University of East London

DATABASE MANAGEMENT SYSTEMS

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TALABAT APPLICATION

SYSTEM BULIDERS

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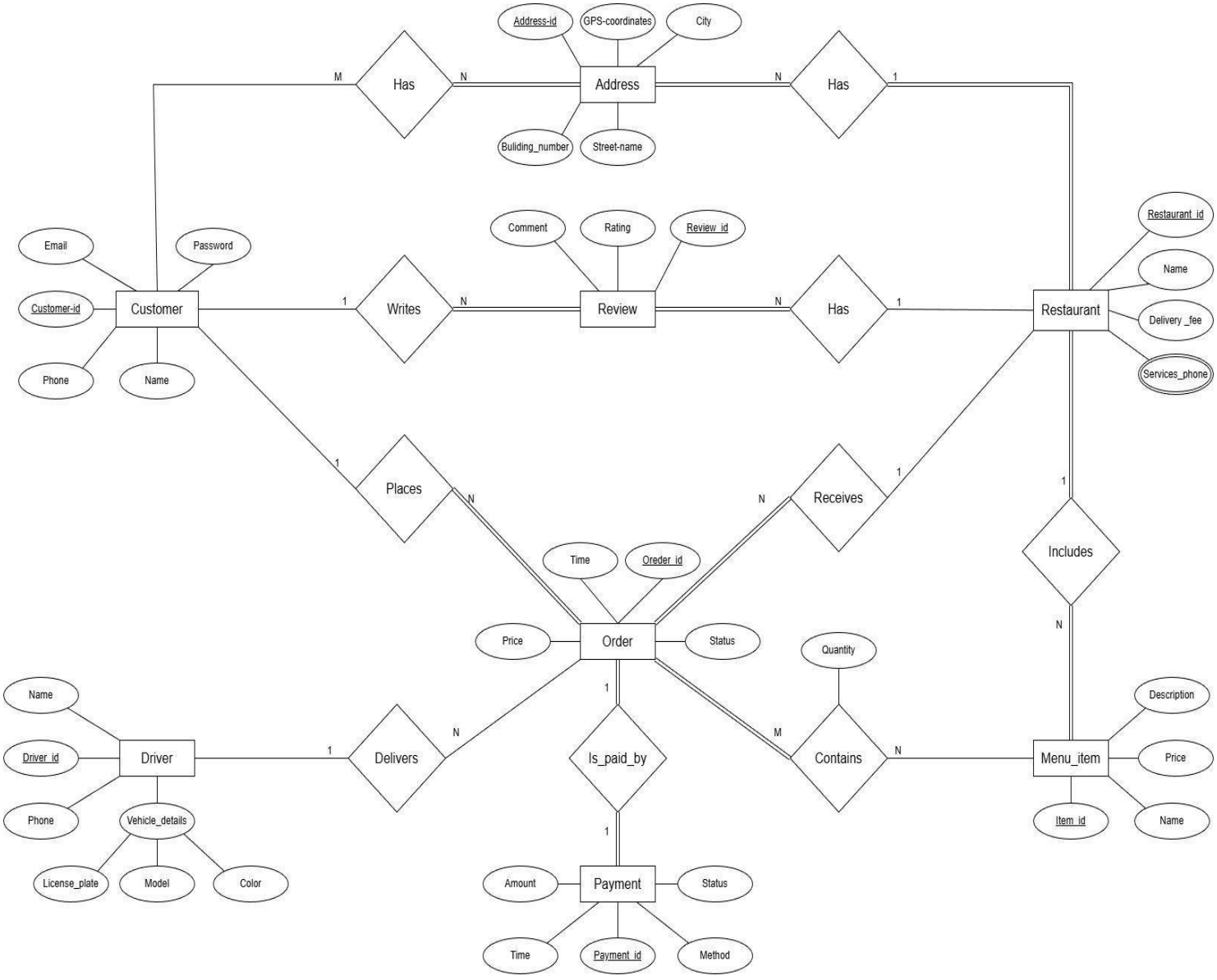
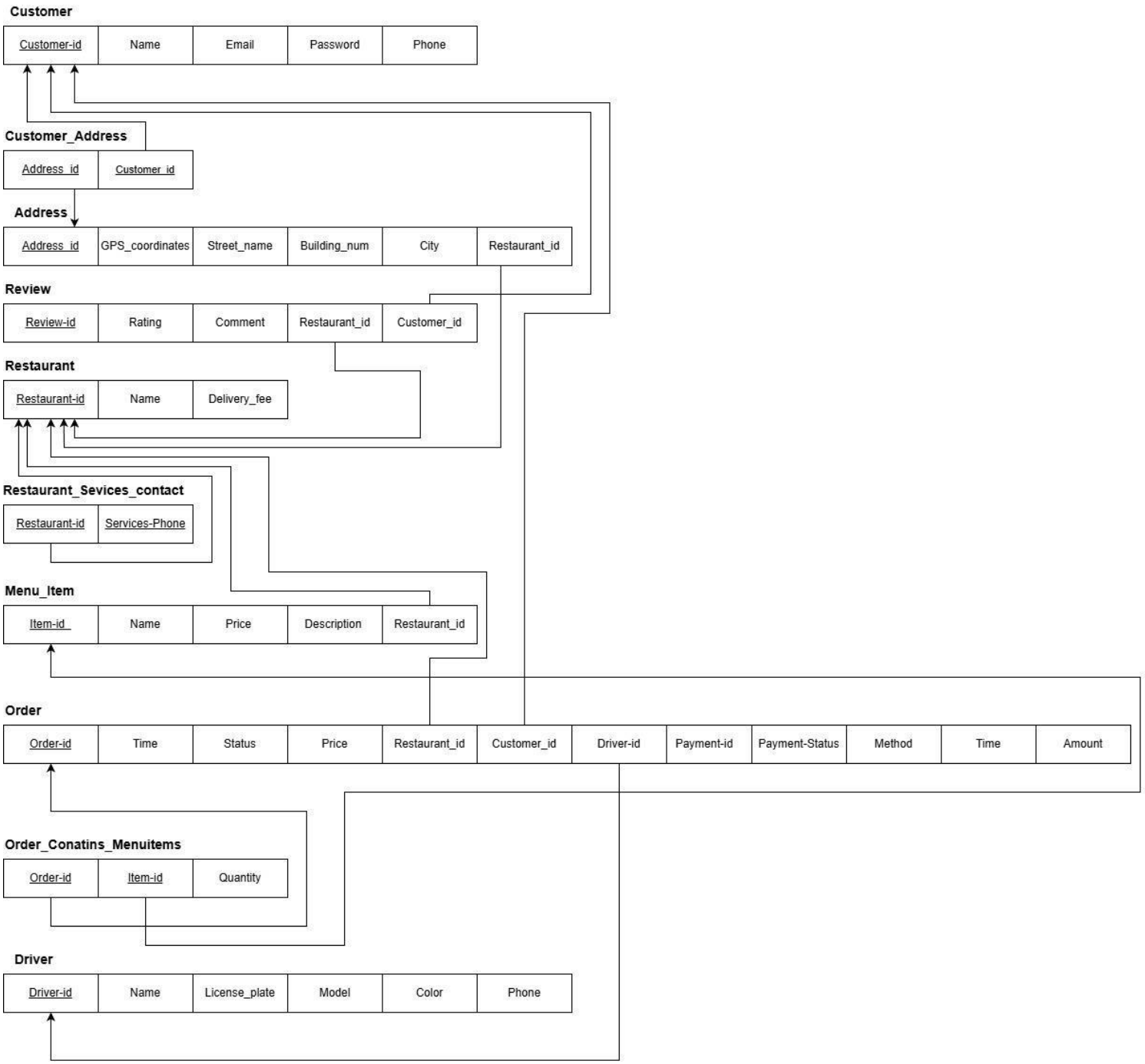
STEP 1: ENTITY RELATIONSHIP DIAGRAM



STEP 2: DATABASE SCHEMA



STEP 3: ASSUMPTION DOCUMENT

Relationships:

1. **Relationship:** Delivers (Driver — Order)
   Cardinality:
   1:N (One driver delivers many orders)
   Assumptions:
   a) Each order is delivered by exactly one driver ,and the driver can deliver multiple orders .
   b) A driver might not be delivering any order at a given time.
   c) Drivers can exist in the system even if they are not assigned to any order yet.
   d) A driver must be registered in the system (with valid driver ID and vehicle details) before being assigned to any order.
2. **Relationship:** Is_paid_by (Order — Payment)
   Cardinality:
   1:1 (One order has one payment)
   Assumptions:
   a) Each order is associated with only one payment record, even if the payment method involves multiple steps.
   b) One payment belongs to only one specific order.
   c) An order cannot exist without payment, a payment cannot exist without an order.
   d) The system assumes payment is processed through different methods (cash, credit card, mobile app, etc.).
3. **Relationship:** Contains (Order — Menu_item)
   Cardinality:
   M:N (Orders contain many menu items, and menu items can belong to many orders)
   Assumptions:
   a) An order can contain multiple menu items, and the same menu item can appear in many orders.
   b) The Quantity of each menu item ordered is stored as an attribute of the relationship (e.g., Quantity).
   c) Each order must contain at least one menu_item , while a specific menu_item can or cannot exist in an order.
   d) Menu items must exist in the restaurant's menu before an order can contain them.
4. **Relationship:** Places (Customer — Order)
   Cardinality:
   1:N (Customer places many orders while the order is placed by one customer)
   Assumptions:
   a) The Customer may place one or many orders
   b) The Order must be placed by one customer
5. **Relationship:** Receives (Restaurant — Order)
   Cardinality:
   1:N (The Restaurant receives one or many Orders while the Order is sent to one restaurant)
   Assumption:
   a) The Restaurant may receive one or more orders
   b) The Order must be sent to only one Restaurant

6. **Relationship:** Has (Customer — Address)
   Cardinality:
   M:N (Customer has one or more addresses and the address can have one or more Customers)
   Assumption:
   a) Customer may have one or more addresses
   b) Address must have at least one Customer
7. **Relationship:** Has (Restaurant — Address)
   Cardinality:
   1:N (The Restaurant has one Address and the address represents one restaurant)
   Assumption:
   a) The Restaurant must have at least one address
   b) The Address must Address one Restaurant

8. **Relationship:** Writes (Customer — Review)
   Cardinality:
   1:N (The Customer writes one or many Reviews while the Review is written by one Customer)
   Assumption:
   a) The Customer may write one or more Reviews
   b) The Review must be written by one Customer

9. **Relationship:** Has (Restaurant — Review)
   Cardinality:
   1:N (The Restaurant has one or many Reviews while the Review is written to one Restaurant)
   Assumption:
   a) The Restaurant may have one or more Reviews
   b) The Review must be written to one Restaurant

10. **Relationship:** Includes (Restaurant — Menu_item)
    Cardinality:
    1:N (The Restaurant includes one or many Menu Items while the Menu item is included by one Restaurant)
    Assumption:
    a) The Restaurant must include one or more of the following menu items
    b) The Menu Item must be included by at least one Restaurant

Entities:

1) **Driver:** represents the delivery personnel responsible for delivering orders. Each driver has attributes such as driver_id (PK), name, phone, and vehicle_details (composite attribute) with sub-attributes model, color, and license_plate. A driver can deliver multiple orders.

2) **Order:** represents a food order made by a customer. each order include order_id (PK), price, time, and status. An order is placed by one customer, received by one restaurant, delivered by one driver, contains multiple menu items (with quantities), and is associated with one payment.

3) **Payment:** records how an order is paid. Attributes include payment_id (PK), amount, time, method, and status. Each order is linked to one payment, and each payment corresponds to exactly one order.

4) **Menu_item:** includes the items offered by each restaurant. each order has item_id(PK), name, description, and price. A restaurant offers multiple menu items, and each menu item can appear in many orders.

5) **Customer:** represents the personal details of the Customer. Each Customer has Name, E-mail, Phone no, Password and is identified by Customer_id (P.K)

6) **Restaurant:** represents the details of each restaurant represented by Name, Delivery_fee, Services_phone, and is identified by Restaurant_id (P.K)

7) **Review:** represents the Customer's opinion of the Shipping and Restaurant represented by the Comment, Rating and is identified by Review_id (P.K)

8) **Address:** represents the addresses of the Customers and Restaurants in the following attributes GPS-coordinate, City, Building_no, Street_name and is identified by the Address_id (P.K) .

THANK YOU