Experiment - 3

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Subject Name: System Design
Subject Code: 23CSH-314

Aim:

To design a Social Media Platform similar to Facebook / Instagram

A Social Media platform is a platform which allows users to share photos, videos, and text with their friends and followers. To design a scalable and highly available Social Media System where users can register, create posts, follow others, and interact with content through likes and comments.

Objectives:

1. To understand the working of a large scale social media platform
2. To design functional and non-functional requirement.
3. To design API endpoint for communication.
4. To identify core system entities.
5. To ensure scalability, availability and low latency.

Tools Required:

- System Design Tools
- Programming Language.
- Database.
- API Testing Tool
- Web Browser.

System Design:

Functional Requirements -

- User Should be able to register and Login.
- User should be able to create post.
- User should be able to follow each other by sending Friend Request.
- User Should be able to comment on Posts.

Non-functional Requirements

- Scalability: System should support 500 million DAU.
- Availability – System should be highly available first then consistent.

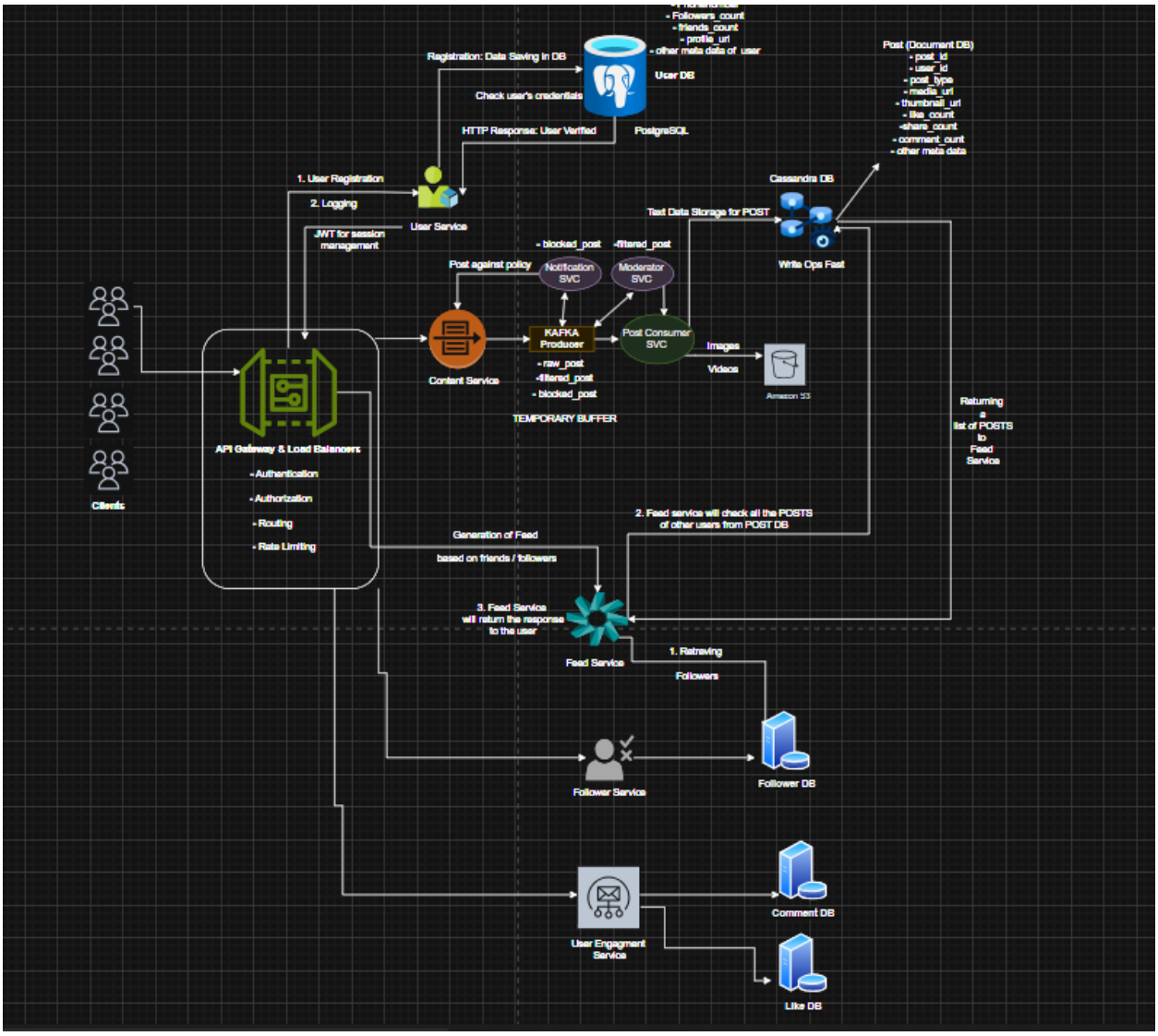
  Reason: If the system is not operational, it become useless.

- Latency : Required: < 500 ms.

Core-Entitles of the System:

1. User/Client.
2. Post.
3. Comment
4. Like.
5. Feed.

REQUIRED SYSTEM DESIGN –



Learning Outcomes :

- Understand the design and architecture of a scalable E-Commerce Platform.
- Gain Hands – on experience with Apache Kafka for real time Data Streaming.
- Develop skills in integrating distributed system for high availability and scalability.