

# Global Logistics and Supply Chain Management System

## – SQL Database Documentation

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### Database Name:

Global\_Logistics\_and\_Supply\_Chain\_Management\_System

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#### 1. Table: Client

Stores details of clients who send shipments.

```
CREATE TABLE Client (
    client_id INT PRIMARY KEY,
    name VARCHAR(100),
    address TEXT
);
```

#### **DESCRIPTION:**

Stores details of clients in the system.

- **client\_id:** Unique ID for each client (Primary Key)
- **name:** Name of the client
- **address:** Client's address

```
INSERT INTO Client (client_id, name, address) VALUES
(1, 'Alpha Corp', '123 Tech Park, Silicon Valley, USA'),
(2, 'Beta Industries', '56 Industrial Road, Munich, Germany'),
(3, 'Gamma Traders', '78 Harbour Lane, Singapore');
```

	client_id	name	address
▶	1	Alpha Corp	123 Tech Park, Silicon Valley, USA
	2	Beta Industries	56 Industrial Road, Munich, Germany
*	3	Gamma Traders	78 Harbour Lane, Singapore
	NULL	NULL	NULL

## 2. Table: Carrier

Stores information about logistics service providers (air, land, sea).

```
CREATE TABLE Carrier (
    carrier_id INT PRIMARY KEY,
    name VARCHAR(100),
    type ENUM('air', 'land', 'sea'),
    contact_info VARCHAR(200)
);
```

### DESCRIPTION:

Stores details of transport companies that deliver shipments.

- **carrier\_id**: Unique ID for each carrier (Primary Key)
- **name**: Name of the carrier company
- **type**: Mode of transport – air, land, or sea
- **contact\_info**: Contact details (phone, email, etc.)

```
INSERT INTO Carrier (carrier_id, name, type, contact_info) VALUES
(1, 'SkyFly Cargo', 'air', 'contact@skyflycargo.com'),
(2, 'LandMover Express', 'land', 'support@landmover.com'),
(3, 'OceanShip Lines', 'sea', 'info@oceanship.com');
```

	carrier_id	name	type	contact_info
▶	1	SkyFly Cargo	air	contact@skyflycargo.com
	2	LandMover Express	land	support@landmover.com
	3	OceanShip Lines	sea	info@oceanship.com
*	NULL	NULL	NULL	NULL

### 3. Table: Warehouse

Stores details of warehouses in different regions.

```
CREATE TABLE Warehouse (
    warehouse_id INT PRIMARY KEY,
    location VARCHAR(150),
    capacity INT
);
```

#### DESCRIPTION:

##### Warehouse Table

Stores information about storage facilities.

- **warehouse\_id:** Unique ID for each warehouse (Primary Key)
- **location:** Address or place where the warehouse is located
- **capacity:** Maximum storage capacity of the warehouse

```
INSERT INTO Warehouse (warehouse_id, location, capacity) VALUES
```

```
(1, 'Los Angeles, USA', 5000),
```

```
(2, 'Hamburg, Germany', 3000),
```

(3, 'Singapore Port, Singapore', 7000);

	warehouse_id	location	capacity
▶	1	Los Angeles, USA	5000
	2	Hamburg, Germany	3000
●	3	Singapore Port, Singapore	7000
*	NULL	NULL	NULL

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#### 4. Table: Employee

Stores information about employees assigned to either warehouses or carriers.

```
CREATE TABLE Employee (
    employee_id INT PRIMARY KEY,
    name VARCHAR(100),
    role VARCHAR(100),
    assigned_warehouse INT,
    assigned_carrier INT,
    FOREIGN KEY (assigned_warehouse) REFERENCES Warehouse(warehouse_id),
    FOREIGN KEY (assigned_carrier) REFERENCES Carrier(carrier_id)
);
```

DESCRIPTION:

#### Employee Table

Stores details of employees working in logistics.

- **employee\_id**: Unique ID for each employee (Primary Key)
- **name**: Employee's name
- **role**: Job role or position

- **assigned\_warehouse**: Linked warehouse where the employee works
  - **assigned\_carrier**: Linked carrier the employee works with
- ◆ An employee can be assigned **either** to a warehouse **or** to a carrier, not both.

```
INSERT INTO Employee (employee_id, name, role, assigned_warehouse, assigned_carrier)
VALUES
```

```
(1, 'John Smith', 'Warehouse Manager', 1, NULL),
(2, 'Lena Mueller', 'Shipping Coordinator', NULL, 1),
(3, 'Chen Wei', 'Dock Supervisor', 3, NULL),
(4, 'Raj Patel', 'Driver', NULL, 2);
```

	employee_id	name	role	assigned_warehouse	assigned_carrier
▶	1	John Smith	Warehouse Manager	1	NULL
	2	Alice Johnson	Logistics Coordinator	NULL	2
	3	Bob Lee	Shipping Supervisor	2	NULL
*	4	Emma Davis	Carrier Operations	NULL	1
*	NUL	NUL	NUL	NUL	NUL

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## 5. Table: Shipment

Stores shipment records including origin, destination, weight, and sender/receiver details.

```
CREATE TABLE Shipment (
    shipment_id INT PRIMARY KEY,
    origin VARCHAR(150),
    destination VARCHAR(150),
    weight DECIMAL(10,2),
    content_description TEXT,
    shipment_date DATE,
    sender_id INT,
```

```
receiver_id INT,  
FOREIGN KEY (sender_id) REFERENCES Client(client_id),  
FOREIGN KEY (receiver_id) references Carrier(carrier_id));
```

## **DESCRIPTION:**

### **Shipment Table**

Stores information about individual shipments.

- **shipment\_id**: Unique ID for each shipment (Primary Key)
- **origin**: Starting location of the shipment
- **destination**: Delivery location
- **weight**: Weight of the shipment
- **content\_description**: Description of items in the shipment
- **shipment\_date**: Date the shipment was sent
- **sender\_id**: Client who sent the shipment (linked to Client)
- **receiver\_id**: Carrier handling the shipment (linked to Carrier)

```
INSERT INTO Shipment (shipment_id, origin, destination, weight, content_description,  
shipment_date, sender_id, receiver_id) VALUES  
(1, 'Los Angeles, USA', 'Hamburg, Germany', 1200.50, 'Electronic Components', '2025-06-10',  
1, 1),  
(2, 'Hamburg, Germany', 'Singapore Port, Singapore', 850.75, 'Industrial Equipment', '2025-  
06-11', 2, 3),  
(3, 'Singapore Port, Singapore', 'Los Angeles, USA', 950.25, 'Textiles and Clothing', '2025-06-  
12', 3, 2);
```

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	shipment_id	origin	destination	weight	content_description	shipment_date	sender_id	receiver_id
*	1	Newark, NJ	Chicago, IL	250.50	Electronics	2025-06-10	1	2
*	2	Los Angeles, CA	Seattle, WA	500.00	Retail goods	2025-06-11	2	1
*	3	Houston, TX	Miami, FL	150.75	Medical Supplies	2025-06-12	3	3

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### Sample Data Included:

- **Clients:** 3 clients from USA, Germany, and Singapore
  - **Carriers:** Air, Land, and Sea transport companies
  - **Warehouses:** Located in 3 major global regions
  - **Employees:** Assigned either to a warehouse or a carrier
  - **Shipments:** 3 entries with varying origins, destinations, and descriptions
- 

### Entity Relationship Summary

#### Relationships:

- One **Client** can send multiple **Shipments**
- One **Carrier** can receive multiple **Shipments**
- One **Warehouse** can have multiple **Employees**
- One **Carrier** can have multiple **Employees**
- One **Employee** is assigned to either a **Warehouse** or a **Carrier** (not both)

