Distributed Database Schema

Entity Relationship Diagram for Inventory Supply Chain Management:

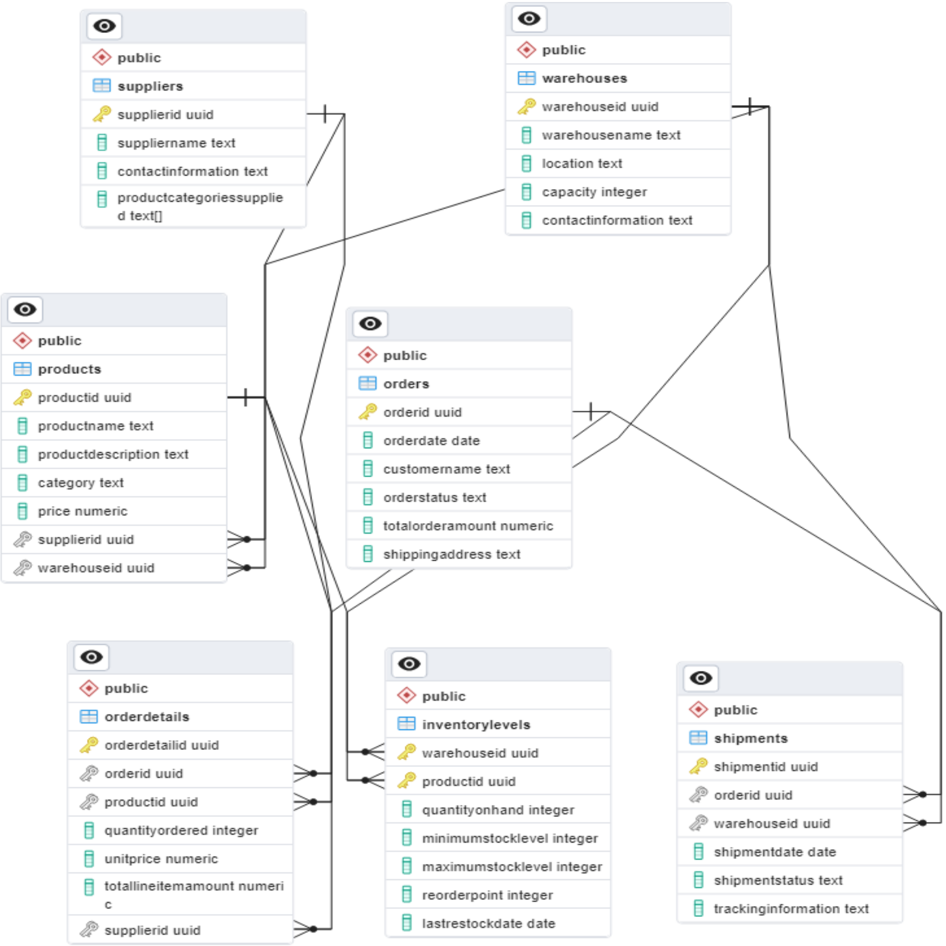

Table Definitions:

1. **Suppliers Table:**
    - **SupplierID**: Unique identifier for each supplier.
    - **SupplierName**: The name of the supplier.
    - **ContactInformation**: Contact information for the supplier.
    - **ProductCategoriesSupplied**: An array or list of product categories supplied by the supplier.
    - **Relationships**: No direct relationships with other tables.
2. **Warehouses Table:**
    - **WarehouseID**: Unique identifier for each warehouse.
    - **WarehouseName**: The name of the warehouse.
    - **Location**: The physical location of the warehouse.

   - **Capacity**: The capacity of the warehouse in terms of storage.
   - **ContactInformation**: Contact information for the warehouse.
   - **Relationships**: No direct relationships with other tables.
3. **Products Table:**
   - **ProductID**: Unique identifier for each product.
   - **ProductName**: The name of the product.
   - **ProductDescription**: A description of the product.
   - **Category**: The category to which the product belongs.
   - **Price**: The price of the product.
   - **SupplierID**: Foreign key referencing the **SupplierID** in the **Suppliers** table.
   - **WarehouseID**: Foreign key referencing the **WarehouseID** in the **Warehouses** table.
   - **Relationships**:
     1. products are supplied by specific suppliers. This relationship indicates that each product in the table is associated with a supplier. For example, if you are managing a store, each product (like a laptop or a smartphone) is supplied by a specific supplier or manufacturer.
     2. Products are stored in warehouses before being distributed or sold. This relationship signifies that each product is associated with a particular warehouse. This is crucial in tracking the inventory and managing the logistics of the supply chain.

4. **Orders Table:**
   - **OrderID**: Unique identifier for each order.
   - **OrderDate**: The date when the order was placed.
   - **CustomerName**: The name of the customer who placed the order.
   - **OrderStatus**: The status of the order (e.g., pending, shipped, delivered).
   - **TotalOrderAmount**: The total amount for the entire order.
   - **ShippingAddress**: The address to which the order will be shipped.
   - **Relationships**:
     1. The Orders table doesn't have direct relationships with other tables. This represent the initial stage of order creation, where basic information like order date, customer name, and shipping details are recorded.
5. **Order Details Table:**
   - **OrderDetailID**: Unique identifier for each order detail.
   - **OrderID**: Foreign key referencing the **OrderID** in the **Orders** table.
   - **ProductID**: Foreign key referencing the **ProductID** in the **Products** table.
   - **QuantityOrdered**: The quantity of the product ordered.
   - **UnitPrice**: The unit price of the product.
   - **TotalLineItemAmount**: The total amount for the line item.
   - **SupplierID**: Foreign key referencing the **SupplierID** in the **Suppliers** table.

   - **Relationships**:
      1. This relationship indicates that each order detail is part of a specific order. In other words, it links detailed information of what products were ordered, in what quantity, and at what price, to a specific order.
      2. Each order detail is associated with a particular product. This helps in identifying the specific products included in an order.
      3. Additionally, the order detail is linked to a supplier. This provides information about the supplier of each product in the order.

6. **Shipments Table:**
   - **ShipmentID**: Unique identifier for each shipment.
   - **OrderID**: Foreign key referencing the **OrderID** in the **Orders** table.
   - **WarehouseID**: Foreign key referencing the **WarehouseID** in the **Warehouses** table.
   - **ShipmentDate**: The date when the shipment was made.
   - **ShipmentStatus**: The status of the shipment.
   - **TrackingInformation**: Information about the shipment tracking.
   - **Relationships**:
      1. Shipments are associated with specific orders. This relationship helps in tracking which shipments are related to orders.
      2. Each shipment is linked to a warehouse, indicating the origin or destination of the shipped products.
7. **Inventory Levels Table:**
   - **WarehouseID**: Foreign key referencing the **WarehouseID** in the **Warehouses** table.
   - **ProductID**: Foreign key referencing the **ProductID** in the **Products** table.
   - **QuantityOnHand**: The current quantity of the product in the warehouse.
   - **MinimumStockLevel**: The minimum stock level for the product.
   - **MaximumStockLevel**: The maximum stock level for the product.
   - **ReorderPoint**: The reorder point for the product.
   - **LastRestockDate**: The date when the last restocking of the product occurred.
   - **Relationships**:
      1. Shipments are associated with specific orders. This relationship helps in tracking which shipments are related to orders.
      2. Each shipment is linked to a warehouse, indicating the origin or destination of the shipped products.