**T.C.**

**KARABÜK UNIVERSITY**

**ENGINEERING FACULTY**

**COMPUTER ENGINEERING**

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**DATABASE SYSTEM**

**PROJECT ASSIGMENT**

**THE INVENTORY CONTROL MANAGEMENT**

**DATABASE PROJECT**

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**25/05/2024**

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# DETAIL OF THE SCENARIO

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| This scenario describes the database designed for the inventory control system of an e-commerce site and explains how this system operates. This database manages all the relationships and processes necessary to improve users' shopping experience. Below, the main entities in the database and the relationships between them are detailed.  **Customers:** Contains customer information. There is a one-to-many relationship between customers and orders; a customer can place multiple orders. Additionally, there is a one-to-many relationship between customers and addresses; a customer can have multiple addresses.  Address: Contains customer address information. There is a one-to-many relationship between the address table and customers; a customer can have multiple addresses. Additionally, there is a mandatory one-to-one relationship between the address table and districts; each address must be associated with one district.  Countries: Contains country information. There is a one-to-many relationship between countries and cities; a country can have multiple cities.  Cities: Contains city information. There is a one-to-many relationship between cities and countries; a city can belong to only one country. Additionally, there is a one-to-many relationship between cities and towns; a city can have multiple towns.  Towns: Contains town information. There is a one-to-many relationship between towns and cities; a town can belong to only one city. There is also a one-to-many relationship between towns and districts; a town can have multiple districts.  Districts: Contains district information. There is a one-to-many relationship between districts and towns; a district can belong to only one town. Additionally, there is a mandatory one-to-one relationship between districts and addresses; a district must be associated with only one address.  Sales: Contains sales information. There is an optional-to-mandatory one-to-one relationship between sales and orders; each sale can be associated with or must be associated with an order. There is a one-to-one relationship between sales and payment type; each sale has a payment type.  Credit Sales and Crypto Sales (Subtypes of Sales): These are subtypes of sales. There is a one-to-one relationship between credit sales and credit status; each credit sale has a credit status.  Orders: Contains order information. There is a one-to-many relationship between orders and customers; a customer can place multiple orders. There is an optional-to-mandatory one-to-one relationship between orders and sales; each order can be associated with or must be associated with a sale. There is a one-to-one relationship between orders and order status; each order has a status. There is a one-to-many relationship between orders and products; an order can contain multiple products.  Order Status: Contains order status information. There is a one-to-one relationship between order status and orders; each order has a status.  Credit Status: Contains credit status information for credit sales. There is a one-to-one relationship between credit status and credit sales; each credit sale has a credit status.  Payment Type: Contains payment type information. There is a one-to-one relationship between payment type and sales; each sale has a payment type.  Products: Contains product information. There is a one-to-many relationship between products and orders; a product can be included in multiple orders. There is a many-to-one relationship between products and product categories; a product can belong to only one category. There is a many-to-many relationship between products and suppliers, managed by the supplierProduct intermediate table. There is a one-to-many relationship between products and purchases; a product can be involved in multiple purchase transactions. There is a one-to-one relationship between products and measures; each product has a measure.  Product Categories: Contains product category information. There is a many-to-one relationship between product categories and products; a category can have multiple products.  Measures: Contains measurement unit information for products. There is a one-to-one relationship between measures and products; each product has a measurement unit.  Suppliers: Contains supplier information. There is a many-to-many relationship between suppliers and products, managed by the supplierProduct intermediate table.  SupplierProduct: Manages the many-to-many relationship between suppliers and products. There is a many-to-many relationship between suppliers and products through the supplierProduct table.  Purchases: Contains product purchase information. There is a one-to-many relationship between purchases and products; a product can be involved in multiple purchase transactions. DEVELOPING ERDENTITIES  * Customers * Products * Product Categories * Purchases * Measure * Suppliers * SupplierProduct(Junction Table) * Address * Countries * Cities * Towns * District * Sales * Payment Type * CreditSales(SubType) * Credit Status * CryptoSales(SubType) * Orders * OrderStatus  ATTRIBUTES metin, ekran görüntüsü, diyagram içeren bir resim  Açıklama otomatik olarak oluşturuldu DEFINING ALL NECESSARY RELATIONSHIPS customers  Relationships:  orders with one-to-many  address with one-to-many  address  Relationships:  customers with one-to-many  district with one-to-one (mandatory)  countries  Relationships:  cities with one-to-many  cities  Relationships:  countries with one-to-many  towns with one-to-many  towns  Relationships:  cities with one-to-many  district with one-to-many  district  Relationships:  towns with one-to-many  address with one-to-one (mandatory)  sales  Relationships:  orders with one-to-one (optional - mandatory)  payment type with one-to-one  credit sales and crypto sales  Relationships:  credit sales and credit status with one-to-one  orders  Relationships:  customers with one-to-many  sales with one-to-one (optional - mandatory)  order status with one-to-one  products with one-to-many  order status  Relationships:  orders with one-to-one  credit status  Relationships:  credit sales with one-to-one  payment type  Relationships:  sales with one-to-one    products  Relationships:  orders with one-to-many  product categories with many-to-one  suppliers with many-to-many (via supplier product)  purchases with one-to-many  measure with one-to-one  product categories  Relationships:  products with many-to-one  measure  Relationships:  products with one-to-one  suppliers  Relationships:  products with many-to-many (via supplier product)  supplierProduct  Relationships:  suppliers and products with many-to-many  purchases  Relationships:  products with one-to-many |
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## 2.4 IDENTIFYING MATRIX DIAGRAM

