Estimated Completion Time: 30 - 60 mins

<mark>You can also submit images of hand written schemas and diagrams</mark>

Objective: Design and implement a scalable microservice to process CSV files containing inventory data from thousands of dealers. The service will extract image URLs, process the images asynchronously using an existing image processing service, and return the processed data.

Existing Service Overview:

- Asynchronous API which accepts image URLs and returns a UUID.
- Upon completion, the service calls a webhook with the UUID and transformed URLs.

Use Case:

- CSV files are received hourly from thousands of dealers to service's S3 bucket.
- Each CSV row represents a car, with a unique identifier (e.g., VIN) and comma-separated image URLs.

System Requirements:

- Each CSV file can have up to 5000 records, averaging 200 records per file.
- The system should be scalable for varying loads.

Tasks:

1. **High-Level Design:**
   ○ Create a design outlining architecture and data flow
   ○ Include components: S3 integration, CSV processing, image URL extraction, interaction with the image processing service, and webhook handling.
2. **Database Schema:**
   ○ Design a schema to store processed data and track processing status.
   ○ Include tables for vehicle data, processing status, image URLs, etc.
   ○ Ensure efficient querying and updating.
3. **Scalability:**
   ○ Explain scalability strategies.
   ○ Consider AWS services like Lambda, SQS, and auto-scaling groups.

Submission Guidelines:

1. **HLD:** Create single pdf/image file of your HLD
2. **Schema:** Create a single file mentioning Database schema with table definitions and relationships.

Upload both of them separately in the Response Form.