**PROJECT PART 2**

**Group Members**

Member 1: Anthony Fang

Member 2: Ekta Singh

Member 3: Mahak Kataria

Member 4: Amogh Ranganathaiah

**Organization Information**

**Name:** AEMA Imports LLC

**Business Sector:** Import / Distribution

**Description:** AEMA Imports LLC is a dynamic importing company based in San Francisco, USA, focusing on bringing high-quality sea fish, caviar, and Chinese garments to the American market. The company emphasizes sustainable and ethical sourcing practices, working closely with suppliers to ensure product quality and compliance with US import regulations. The database will focus on supplier management, inventory tracking, customs and compliance documentation, sales, and customer relationship management.

**Questions**

1. A list of your entities and attributes. For each entity, provide a short description.  
   Entity 1: Suppliers   
   Represents entities or companies that supply products to the business. Used for managing and maintaining supplier relationships, including contact details and compliance status.  
   Attributes: SupplierID, SupplierName, Contact, Country, and ProductType.

Entity 2: Customers  
Represents individuals or organizations that purchase products from the business. Used for managing customer relationships, tracking purchase history, and understanding customer preferences.  
Attributes: CustomerID, CustomerName, Contact, OrderDetails, and PurchaseHistory.  
  
Entity 3: Inventory  
Represents the stock of products available for sale by the business. Used for tracking available inventory, managing stock levels, and pricing products.  
Attributes: ProductID, ProductName, ProductType, QuantityInStock, SupplierName, ReorderLevel, and UnitPrice.  
  
Entity 4: Documents  
Represents various documents related to business operations, such as invoices, import declarations, or customs clearances. Used for managing and organizing documents associated with sales, shipments, and regulatory compliance.  
Attributes: DocumentID, SupplierName, Contact, ProductType, DocumentType, IssueDate, ExpiryDate, and SupplierID.  
  
Entity 5: Sales  
Represents the transactions where products are sold to customers. Used for tracking sales activity, analyzing customer purchasing behavior, and generating revenue.  
Attributes: SalesID, QuantitySold, UnitPrice, TotalPrice, SaleDate, CustomerID, and ProductID.  
  
Entity 6: Shipment  
Represents the process of managing and coordinating the movement of products from suppliers to our organization. Used for tracking shipments, managing logistics operations, and ensuring timely delivery of products.  
Attributes: ShipmentID, ArrivalDate, ShippingMethod, TrackingNumber, and SupplierID.

1. In addition, for each attribute, provide information about their domain constraints (specific data type, any limit in data entry).  
     
   Entity 1: Suppliers

SupplierID: VARCHAR(10) - Unique identifier for each supplier.

SupplierName: VARCHAR(255) - Name of the supplier.

Contact: VARCHAR(255) - Contact person or department at the supplier.

Country: VARCHAR(100) - Country where the supplier is located.

ProductType: VARCHAR(100) - Type of product supplied by the supplier.

Entity 2: Customers

CustomerID: VARCHAR(10) - Unique identifier for each customer.

CustomerName: VARCHAR(255) - Name of the customer.

Contact: VARCHAR(255) - Contact person or department at the customer.

OrderDetails: VARCHAR(255) - Customer preferences or interests.

PurchaseHistory: INT - Number of purchases made by the customer.

Entity 3: Inventory

ProductID: VARCHAR(10) - Unique identifier for each product.

ProductName: VARCHAR(255) - Name of the product.

ProductType: VARCHAR(100) - Type or category of the product.

QuantityInStock: INT - Quantity of the product currently in stock.

SupplierName: VARCHAR(255) - Name of the supplier providing the product.

ReorderLevel: VARCHAR(50) - Reorder level status (e.g., Low, Medium, High).

UnitPrice: DECIMAL(10,2) - Price per unit of the product.

Entity 4: Documents

DocumentID: VARCHAR(10) - Unique identifier for each document.

SupplierName: VARCHAR(255) - Name of the supplier associated with the document.

Contact: VARCHAR(255) - Contact person or department at the supplier.

ProductType: VARCHAR(100) - Type or category of the product related to the document.

DocumentType: VARCHAR(100) - Type of document (e.g., Invoice, Import Declaration).

IssueDate: DATE - Date when the document was issued.

ExpiryDate: DATE - Date when the document expires.

SupplierID: ForeignKey – Refers to SupplierID from Supplier table.

Entity 5: Sales

SalesID: VARCHAR(10) - Unique identifier for each sale.

QuantitySold: INT - Quantity of the product sold.

UnitPrice: DECIMAL(10,2) - Price per unit of the product.

TotalPrice: DECIMAL(10,2) - Total price of the sale.

SaleDate: DATE - Date when the sale occurred.

CustomerID: Foreign Key – Refers to CustomerID from Customers table.

ProductID: Foreign Key – Refers to ProductID from Inventory table.

Entity 6: Shipment

ShipmentID: VARCHAR(10) - Unique identifier for each shipment.

ArrivalDate: DATE - Date when the shipment is expected to arrive.

ShippingMethod: VARCHAR(50) - Method of shipping (e.g., Air, Sea, Ground).

TrackingNumber: VARCHAR(20) - Tracking number for the shipment.

SupplierID: Foreign Key – Refers to SupplierID from Suppliers table.

1. A list of ALL the Business Rules used by your organization. Those rules should be represented in your ER diagram. I advise you to go first define your business rules and then derive your diagram from them.
   1. Each supplier CAN have one or more product in the inventory.
   2. Each inventory MUST be associated with one or more suppliers.
   3. Each supplier MUST provide one or more documents.
   4. Each supplier CAN send one or more shipments.
   5. Each document MUST be associated with just one supplier.
   6. Each customer MUST purchase one or more products from inventory.
   7. Each sale MUST be associated with just one customer.
   8. Each sale MUST happen for a product in the inventory.
   9. Each product in the inventory CAN be sold.
   10. Each inventory MUST be accessible to all customers.
   11. Each sale MUST be calculated on quantity sold in inventory.
   12. Each shipment MUST have at least one supplier.
2. An ER diagram (or EER diagram if needed).  
   A diagram of a data flow

   Description automatically generated
3. A relation model (normalized 3 NF) based on your ERD. 1NF or 2NF relations are not required, but you must be sure you have 3NF relational model.

A diagram of a product

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