Software Requirements Specification (SRS)

Project Name: Service Quality, Rating & Dispute Management System

Team Name: 15_RisingEmber

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1. Introduction

1.1 Purpose

The purpose of this document is to define the requirements for the **Service Quality, Rating & Dispute Management System**. This web-based platform is designed to increase trust in service marketplaces by implementing a secure escrow payment system and an evidence-based dispute resolution layer.

1.2 Scope

The system functions as a neutral intermediary between Customers and Service Providers.

- **Core Functionality:** It handles service searching, secure booking, payment holding (escrow), and chat logging.
- **Dispute Handling:** In the event of a conflict, the system provides a specialized interface for a third-party Arbitrator to review evidence and issue binding verdicts.

1.3 Definitions and Acronyms

- **SRS:** Software Requirements Specification.
- **Escrow:** A financial arrangement where funds are held by a third party until contract conditions are met.
- **KYC:** Know Your Customer (Identity Verification).
- **Arbitrator:** A privileged user responsible for resolving disputes.

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2. Overall Description

2.1 User Classes and Actors

- **Customer:** End-users who browse and book services. They require a simple, intuitive interface for booking and raising issues.
- **Service Provider:** Professionals offering services. They require tools to manage bookings and upload proof of work.
- **Arbitrator:** Administrative users who review disputed cases. They require access to sensitive logs and evidence.
- **Banking Server (External System):** The external financial entity responsible for processing real-time payments, holding escrow funds, and executing refunds based on system triggers.

2.2 Operating Environment

- **Client Side:** Modern web browsers (Chrome, Edge, Firefox).
- **Server Side:** Node.js environment handling API requests.
- **Database:** SQL/NoSQL database for storing user profiles and chat logs.
- **External Interface:** REST API connection to the Banking Server.

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3. Functional Requirements

3.1 User Authentication & Profiles

- **FR-1.1:** The system shall allow users to register using email and password.

- **FR-1.2:** The system shall differentiate between Customer and Service Provider accounts during registration.
- **FR-1.3:** Service Providers must complete a KYC (Know Your Customer) step by uploading a valid ID before their profile becomes active.

3.2 Booking & Escrow Service

- **FR-2.1:** The system shall allow Customers to search for services based on keywords and filters.
- **FR-2.2:** Upon confirming a booking, the system shall signal the **Banking Server** to debit the customer and hold funds in Escrow.
- **FR-2.3:** The system **shall not transfer funds to the Provider immediately**; it must wait for a "Job Complete" confirmation.
- **FR-2.4:** The system shall provide a secure Chat Interface for communication, where all messages and media are logged automatically.
- **FR-2.5:** Upon successful job completion (confirmed by the Customer), the system shall trigger the **Banking Server** to release funds to the Provider.

3.3 Dispute Resolution Mechanism

- **FR-3.1:** The Customer shall be able to click a "Report Issue" button if the service is unsatisfactory.
- **FR-3.2:** Reporting an issue shall signal the **Banking Server** to freeze the Escrow funds indefinitely until resolved.
- **FR-3.3:** The Arbitrator shall have access to a dashboard listing all active disputes.
- **FR-3.4:** The Arbitrator shall be able to view the full evidence log (Chat History, Photos, Booking Details).
- **FR-3.5:** The system shall execute the Arbitrator's final decision by sending a transaction request to the **Banking Server** (Refund Customer OR Pay Provider).

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4. Non-Functional Requirements

4.1 Security

- **NFR-1:** All user passwords must be hashed before storage.
- **NFR-2:** Chat logs used for evidence must be stored in a read-only format to prevent tampering.
- **NFR-3:** Communications with the Banking Server must be encrypted using TLS 1.3 protocol.

4.2 Performance

- **NFR-4:** The system shall load the service search results in under 3 seconds.
- **NFR-5:** The chat system shall support real-time messaging with a latency of less than 200ms.

4.3 Reliability

- **NFR-6:** The system shall ensure 99% uptime during business hours.
- **NFR-7:** In case of a system crash, the database must retain the current state of all Escrow funds to prevent financial discrepancies.

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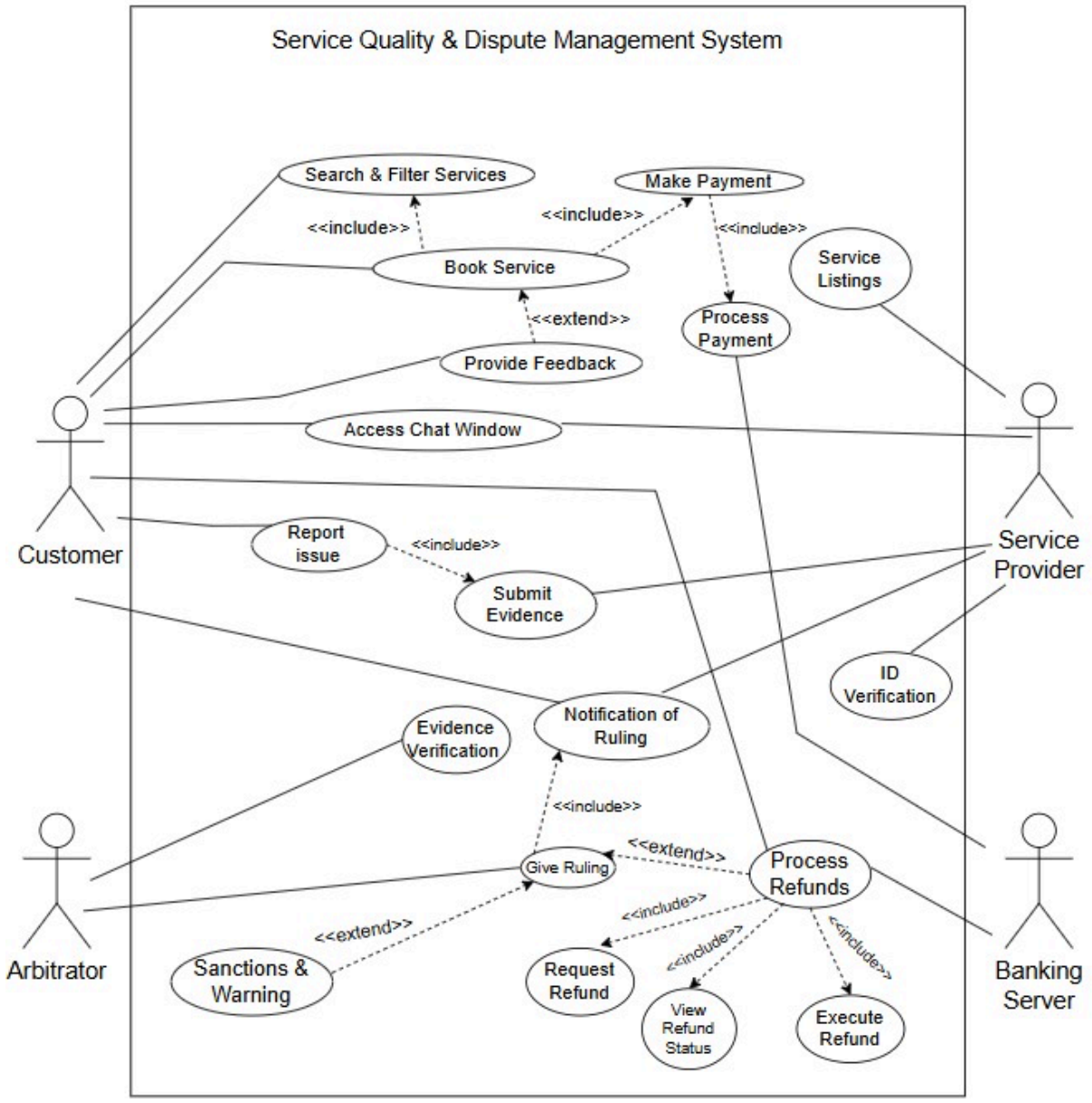
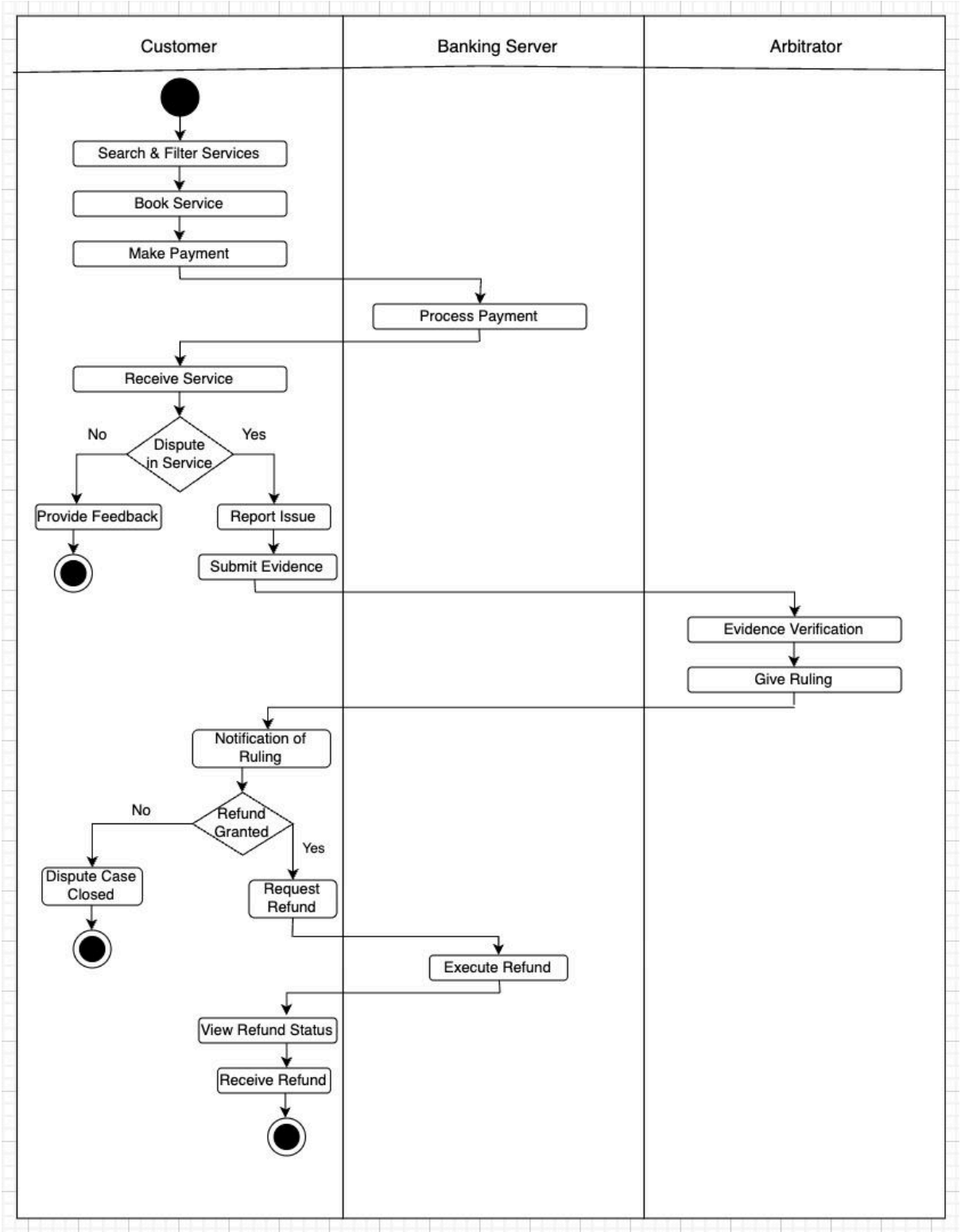
5. Appendix: System Models

5.1 Use Case Diagram

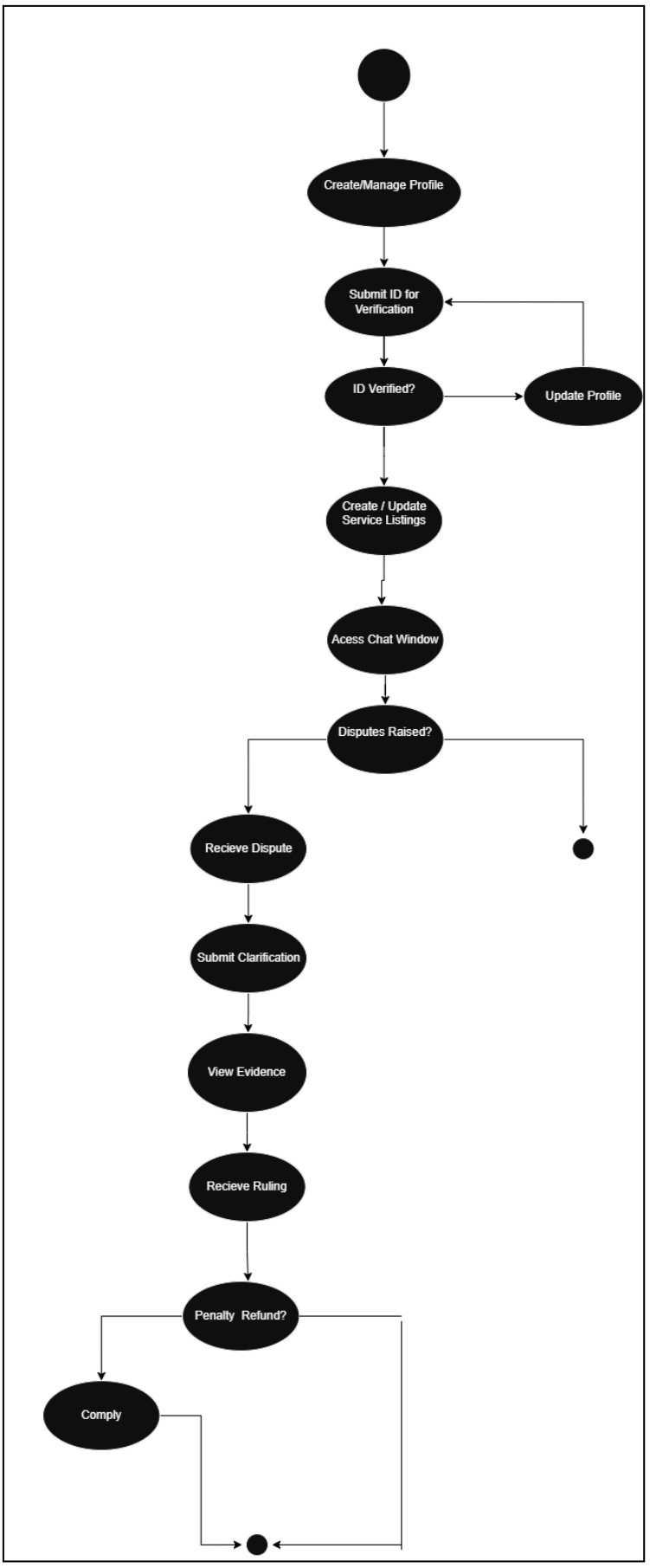


5.2 Activity Diagram

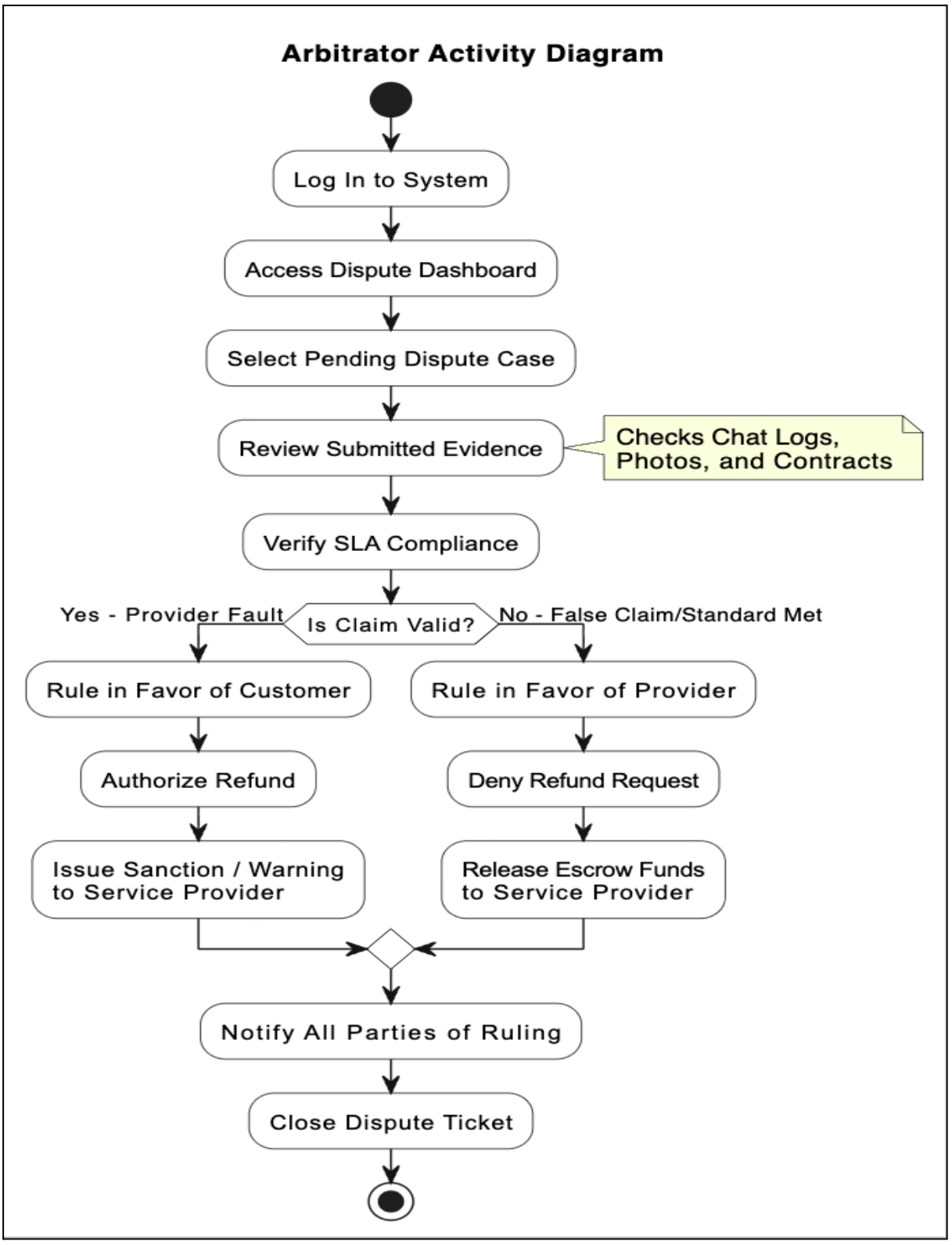
a) Customer Activity Diagram & Banking Server



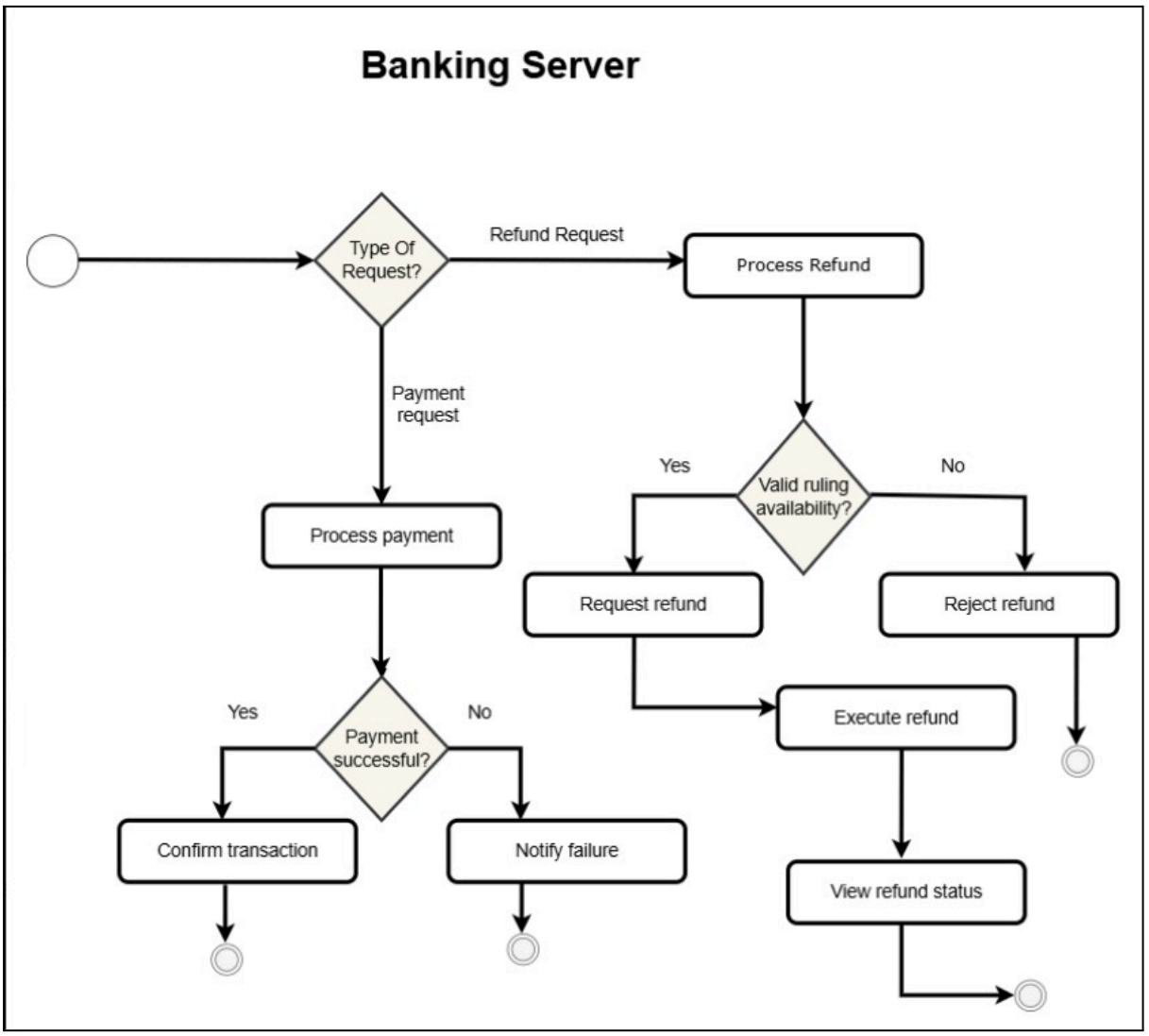
b) Service Provider Activity Diagram



c) Arbitrator Activity Diagram

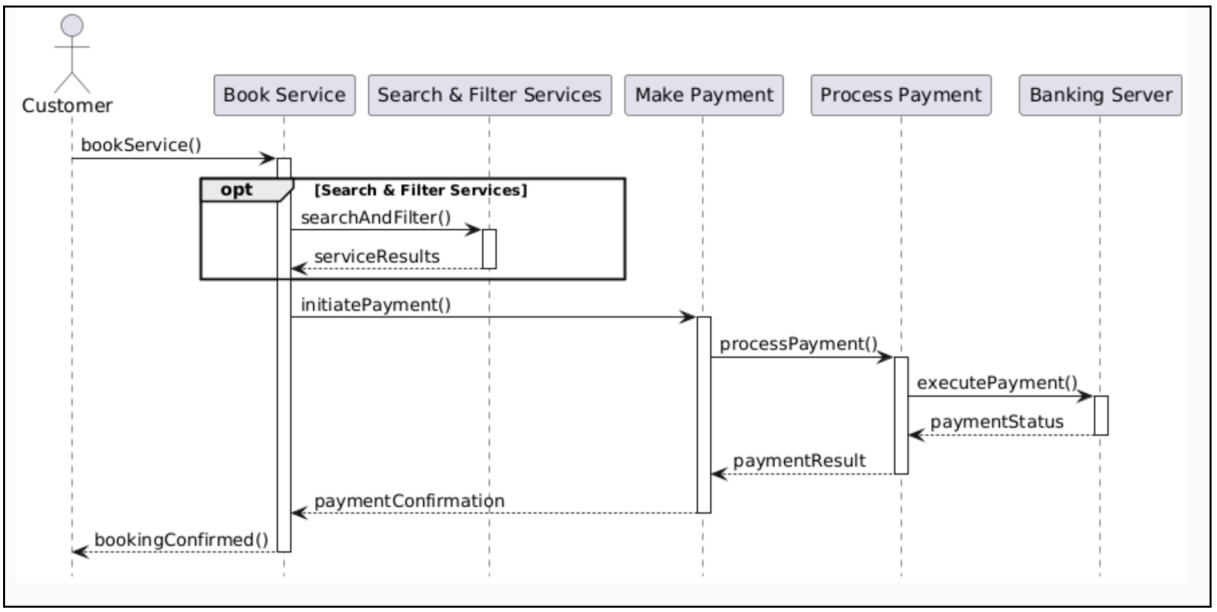


d) Banking Server Activity Diagram

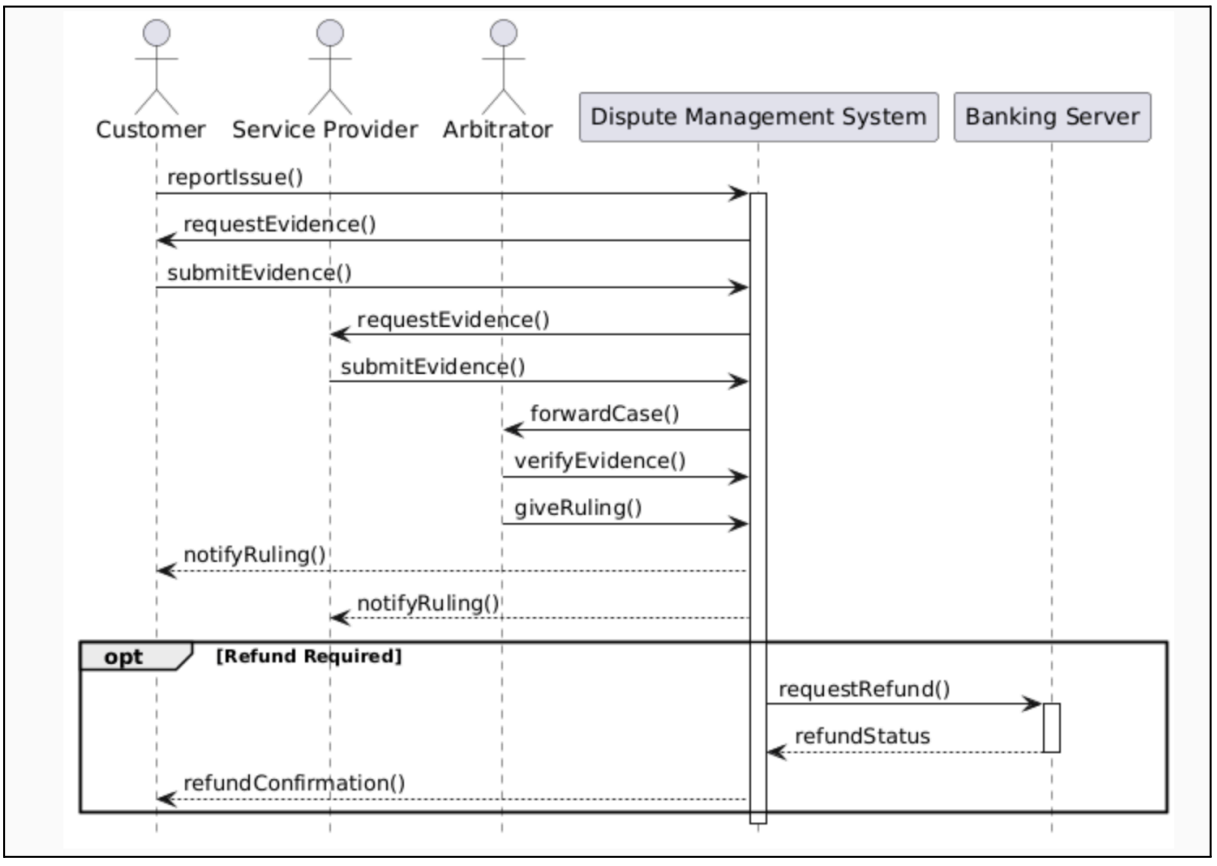


5.3 Sequence Diagram

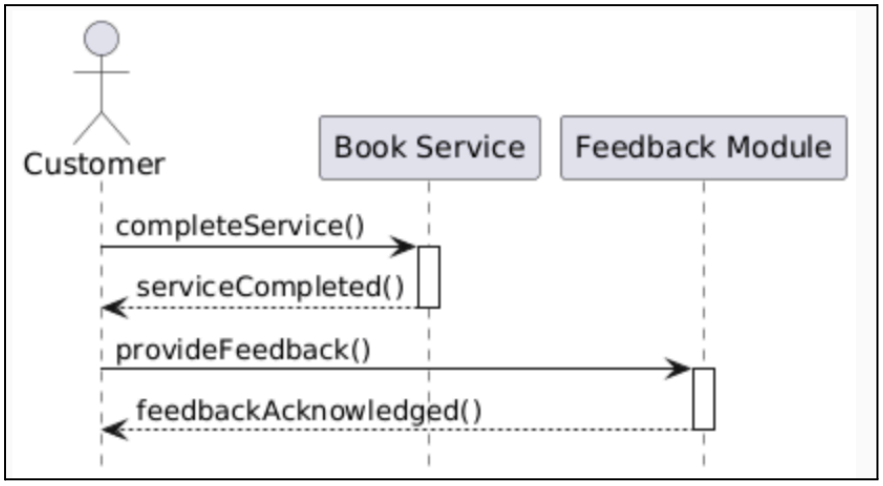
A. Book Service → Make Payment → Process Payment → Banking Server



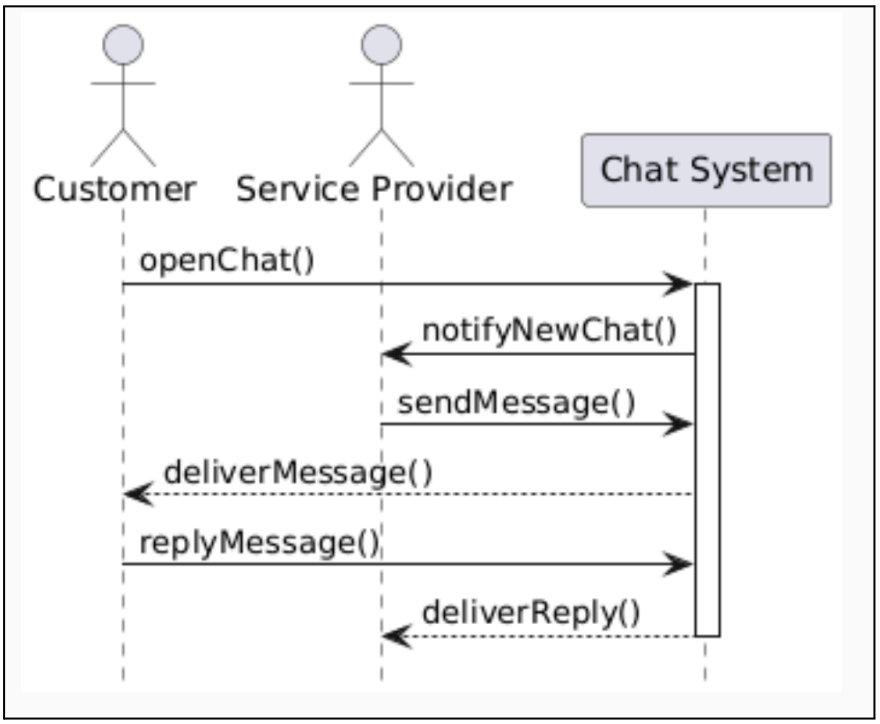
B. Report Issue → Submit Evidence → Evidence Verification → Give Ruling → ProcessRefund → Banking Server



C. Provide Feedback → Book Service



D. Access Chat Window



E. Create & Manage Profile / Service Listing / ID Verification