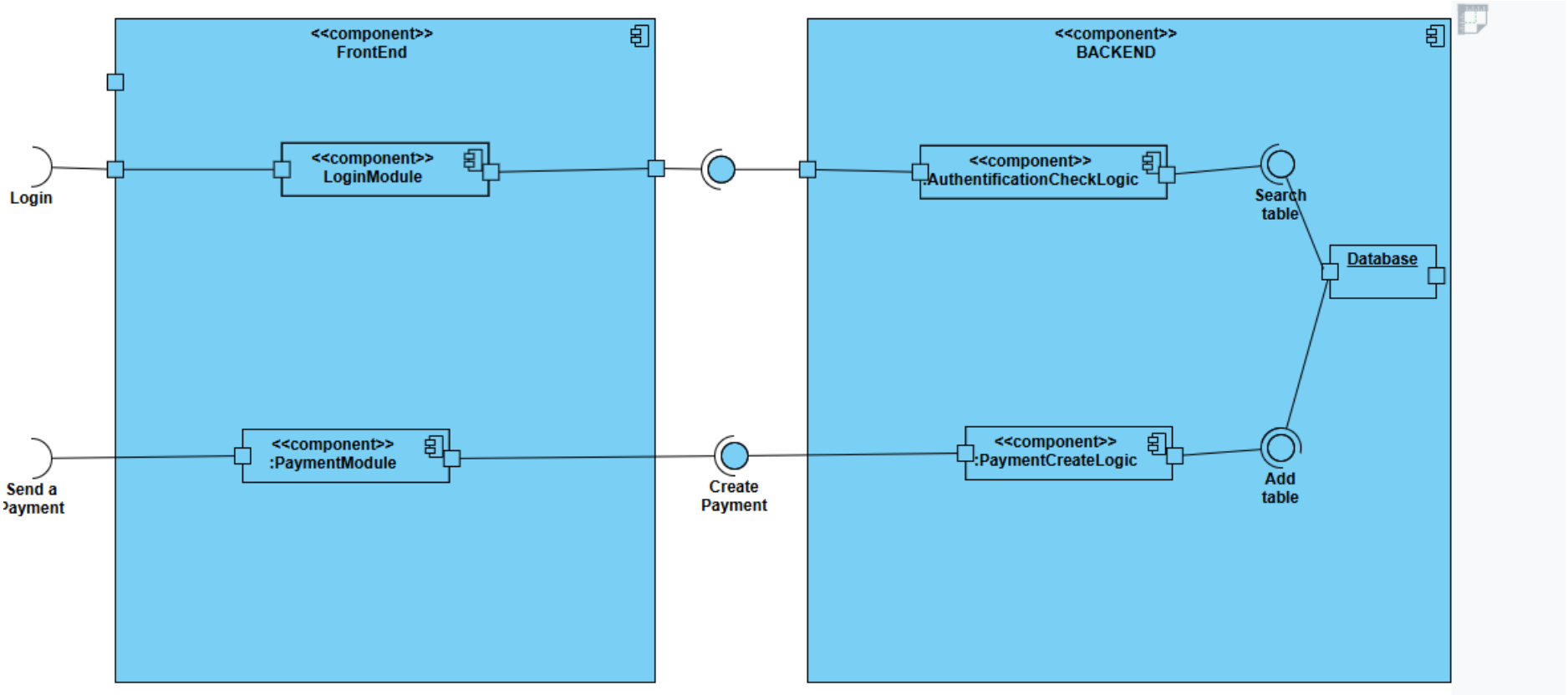
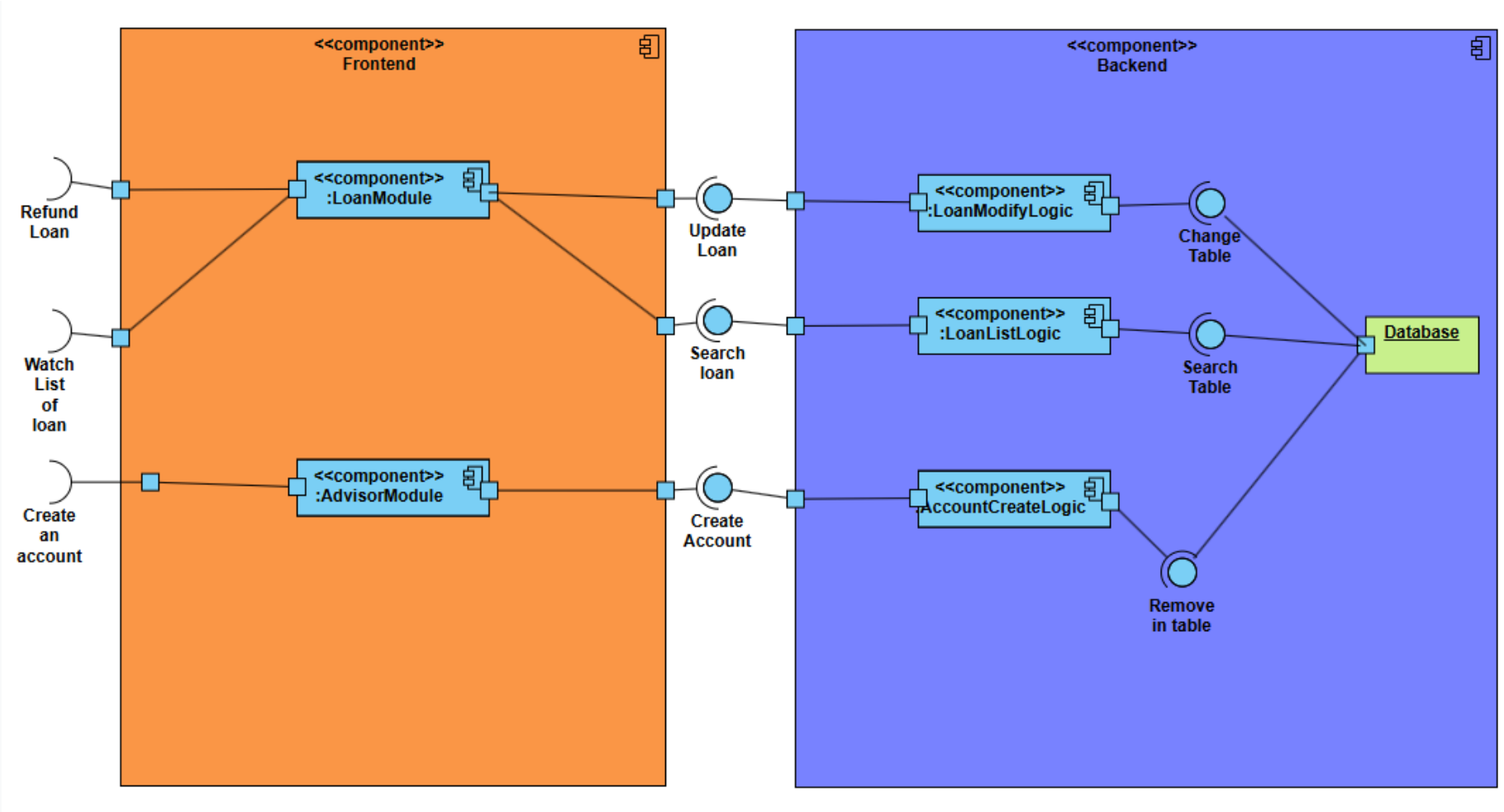
Component Diagram Send Payment : shows the system's components involved in processing a payment, including the user interface, payment gateway, backend services, and database, along with their interactions.



Component Diagram Manage Client: This diagram represents a system architecture divided into two main parts: Backend (left) and Advisor Dashboard (right). It illustrates how a bank advisor can manage his customers through different components and interactions.



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ClassDiagram :

https://app.diagrams.net/#G1cfL4aoSw_MsWtdQiZqwwB8fFmBmS_g6V#%7B%22pageId%22%3A%22arCO1olLK3q4KyQvhJpf%22%7D