**Database Assignment Week-4a**

**Creating Databases and Modifying Data**

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**GitHub link: https://github.com/MohammedMinhajUddin/DB-week4arep**

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**Summary:**

This project consists of information about the business database of the toy making company, its database architecture, entities and ERD diagram along with the DDL commands used to setup and modify its database.

**Network Architecture:**

Diagram

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I have designed a 3-tier network architecture for my company which consists of a Client Server, Application Server, and  Database Server.

**Tier-1 (Client Server):**

          Tier 1 of the architecture is client-server which consists of two functions presentation and UI. The presentation refers to how the application is shown to the user and UI refers to how the user interactions are interpreted.

**Tier -2(Application Server):**

          Tier 2 of the architecture is the Application server which consists of two functions business logic and Data Access.  Business logic is responsible for data validation and data access is abstract to actions that we need to perform on the database or we can also so data access is an interface between the database and the user.

**Tier -3(Database Server)**

          Tier 3 is a database server where all the data storage resides. This is where the data access layer performs all the physical actions such as insertion, deletion.

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**UML DIGRAM TO REPRESENT THE PHYSICAL MODEL OF THE BUSINESS:**

Diagram

Description automatically generated

**Representation of Logical Model of the Business with Crow’s foot notation:**

**Diagram

Description automatically generated**

**Description of Entities and It’s attributes:**

**CustomerInfo:** CustomerInfo entity is used to store the information about the customer such as the CustomerID, CustomerName, CustomerAddress, CustomerPhone.

CustomerID: Unique Key assigned to each customer as an Identifier.

CustomerName: This attribute is used to save the name of the customer.

CustomerPhone: This attribute is used to save the Phone Number of the customer.

CustomerAddress: This attribute is used to save the customer address.

**InstoreSales:** This entity is used to track the instore Sales data which can be used to track the operations work such as profit and loss along with employee Sales performance. Its attributes are

SalesID: Unique ID associated with each sale.

CustomerName: Name of then customer who made the purchase.

AmountBilled: Total amount billed in the sale with taxes.

PaymentInfo: Which payment method was used to pay the amount ‘cc’,’dc’ or ‘cash’

EmployeeID: The employee ID of the salesmen who made the sale, used to track employee performance.

**Detail EcommerceSales:** This entity is used to track the number of items sold in each Online Order to keep track of the inventory, Comparison of sales at item level and to maintain item in stock.

OrderID: Unique ID associated with each Online sale.

ItemID: Unique ID associated with each item in the sale.

ItemName: Name of the Item sold.

ItemQuanitiy: Quantity of items sold.

**OnlineStore Sale:** This entity is used to keep the track of online sales data for the operations work such as tracking profit/loss and shipping

OrderID: Unique ID associated with each order placed online.

CustomerName: Name of the customer who placed the order.

ShippingMethod: Service used to deliver the order for example “FedEx”, “UPS” and “USPS”.

TrackingID: Unique ID to track the order.

**InstoreDetail Sales:** This entity is used to track the number of items sold in each sale to keep track of the inventory, Comparison of sales at item level and to maintain item in stock.

SalesID: Unique ID associated with each sale.

ItemID: Unique ID associated with each item in the sale.

ItemName: Name of the Item sold.

ItemQuanitiy: Quantity of items sold.

**Operations:** Operations entity is used to monitor the employee’s performance and attendance, also at team level.

EmployeedID: Unique ID associated with each employee.

EmployeeName: Used to save the name of the employee.

TeamName: Used to save the name of the team the employee belong too.

Performance: Used to save the performance information of each employee.

Attendance: Used to save the attendance of each employee.

**Inventory**: Inventory entity is used to store the inventory information about the items ranging from raw material for manufacturing to office essentials for back office team categorized by item type.

ItemID: Unique ID associated with each item.

ItemName: Name of the item.

Instock: If the item is in stock.

ItemType: To represent if the item is a raw material, machinery, tools or some back-office team essentials.   
  
**Logistics:** Logistics entity is used to store the logistics information of the company to track which consignment is coming from which vendor, what is the item type, weight, location and status of the consignment.

ConsignmentID: A unique consignment ID specific to each consignment.

Weight: Weight of the consignment.

ItemType: To categories what type of item the consignment has.

Status: To track the status of the consignment

Location: To track from where the consignment is arriving.

**Vendor:** The vendor details are important to store the information about the vendors who supply raw materials and other essentials required for the manufacturing and other operations of the company.

VendorID: A unique id associated with each vendor.

ItemID: The ID of the items supplied by the vendor.

ItemType: To track what type of item is supplied by the vendor.

ConsignmentID: to track the consignment sent from the vendor.

I have used Xampp to create and load the database.