**Low-Level Design for Zomato**

User Authentication

Order Delivered

Check Status

Cash on Delivery

Paytm

Display “Not Available”

Cash on Delivery

Order Delivered

Check Status

Login/Signup

Search Restaurant

Search food

Select Dish

Place order

Payment

Debit\Credit Card

**1. User Management:**

* **Authentication Service:**
  + - Implement endpoints for user registration, login, and logout.
    - Utilize JWT (JSON Web Tokens) for session management.
* **User Profile Service:**
  + - Store user profiles in a relational database (e.g., PostgreSQL).
    - Include endpoints for profile creation, updating, and retrieval.

**2. Restaurant Listings:**

* **Search and Filter Service:**
  + - Implement search functionality using Elasticsearch or similar search engine.
    - Provide APIs for filtering restaurants by location, cuisine, ratings, etc.
* **Restaurant Details Service:**
  + - Store restaurant information in a database.
    - Implement APIs for retrieving detailed restaurant data including menu, reviews, and photos.

**3. Ordering and Delivery:**

* **Order Management Service:**
* Store order information in a database with appropriate schema design.
* Implement APIs for placing orders, updating order status, and retrieving order history.
* **Delivery Service:**
  + - Integrate with third-party delivery services (e.g., Door Dash API) for order delivery.
    - Track order status in real-time and provide updates to users.

**4. Reviews and Ratings:**

* **Review Management Service:**
  + - Store reviews in a database linked to the respective restaurant.
    - Implement APIs for submitting reviews, fetching reviews, and calculating overall ratings.
* **Moderation Service:**
  + - Implement moderation logic to filter inappropriate content and handle reported reviews.
    - Use natural language processing (NLP) techniques for sentiment analysis.

**5. Admin Panel:**

* **Admin Dashboard Service:**
* Provide a web interface for administrators to manage restaurants, users, and reviews.
* Include features for content moderation, user management, and analytics.
* **Analytics Service:**

Collect and analyze data on user activity, order volume, popular cuisines, etc.

Generate reports and visualizations to help administrators make data-driven decisions.

**Database Schema:**

* **User Table:**
* User ID (PK), Username, Email, Password Hash, Profile Picture, etc.
* **Restaurant Table:**
* Restaurant ID (PK), Name, Location, Cuisine, Ratings, etc.
* **Menu Item Table:**
* Item ID (PK), Restaurant ID (FK), Name, Description, Price, etc.
* **Order Table:**
* Order ID (PK), User ID (FK), Restaurant ID (FK), Items, Total Price, Status, etc.
* **Review Table:**
* Review ID (PK), User ID (FK), Restaurant ID (FK), Rating, Comment, Timestamp, etc.