# Assignment 5

Name: Diptangshu Dey

Roll No: 20CS8018

Problem 1.

Design a Sequence Diagram for a Smart Home Automation System using IoT devices. The system allows users to control various smart devices within their home remotely using a mobile application.

- Identify the main components involved in the Smart Home Application and their relevant functions.

- Determine the interactions and communication between these components during a typical home automation session.

- Define the sequence of messages exchanged between components, indicating the type of messages (synchronous, asynchronous, etc.).

- Include conditions or loops if applicable to showcase different scenarios during the automation process.

- Provide a brief description of each component and its role in the system.

Sol:
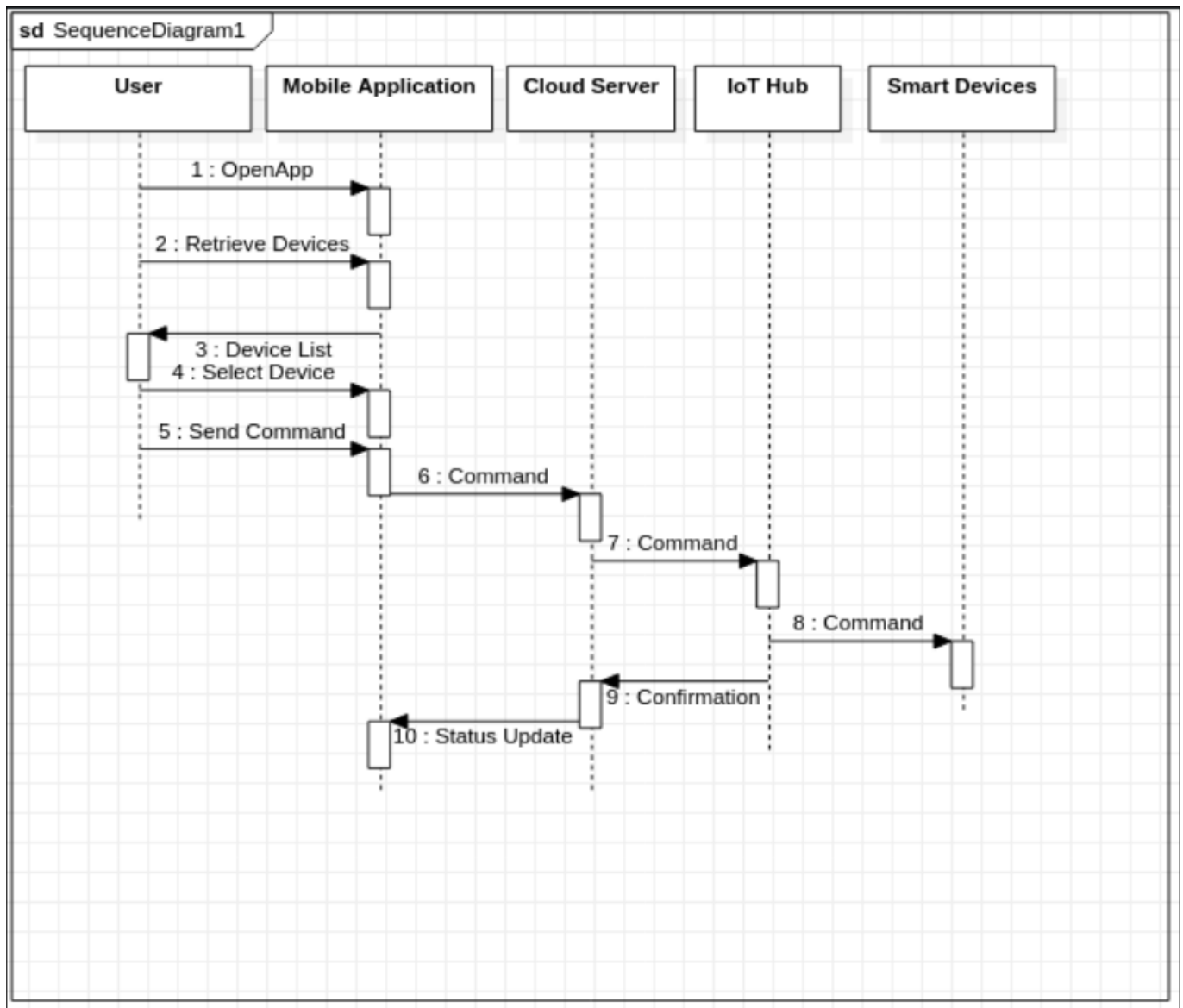
Problem 2.

Design a Sequence Diagram for an Anomaly Detection System. The system is responsible for detecting anomalies in a streaming data environment, such as network traffic, and triggering alerts when unusual patterns are identified.

- The system processes incoming data streams in real-time.

- Anomaly detection algorithms are applied to the incoming data to identify abnormal patterns.

- When an anomaly is detected, an alert is generated and sent for further action.

Sol:
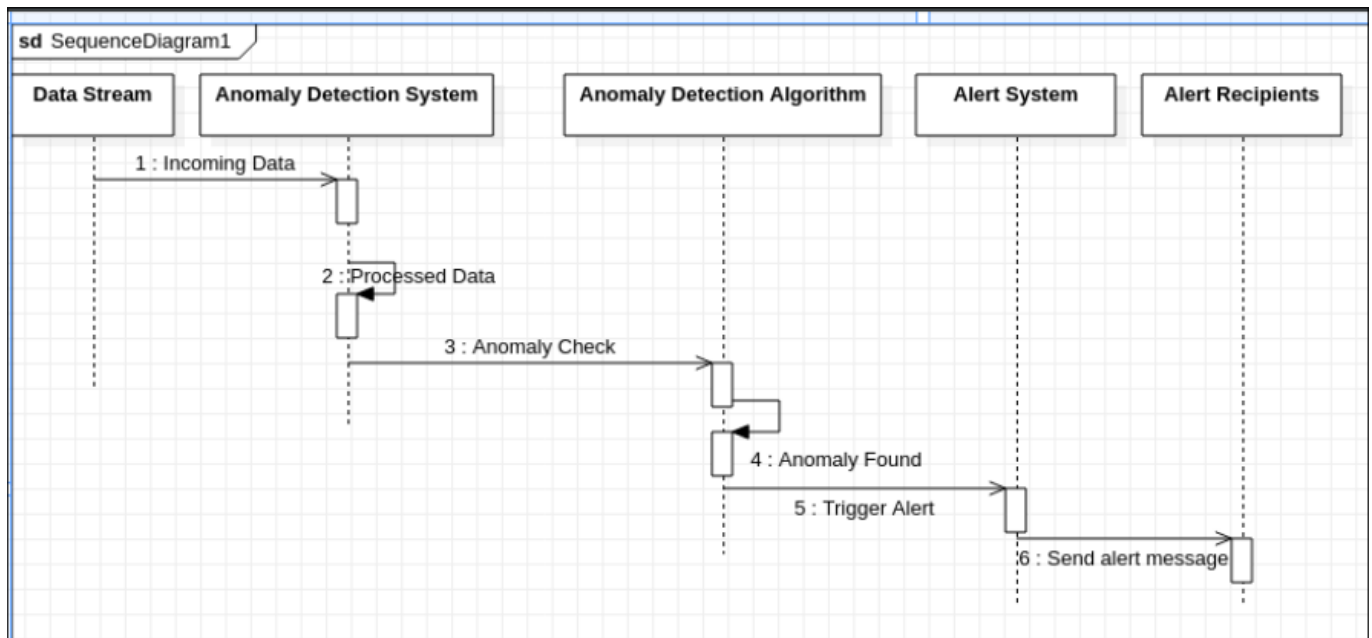
Problem 3.

Design a Sequence Diagram for a Movie Recommendation System that provides personalized movie recommendations to users based on their preferences and viewing history.

- The system takes input from the user regarding their movie preferences, genres, and past viewing history.

- The system processes this information to generate personalized movie recommendations.

- The system presents these recommendations to the user.

Sol:
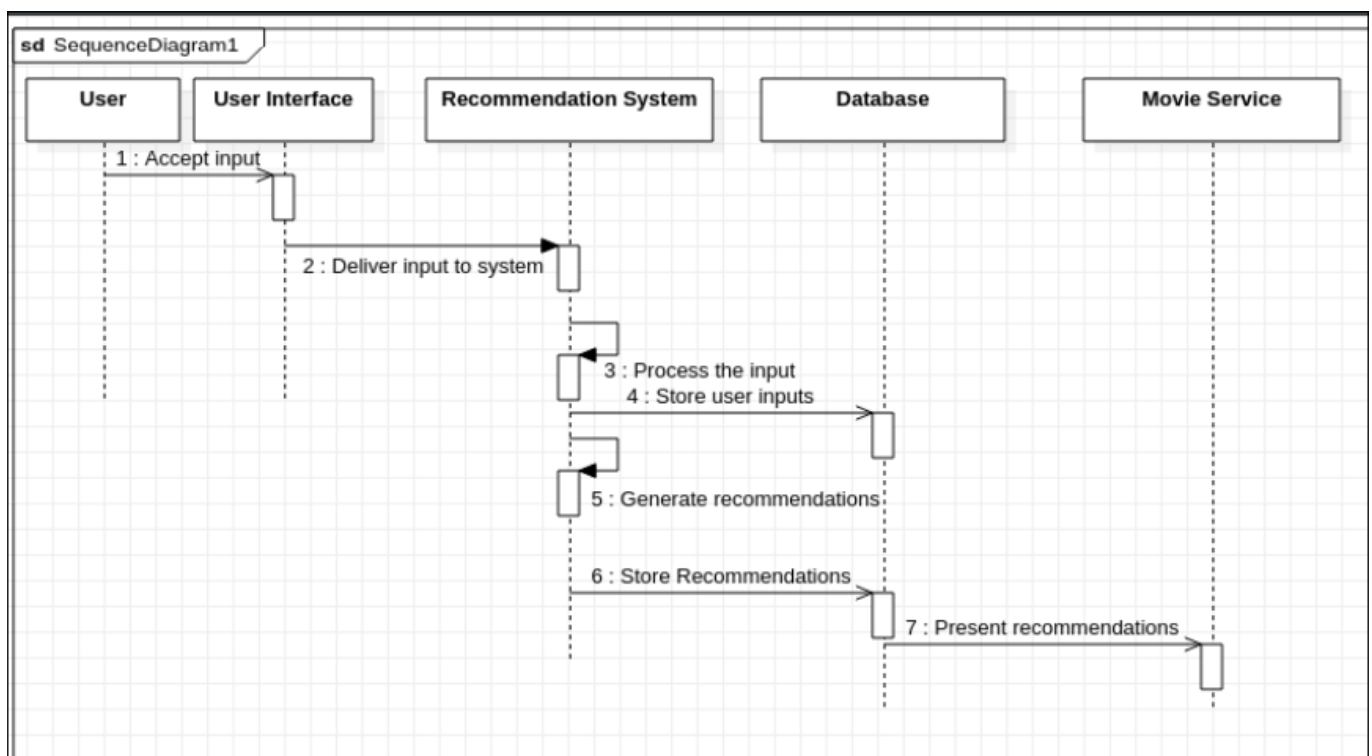
Problem 4.

Develop a sequence diagram for an online auction system. Include interactions between bidders, the auction server, and the bidding database. Highlight steps such as item listing, bidding, bid validation, and auction closure.

Sol:

sd SequenceDiagram1

| Bidders | Auction Servers | Bidding Database |

1 : Connect

2 : List items

3 : Items list

4 : Select item

5 : Place Bid

6 : Check bid validity

7 : Close Auction

8 : Decide winner

9 : Notify winner

10 : Update Database based on the bid values and winners