Vivekanand Education Society's
Institute of Technology
Approved by AICTE & Affiliated to University of Mumbai
Artificial Intelligence and Data Science Department

Subject/Odd Sem 2023-23/Experiment 1

Name : Rajat Disawal	Class/Roll No. :D6ADA/13	Grade :

Title of Experiment : Identify the case study and detailed statement of the problem. Design an Entity- Relationship (ER) / Extended Entity-Relationship (EER) Model.

Objective of Experiment : To design an ER / EER model

Practical No. 1

Name: Rajat Disawal Class: DSADA/13

TITLE: Identify the case study and detailed statement of the problem. Design an Entity-Relationship (ER) / Extended Entity-Relationship (EER) Model.

Objective: To design an ER/EER model

CASE STUDY : LOGISTICS MANAGEMENT SYSTEM

* PROBLEM STATEMENT: A given logistics company faces a lot of issues due to lack of a proper inventory management system. Existing system struggles to provide real-time Tracking and co-ordination. Data inconsistencies delay decisions and finally the logistics chain.

* OBJECTIVE: To design a comprehensive ER model for a logistical Inventory managemat system.

Sundaram
FOR EDUCATIONAL USE

Entity - Relationship Model Design

(1) ENTITIES :

- Product : → ProductID → Name → Description → Weight → Unit Price → Quantity Stock
- Warehouse: → WarehouseID → Location → Capacity → ContactPerson → Contact Number
- Shipment : → ShipmentID → ShipmentDate → ArrivalDate → Status
- Carrier : → CarrierID → Name → ContactPerson → ContactNumber → FleetSize

(2) RELATIONSHIPS :

- Inventory : Connects Product and Warehouse. Represents the products in diffent warehouses.
- Transport : Connects Warehouse and Shipment. Represents transportation from warehouses to destinations.
- CarrierAssignment : Connects Shipment and Carrier. Represents assignments of carriers.

Sundaram
FOR EDUCATIONAL USE

(3) ATTRIBUTES FOR RELATIONSHIPS:

- Inventory: → Inventory ID → Stock Level → Reorder Point
- Transport: → Transport ID → Departure Date → Arrival Date → Mode
- Carrier Assignment: → Assignment ID → Assignment Date → Tracking Number

(4) CARDINALITIES:

- One product to multiple warehouses (M:N)
- One warehouse to multiple shipments (1:N)
- One shipment to one carrier (1:1)
- One carrier to multiple shipments (1:N)

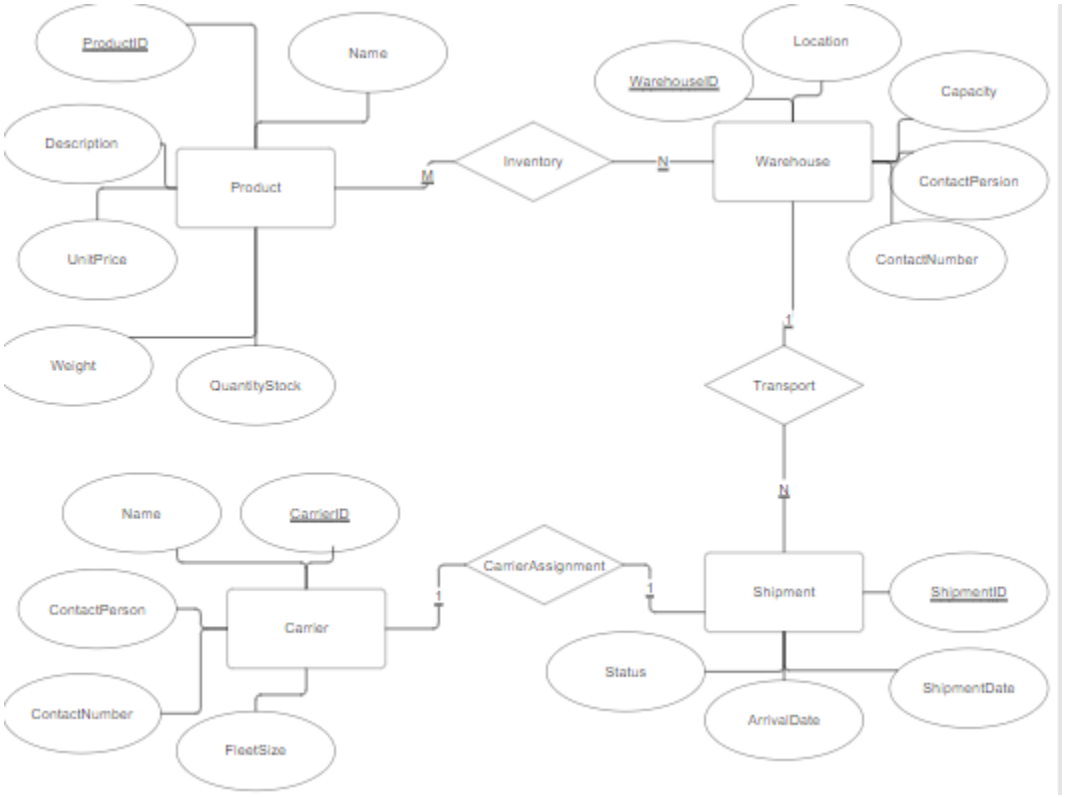
(5) CONSTRAINTS:

- Total participation of Inventory
- Partial participation for transport.

Sundaram
FOR EDUCATIONAL USE

Subject/Odd Sem 2023-23/Experiment 1

ER Diagram:



Conclusion: I successfully implemented a case study designing a ER diagram for an Inventory Management System for Logistic purposes.