

DISTRIBUTOR–RETAILER MANAGEMENT SYSTEM



DATABASE MANAGEMENT SYSTEM PROJECT REPORT

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TELANGANA, 506004

July, 2025

PROBLEM STATEMENT:

The Distributor–Retailer Management System is designed to streamline and manage interactions between distributors and retailers, including product inventories, purchases, payments, and deliveries. The objective is to build a normalized relational database that ensures data integrity, supports financial tracking (balances, profits), and enables meaningful analytics through SQL queries. This project demonstrates core DBMS concepts such as schema design, normalization, foreign key constraints, and transactional data handling.

ASSUMPTIONS:

- Each distributor and retailer is uniquely identified using a UUID-based primary key.
- Every product has a fixed base price, and distributors apply individual discount percentages to determine the final price.
- A distributor maintains inventory for only the products they supply.
- Retailers purchase from one distributor at a time per purchase transaction.
- A single purchase can include multiple products (purchase items).
- Retailer final balances are updated after each purchase and payment.
- Payments are made from retailers to specific distributors and recorded with timestamps.
- Deliveries are linked directly to purchases and handled by external delivery companies.
- Soft deletes (`is_deleted`, `deleted_at`) are used for logical deletion of distributors and retailers.
- Foreign key constraints with ON DELETE actions (CASCADE or SET NULL) ensure referential integrity on deletion.
- Final balance calculations are handled consistently using logical triggers or manual updates during transactions.
- Inserted sample data reflects realistic values, names, and financial transactions for demonstration purposes.

TABLES:

1. distributors :-

Attribute	Data Type	Constraints
distributor_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
distributor_name	VARCHAR(255)	NOT NULL
distributor_full_name	VARCHAR(255)	NOT NULL
address	TEXT	NOT NULL
contact_number	VARCHAR(10)	NOT NULL, UNIQUE
email	VARCHAR(100)	NOT NULL, UNIQUE
bank_account_number	VARCHAR(20)	NOT NULL, UNIQUE
is_deleted	BOOLEAN	DEFAULT FALSE
deleted_at	TIMESTAMP	NULL allowed
password	VARCHAR(255)	NOT NULL

2. retailers:-

Attribute	Data Type	Constraints
retailer_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
retailer_name	VARCHAR(255)	NOT NULL
retailer_full_name	VARCHAR(255)	NOT NULL
address	TEXT	NOT NULL
contact_number	CHAR(10)	NOT NULL, UNIQUE
email	VARCHAR(100)	NOT NULL, UNIQUE
bank_account_number	VARCHAR(20)	NOT NULL, UNIQUE
opening_balance	DECIMAL(10, 2)	NOT NULL, CHECK (opening_balance ≥ 0)
final_balance	DECIMAL(10, 2)	NOT NULL, CHECK
is_deleted	BOOLEAN	DEFAULT FALSE
deleted_at	TIMESTAMP	NULL allowed
password	VARCHAR(255)	NOT NULL

3. products :

Attribute	Data Type	Constraints
product_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
product_name	VARCHAR(255)	NOT NULL
company_name	VARCHAR(255)	NOT NULL
base_price	DECIMAL(10,2)	NOT NULL, CHECK (base_price ≥ 0)
description	TEXT	NOT NULL

4. distributor_product_inventory:

Attribute	Data Type	Constraints
inventory_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
distributor_id	VARCHAR(36)	NOT NULL, FOREIGN KEY → distributors(distributor_id) ON DELETE CASCADE
product_id	VARCHAR(36)	NOT NULL, FOREIGN KEY → products(product_id) ON DELETE CASCADE
discount_percentage	DECIMAL(5,2)	DEFAULT 0.00, CHECK (discount_percentage ≥ 0 AND ≤ 100)
final_price	DECIMAL(10,2)	NOT NULL, CHECK (final_price ≥ 0)
stock_quantity	INT	NOT NULL, CHECK (stock_quantity ≥ 0)
purchase_cost	DECIMAL(10,2)	NOT NULL, CHECK (purchase_cost ≥ 0)

5. purchases :

Attribute	Data Type	Constraints
purchase_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
retailer_id	VARCHAR(36)	FOREIGN KEY → retailers(retailer_id) ON DELETE SET NULL
distributor_id	VARCHAR(36)	FOREIGN KEY → distributors(distributor_id) ON DELETE SET NULL
total_amount	DECIMAL(10,2)	NOT NULL, CHECK (total_amount ≥ 0)
purchase_date	DATE	NOT NULL
retailer_name	VARCHAR(255)	Optional
retailer_email	VARCHAR(100)	Optional
contact_number	VARCHAR(15)	Optional
final_balance	DECIMAL(10,2)	NOT NULL

6. purchase_items:

Attribute	Data Type	Constraints
purchase_item_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
purchase_id	VARCHAR(36)	FOREIGN KEY → purchases(purchase_id) ON DELETE SET NULL
inventory_id	VARCHAR(36)	FOREIGN KEY → distributor_product_inventory(inventory_id) ON DELETE SET NULL
quantity	INT	NOT NULL, CHECK (quantity > 0)
price	DECIMAL(10,2)	NOT NULL, CHECK (price ≥ 0)

7. payments :

Attribute	Data Type	Constraints
payment_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
retailer_id	VARCHAR(36)	FOREIGN KEY → retailers(retailer_id) ON DELETE SET NULL
distributor_id	VARCHAR(36)	FOREIGN KEY → distributors(distributor_id) ON DELETE SET NULL
amount_given	DECIMAL(10,2)	NOT NULL, CHECK (amount_given ≥ 0)
final_balance	DECIMAL(10,2)	NOT NULL
payment_method	VARCHAR(50)	NOT NULL
payment_status	TEXT	NOT NULL
payment_date	DATE	NOT NULL
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP
retailer_name	VARCHAR(255)	NOT NULL
retailer_email	VARCHAR(100)	NOT NULL
contact_number	VARCHAR(15)	NOT NULL
address	TEXT	NOT NULL
distributor_name	VARCHAR(255)	NOT NULL

8. deliveries :

Attribute	Data Type	Constraints
delivery_id	VARCHAR(36)	PRIMARY KEY, DEFAULT (UUID())
purchase_id	VARCHAR(36)	NOT NULL, FOREIGN KEY → purchases(purchase_id) ON DELETE CASCADE
delivery_date	DATE	NOT NULL
status	VARCHAR(50)	NOT NULL
delivery_company	VARCHAR(100)	NOT NULL

FUNCTIONAL DEPENDENCIES AND PRIMARY KEY:

➤ Distributors :-

Functional Dependencies:

distributor_id → distributor_name, distributor_full_name, address, contact_number, email, bank_account_number, is_deleted, deleted_at, password

- Since , *distributor_id* is a unique identifier (e.g., UUID or manually generated unique ID) assigned to each distributor. This is the Primary Key.

➤ Retailers:-

Functional Dependencies:

retailer_id → retailer_name, retailer_full_name, address, contact_number, email, bank_account_number, opening_balance, final_balance, is_deleted, deleted_at, password

- Since *retailer_id* uniquely identifies each retailer. So This is the Primary Key.

➤ Products:-

Functional Dependencies:

product_id → product_name, company_name, base_price, description

- Since , *product_id* uniquely distinguishes each product, even with similar names. This is the Primary Key.

➤ Distributor_product_inventory :-

Functional Dependencies:

inventory_id → distributor_id, product_id, discount_percentage, final_price, stock_quantity, purchase_cost

- One distributor may sell the same product at different prices over time or maintain separate inventory batches. *inventory_id* ensures each such entry is uniquely tracked. so this is the Primary Key.

➤ **Purchases :-**

Functional Dependencies:

purchase_id → *retailer_id*, *distributor_id*, *total_amount*, *purchase_date*,
retailer_name, *retailer_email*, *contact_number*, *final_balance*

- Each transaction between a retailer and distributor is uniquely identified using *purchase_id*. A retailer may make multiple purchases from the same distributor *purchase_id* distinguishes them. so this is the Primary Key.

➤ **Purchase_items :**

Functional Dependencies:

purchase_item_id → *purchase_id*, *inventory_id*, *quantity*, *price*

- A single purchase (e.g., *purchase_id* = P1) may have multiple items (*inventory_id*), possibly even repeated with different quantities. *purchase_item_id* uniquely identifies each line item. A composite key (*purchase_id*, *inventory_id*) might cause issues with multiple entries for the same inventory. so *purchase_item_id* is the Primary Key.

➤ **Payments:**

Functional Dependencies:

payment_id → *retailer_id*, *distributor_id*, *amount_given*, *final_balance*,
payment_method, *payment_status*, *payment_date*, *created_at*, *retailer_name*,
retailer_email, *contact_number*, *address*, *distributor_name*

- One retailer can make multiple payments to a distributor over time. *payment_id* ensures each payment entry is uniquely identified and traceable. so this is the Primary Key.

➤ **Deliveries:**

Functional Dependencies:

delivery_id → *purchase_id*, *delivery_date*, *status*, *delivery_company*

- Each delivery may be tied to a single *purchase_id* but can occur in different batches or dates. *delivery_id* provides a unique record for tracking delivery history and issues. . so this is the Primary Key.

NORMAISATION:

1. distributors:

- **1NF:** All fields contain atomic values (no multivalued attributes like contact_number or address lists).
- **2NF:** All non-key attributes depend fully on the primary key distributor_id (no partial dependency).
- **3NF:** There are no transitive dependencies (e.g., email is not dependent on contact_number, etc.).
- **BCNF:** distributor_id is the only candidate key and determines all other fields — thus satisfies BCNF.

2. retailers:

- **1NF:** All attributes are atomic.
- **2NF:** Since there's only one attribute (retailer_id) as primary key, all non-key fields depend fully on it.
- **3NF:** No transitive dependencies (e.g., final_balance isn't derived from opening_balance; it is updated independently).
- **BCNF:** retailer_id is the only candidate key and determines all attributes.

3. products :

- **1NF:** All attribute values are atomic.
- **2NF:** Single-attribute primary key, so all non-key attributes depend fully on product_id.
- **3NF:** No derived/transitive attributes.
- **BCNF:** Only candidate key is product_id; thus satisfies BCNF.

4. distributor_product_inventory :

- **1NF:** All attributes are scalar and atomic.
- **2NF:** Every non-key attribute is fully dependent on the primary key (inventory_id).
- **3NF:** No transitive dependencies (e.g., final_price is not derived from stock_quantity, but discount is applied directly to base_price).
- **BCNF:** inventory_id is the only candidate key.

5. Purchases :

- **1NF:** Atomic fields (purchase_date, total_amount, etc.).
- **2NF:** All non-key attributes depend entirely on purchase_id.
- **3NF:** retailer_name, email, contact_number, etc. are denormalized intentionally — but not derived from other fields in this table (we assume historical snapshot values).
- **BCNF:** purchase_id is the only candidate key and all attributes depend on it.

6. purchase_items:

- **1NF:** No multivalued or nested fields.
- **2NF:** purchase_item_id is the PK and all other fields depend on it fully.
- **3NF:** No transitive dependency — price is stored per item and not computed from another column in the same table.
- **BCNF:** All functional dependencies have a superkey (purchase_item_id), so it satisfies BCNF.

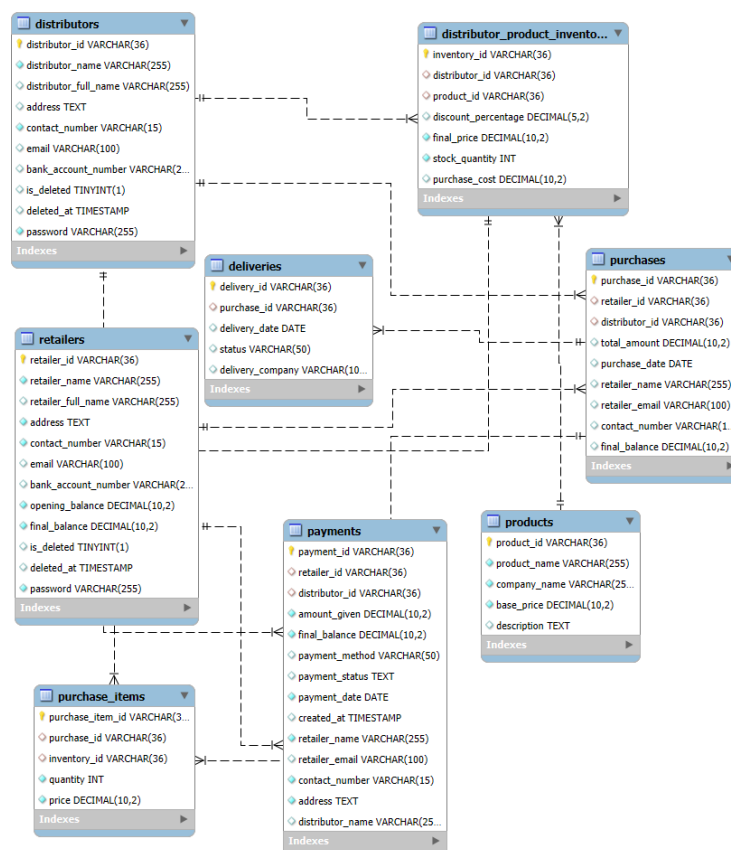
7. payments :

- **1NF:** Atomic attributes (email, address, amount_given, etc.)
- **2NF:** All attributes are fully dependent on the PK (payment_id)
- **3NF:** Though retailer_name and distributor_name are derivable from foreign tables, they are stored as point-in-time snapshots and not transitively dependent within this table.
- **BCNF:** payment_id is the only candidate key and determines all attributes.

8.deliveries:

- **1NF:** All fields contain atomic values
- **2NF:** All non-key attributes depend fully on delivery_id
- **3NF:** No attribute is transitively dependent
- **BCNF:** delivery_id is the only candidate key and determines all fields

RELATIONAL SCHEMA:



MYSQL CODES:

➤ Creating Tables:

CREATE DATABASE IF NOT EXISTS distributor_retailer_management_system;

USE distributor_retailer_management_system;

1.distributors:

```
CREATE TABLE distributors (  
  distributor_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),  
  distributor_name VARCHAR(255) NOT NULL,  
  distributor_full_name VARCHAR(255) NOT NULL,  
  address TEXT NOT NULL,  
  contact_number VARCHAR(10) NOT NULL UNIQUE,  
  email VARCHAR(100) NOT NULL UNIQUE,  
  bank_account_number VARCHAR(20) NOT NULL UNIQUE,  
  is_deleted BOOLEAN DEFAULT FALSE,  
  deleted_at TIMESTAMP NULL,  
  password VARCHAR(255) NOT NULL  
);
```

2.retailers:

```
CREATE TABLE retailers (  
  retailer_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),  
  retailer_name VARCHAR(255) NOT NULL,  
  retailer_full_name VARCHAR(255) NOT NULL,  
  address TEXT NOT NULL,  
  contact_number CHAR(10) NOT NULL UNIQUE,  
  email VARCHAR(100) NOT NULL UNIQUE,  
  bank_account_number VARCHAR(20) NOT NULL UNIQUE,  
  opening_balance DECIMAL(10, 2) NOT NULL CHECK (opening_balance >= 0),  
  final_balance DECIMAL(10, 2) NOT NULL ,  
  is deleted BOOLEAN DEFAULT FALSE,  
  deleted_at TIMESTAMP NULL,  
  password VARCHAR(255) NOT NULL  
);
```

3.products:

```
CREATE TABLE products (  
  product_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),  
  product_name VARCHAR(255) NOT NULL,  
  company_name VARCHAR(255) NOT NULL,  
  base_price DECIMAL(10,2) NOT NULL CHECK (base_price >= 0),  
  description TEXT NOT NULL  
);
```

4. distributor_product_inventory :

```
CREATE TABLE distributor_product_inventory (  
  inventory_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),  
  distributor_id VARCHAR(36) NOT NULL,  
  product_id VARCHAR(36) NOT NULL,  
  discount_percentage DECIMAL(5,2) DEFAULT 0.00 CHECK (discount_percentage >= 0 AND discount_percentage <= 100),  
  final_price DECIMAL(10,2) NOT NULL CHECK (final_price >= 0),  
  stock_quantity INT NOT NULL CHECK (stock_quantity >= 0),  
  purchase_cost DECIMAL(10,2) NOT NULL CHECK (purchase_cost >= 0),  
  
  FOREIGN KEY (distributor_id) REFERENCES distributors(distributor_id) ON DELETE CASCADE,  
  FOREIGN KEY (product_id) REFERENCES products(product_id) ON DELETE CASCADE  
);
```

5. purchases:

```
CREATE TABLE purchases (  
  purchase_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),  
  retailer_id VARCHAR(36),  
  distributor_id VARCHAR(36),  
  total_amount DECIMAL(10, 2) NOT NULL CHECK (total_amount >= 0),  
  purchase_date DATE NOT NULL,  
  retailer_name VARCHAR(255),  
  retailer_email VARCHAR(100),  
  contact_number VARCHAR(15),  
  final_balance DECIMAL(10, 2) NOT NULL,  
  
  FOREIGN KEY (retailer_id) REFERENCES retailers(retailer_id) ON DELETE SET NULL,  
  FOREIGN KEY (distributor_id) REFERENCES distributors(distributor_id) ON DELETE SET NULL  
);
```

6. purchase_items :

```
CREATE TABLE purchase_items (  
  purchase_item_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),  
  purchase_id VARCHAR(36),  
  inventory_id VARCHAR(36),  
  quantity INT NOT NULL CHECK (quantity > 0),  
  price DECIMAL(10,2) NOT NULL CHECK (price >= 0),  
  
  FOREIGN KEY (purchase_id) REFERENCES purchases(purchase_id) ON DELETE SET NULL,  
  FOREIGN KEY (inventory_id) REFERENCES distributor_product_inventory(inventory_id) ON DELETE SET NULL  
);
```

7. payments :

```
CREATE TABLE payments (
    payment_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),
    retailer_id VARCHAR(36),
    distributor_id VARCHAR(36),
    amount_given DECIMAL(10, 2) NOT NULL CHECK (amount_given >= 0),
    final_balance DECIMAL(10, 2) NOT NULL ,
    payment_method VARCHAR(50) NOT NULL,
    payment_status TEXT NOT NULL,
    payment_date DATE NOT NULL,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    retailer_name VARCHAR(255) NOT NULL,
    retailer_email VARCHAR(100) NOT NULL,
    contact_number VARCHAR(15) NOT NULL,
    address TEXT NOT NULL,
    distributor_name VARCHAR(255) NOT NULL,

    FOREIGN KEY (retailer_id) REFERENCES retailers(retailer_id) ON DELETE SET NULL,
    FOREIGN KEY (distributor_id) REFERENCES distributors(distributor_id) ON DELETE SET NULL
);
```

8.deliveries :

```
CREATE TABLE deliveries (
  delivery_id VARCHAR(36) PRIMARY KEY DEFAULT (UUID()),
  purchase_id VARCHAR(36) NOT NULL,
  delivery_date DATE NOT NULL,
  status VARCHAR(50) NOT NULL,
  delivery_company VARCHAR(100) NOT NULL,

  FOREIGN KEY (purchase_id) REFERENCES purchases(purchase_id) ON DELETE CASCADE
);
```

➤ **INSERTING DATA:**

1) Distributors :

```
INSERT INTO distributors (
    distributor_id, distributor_name, distributor_full_name,
    address, contact_number, email,
    bank_account_number, password
) VALUES
(
    'd1a2b3c4', 'Global Beverage Distributors', 'John Smith',
    '123 Trade Center, Mumbai, India', '9123456780', 'globalbeverage@gmail.com',
    '12345678901234567890', '5f4dcc3b5'
);
```

[illegible]

2) Retailers:

```
INSERT INTO retailers (
  retailer_id, retailer_name, retailer_full_name,
  address, contact_number, email,
  bank_account_number, opening_balance, final_balance, password
) VALUES
(
  'r1a2b3c4',
  'City Drinks Corner',
  'Vikram Singh',
  '101 Main Road, Mumbai',
  '9123456701',
  'citydrinks@gmail.com',
  '67890123456789012345',
  4500.00,
  4500.00,
  'a1b2c3d4e5'
);
```

retailer_id	retailer_name	retailer_full_name	address	contact_number	email	bank_account_number	opening_balance	final_balance	is_deleted	deleted_at	password
r0b4c5d6	Tech Gadgets	Rohan Desai	1010 Electronics Plaza, Hyderabad	9145678910	techgad@gmail.com	56789012345678901234	5000.00	5000.00	0	NULL	j0k1l2m3n4
r0f4g5h6	Quick Stop	Pooja Reddy	2020 Express Road, Chennai	9123456720	quickstop@gmail.com	56789012345678901234	3300.00	3300.00	0	NULL	t0u1v2w3x4
r1a2b3c4	City Drinks Corner	Vikram Singh	101 Main Road, Mumbai	9123456701	citydrinks@gmail.com	67890123456789012345	4500.00	4500.00	0	NULL	a1b2c3d4e5
r1e6f7g8	Smart Home	Ankit Joshi	1111 Digital Lane, Pune	9123456711	smarthome@gmail.com	67890123456789012345	4800.00	4800.00	0	NULL	k1l2m3n4o5
r2d3e4f5	Thirst Quencher	Anjali Mehta	202 Market Lane, Mumbai	9123456702	thirstq@gmail.com	78901234567890123456	3800.00	3800.00	0	NULL	b2c3d4e5f6
r2h8i9j0	Power Electronics	Deepak Sharma	1212 Circuit Road, Ahmedabad	9112345612	power@gmail.com	78901234567890123456	4100.00	4100.00	0	NULL	l2m3n4o5p6
r3g4h5i6	Bubbles Beverages	Rahul Verma	303 Trade Street, Delhi	9112345603	bubbles@gmail.com	89012345678901234567	4200.00	4200.00	0	NULL	c3d4e5f6g7
r3k9l0m1	Health Plus	Dr. Naresh Gupta	1313 Medical Square, Chennai	9156789013	healthplus@gmail.com	89012345678901234567	4400.00	4400.00	0	NULL	m3n4o5p6q7
r4j5k6l7	Fresh N Fast	Sanjay Kapoor	404 Food Court, Delhi	9112345604	freshnfast@gmail.com	90123456789012345678	3600.00	3600.00	0	NULL	d4e5f6g7h8
r4n0o1p2	Life Care	Dr. Sunita Rao	1414 Wellness Center, Kolkata	9134567814	lifecare@gmail.com	90123456789012345678	3700.00	3700.00	0	NULL	n4o5p6q7r8
r5m6n7o8	Daily Groceries	Meena Choudhary	505 Shopping Complex, Bangalore	9134567805	dailygro@gmail.com	01234567890123456789	4900.00	4900.00	0	NULL	e5f6g7h8i9
r5q2r3s4	Medi Quick	Dr. Vikas Malhotra	1515 Hospital Road, Delhi	9112345615	mediquick@gmail.com	01234567890123456789	4600.00	4600.00	0	NULL	o5p6q7r8s9
r6p7q8r9	Organic Choice	Arun Reddy	606 Green Avenue, Hyderabad	9145678906	organic@gmail.com	12345678901234567890	3100.00	3100.00	0	NULL	f6g7h8i9j0
r6t4u5v6	Corner Store	Manoj Tiwari	1616 Local Market, Mumbai	9123456716	corner@gmail.com	12345678901234567890	3200.00	3200.00	0	NULL	p6q7r8s9t0
r7s8t9u0	Beauty Haven	Priyanka Malhotra	707 Fashion Street, Bangalore	9134567807	beautyhaven@gmail.c...	23456789012345678901	4700.00	4700.00	0	NULL	g7h8i9j0k1
r7w6x7y8	24x7 Mart	Sunil Nair	1717 Night Road, Bangalore	9134567817	24x7mart@gmail.com	23456789012345678901	3500.00	3500.00	0	NULL	q7r8s9t0u1
r8v1w2x3	Glamour Spot	Ritu Singh	808 Style Road, Chennai	9156789008	glamour@gmail.com	34567890123456789012	3900.00	3900.00	0	NULL	h8i9j0k1l2
r8z8a9b0	Super Save	Anita Deshpande	1818 Discount Street, Pune	9145678918	supersave@gmail.com	34567890123456789012	4000.00	4000.00	0	NULL	r8s9t0u1v2
r9c1d2e3	Neighborhood Shop	Rajesh Iyer	1919 Community Lane, Hyderabad	9156789019	neighbor@gmail.com	45678901234567890123	2900.00	2900.00	0	NULL	s9t0u1v2w3
r9y2z3a4	Natural Beauty	Sneha Iyer	909 Wellness Circle, Pune	9123456709	natural@gmail.com	45678901234567890123	4300.00	4300.00	0	NULL	i9j0k1l2m3
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

3) Products :

```
INSERT INTO products (
  product_id, product_name, company_name,
  base_price, description
) VALUES
(
  'p1a2b3c4',
  'Cola Drink 1L',
  'Cola Company',
  45.00,
  'Refreshing cola drink 1 liter bottle'
);
```

product_id	product_name	company_name	base_price	description
p0b4c5d6	Wireless Noise Cancelling Headphones	Sound Tech	12500.00	Premium over-ear headphones
p1a2b3c4	Cola Drink 1L	Cola Company	45.00	Refreshing cola drink 1 liter bottle
p1e6f7g8	Smart Watch Pro	Tech Wear	8500.00	Health monitoring and notifications
p2d3e4f5	Premium Orange Juice 500ml	Fruit King	120.00	Cold-pressed organic orange juice
p2h8i9j0	Portable Projector	View Master	6800.00	Full HD portable projector
p3g4h5i6	Sparkling Water 750ml	Aqua Pure	65.00	Naturally carbonated mineral water
p3k9l0m1	Multivitamin Tablets 60s	MediCare	350.00	Daily essential vitamins
p4j5k6l7	Organic Basmati Rice 5kg	India Rice	850.00	Certified organic basmati rice
p4n0o1p2	Organic Herbal Tea 30bags	Nature's Cure	280.00	Stress relief and relaxation
p5m6n7o8	Truffle Olive Oil 250ml	Gourmet Foods	2200.00	Extra virgin olive oil with truffle
p5q2r3s4	First Aid Kit	Safety First	1200.00	Comprehensive emergency kit
p6p7q8r9	Artisanal Chocolate 200g	Cocoa Delight	450.00	Handcrafted dark chocolate
p7s8t9u0	Anti-Aging Cream 50ml	Glam Beauty	1800.00	With retinol and hyaluronic acid
p8v1w2x3	Luxury Perfume 50ml	Elegance	3200.00	Signature fragrance for women
p9y2z3a4	Men's Grooming Kit	Gentleman	950.00	Complete shaving and skincare set
NULL	NULL	NULL	NULL	NULL

4) distributor_product_inventory :

```
INSERT INTO distributor_product_inventory (  
    inventory_id, distributor_id, product_id,  
    discount_percentage, final_price, stock_quantity, purchase_cost  
) VALUES  
(  
    'i1a2b3c4',  
    'd1a2b3c4',  
    'p1a2b3c4',  
    10.00,  
    40.50,  
    200,  
    32.40  
);
```

inventory_id	distributor_id	product_id	discount_percentage	final_price	stock_quantity	purchase_cost
i0b4c5d6	d4k5l6m7	p0b4c5d6	5.00	11875.00	30	10687.50
i0f4g5h6	d5n6o7p8	p2d3e4f5	15.00	102.00	100	81.60
i1a2b3c4	d1a2b3c4	p1a2b3c4	10.00	40.50	200	32.40
i1e6f7g8	d4k5l6m7	p1e6f7g8	8.00	7820.00	40	6647.00
i2d3e4f5	d1a2b3c4	p2d3e4f5	15.00	102.00	150	81.60
i2h8i9j0	d4k5l6m7	p2h8i9j0	12.00	5984.00	25	4787.20
i3g4h5i6	d1a2b3c4	p3g4h5i6	5.00	61.75	180	49.40
i3k9l0m1	d5n6o7p8	p3k9l0m1	5.00	332.50	200	265.00
i4j5k6l7	d2e3f4g5	p4j5k6l7	8.00	782.00	100	664.70
i4n0o1p2	d5n6o7p8	p4n0o1p2	10.00	252.00	150	214.20
i5m6n7o8	d2e3f4g5	p5m6n7o8	12.00	1936.00	50	1548.80
i5q2r3s4	d5n6o7p8	p5q2r3s4	15.00	1020.00	80	816.00
i6p7q8r9	d2e3f4g5	p6p7q8r9	10.00	405.00	120	344.25
i6t4u5v6	d1a2b3c4	p4j5k6l7	5.00	807.50	70	686.38
i7s8t9u0	d3h4i5j6	p7s8t9u0	15.00	1530.00	80	1224.00
i7w6x7y8	d2e3f4g5	p0b4c5d6	10.00	11250.00	15	9562.50
i8v1w2x3	d3h4i5j6	p8v1w2x3	20.00	2560.00	60	2048.00
i8z8a9b0	d3h4i5j6	p3k9l0m1	8.00	322.00	120	273.70
i9c1d2e3	d4k5l6m7	p7s8t9u0	12.00	1584.00	50	1346.40
i9y2z3a4	d3h4i5j6	p9y2z3a4	10.00	855.00	100	684.00
NULL	NULL	NULL	NULL	NULL	NULL	NULL

5) purchases :

```
INSERT INTO purchases (  
    purchase_id, retailer_id, distributor_id,  
    total_amount, purchase_date,  
    retailer_name, retailer_email, contact_number,  
    final_balance  
) VALUES  
(  
    'pu1a2b3c4',  
    'r1a2b3c4',  
    'd1a2b3c4',  
    2447.50,  
    '2025-05-05',  
    'City Drinks Corner',  
    'citydrinks@gmail.com',  
    '9123456701',  
    2052.50  
);
```


purchase_id	retailer_id	distributor_id	total_amount	purchase_date	retailer_name	retailer_email	contact_number	final_balance
pu0b4c5d6	r7s8t9u0	d3h4i5j6	6120.00	2025-05-12	Beauty Haven	beautyhaven@gmail.com	9134567807	-1420.00
pu0d2e3f4	r4n0o1p2	d5n6o7p8	1008.00	2025-05-21	Life Care	lifecare@gmail.com	9134567814	2692.00
pu1a2b3c4	r1a2b3c4	d1a2b3c4	2447.50	2025-05-05	City Drinks Corner	citydrinks@gmail.com	9123456701	2052.50
pu1e3f4g5	r5q2r3s4	d5n6o7p8	2040.00	2025-05-26	Medi Quick	mediquick@gmail.com	9112345615	2560.00
pu1e6f7g8	r7s8t9u0	d3h4i5j6	5120.00	2025-05-22	Beauty Haven	beautyhaven@gmail.com	9134567807	-6540.00
pu2d3e4f5	r1a2b3c4	d1a2b3c4	1836.00	2025-05-15	City Drinks Corner	citydrinks@gmail.com	9123456701	216.50
pu2f4g5h6	r6t4u5v6	d1a2b3c4	1215.00	2025-05-27	Corner Store	corner@gmail.com	9123456716	1985.00
pu2h8i9j0	r8v1w2x3	d3h4i5j6	3420.00	2025-05-14	Glamour Spot	glamour@gmail.com	9156789008	480.00
pu3g4h5i6	r2d3e4f5	d1a2b3c4	2432.25	2025-05-10	Thirst Quencher	thirstq@gmail.com	9123456702	1367.75
pu3g5h6i7	r7w6x7y8	d2e3f4g5	1564.00	2025-05-28	24x7 Mart	24x7mart@gmail.com	9134567817	1936.00
pu3k9l0m1	r9y2z3a4	d3h4i5j6	2565.00	2025-05-24	Natural Beauty	natural@gmail.com	9123456709	1735.00
pu4h6i7j8	r8z8a9b0	d3h4i5j6	4590.00	2025-05-29	Super Save	supersave@gmail.com	9145678918	-590.00
pu4j5k6l7	r2d3e4f5	d1a2b3c4	1836.00	2025-05-20	Thirst Quencher	thirstq@gmail.com	9123456702	-468.25
pu4n0o1p2	r0b4c5d6	d4k5l6m7	23750.00	2025-05-07	Tech Gadgets	techgad@gmail.com	9145678910	-18750.00
pu5i7j8k9	r9c1d2e3	d4k5l6m7	3168.00	2025-05-30	Neighborhood Shop	neighbor@gmail.com	9156789019	-268.00
pu5m6n7o8	r3g4h5i6	d1a2b3c4	1235.00	2025-05-11	Bubbles Beverages	bubbles@gmail.com	9112345603	2965.00
pu5q2r3s4	r0b4c5d6	d4k5l6m7	1564.00	2025-05-17	Tech Gadgets	techgad@gmail.com	9145678910	-34390.00
pu6j8k9l0	r0f4g5h6	d5n6o7p8	816.00	2025-05-31	Quick Stop	quickstop@gmail.com	9123456720	2484.00
pu6p7q8r9	r4j5k6l7	d2e3f4g5	3910.00	2025-05-08	Fresh N Fast	freshnfast@gmail.com	9112345604	-310.00
pu6t4u5v6	r1e6f7g8	d4k5l6m7	23808.00	2025-05-16	Smart Home	smarthome@gmail.com	9123456711	-19008.00
pu7s8t9u0	r4j5k6l7	d2e3f4g5	2430.00	2025-05-18	Fresh N Fast	freshnfast@gmail.com	9112345604	-2740.00
pu7w6x7y8	r2h8i9j0	d4k5l6m7	11968.00	2025-05-25	Power Electronics	power@gmail.com	9112345612	-7868.00
pu8v1w2x3	r5m6n7o8	d2e3f4g5	3872.00	2025-05-13	Daily Groceries	dailygro@gmail.com	9134567805	1028.00
pu8z8a9b0	r3k9l0m1	d5n6o7p8	1330.00	2025-05-09	Health Plus	healthplus@gmail.com	9156789013	3070.00

6) purchase_items:

```
INSERT INTO purchase_items (purchase_item_id, purchase_id, inventory_id, quantity, price) VALUES ('pi1a2b3c4', 'pu1a2b3c4', 'i1a2b3c4', 20, 40.50);
```

purchase_item_id	purchase_id	inventory_id	quantity	price
pi0b4c5d6	pu5m6n7o8	i2d3e4f5	5	102.00
pi0l4m5n6	pu4n0o1p2	i0b4c5d6	2	11875.00
pi0v4w5x6	pu3g5h6i7	i4j5k6l7	2	782.00
pi1a2b3c4	pu1a2b3c4	i1a2b3c4	20	40.50
pi1c5d6e7	pu5m6n7o8	i3g4h5i6	5	61.75
pi1m5n6o7	pu5q2r3s4	i1e6f7g8	2	7820.00
pi1w5x6y7	pu4h6i7j8	i7s8t9u0	3	1530.00
pi2d3e4f5	pu1a2b3c4	i2d3e4f5	10	102.00
pi2d6e7f8	pu6p7q8r9	i4j5k6l7	5	782.00
pi2n6o7p8	pu6t4u5v6	i0b4c5d6	2	11875.00
pi2x6y7z8	pu5i7j8k9	i9c1d2e3	2	1584.00
pi3e7f8g9	pu7s8t9u0	i6p7q8r9	6	405.00
pi3g4h5i6	pu1a2b3c4	i3g4h5i6	10	61.75
pi3o7p8q9	pu6t4u5v6	i2h8i9j0	1	5984.00
pi3y7z8a9	pu6j8k9l0	i5q2r3s4	1	1020.00
pi4f8g9h0	pu8v1w2x3	i5m6n7o8	2	1936.00
pi4j5k6l7	pu2d3e4f5	i2d3e4f5	18	102.00
pi4p8q9r0	pu7w6x7y8	i2h8i9j0	2	5984.00
pi5g9h0i1	pu9y2z3a4	i6p7q8r9	4	405.00
pi5m6n7o8	pu3g4h5i6	i1a2b3c4	12	40.50
pi5q9r0s1	pu8z8a9b0	i3k9l0m1	4	332.50
pi6h0i1j2	pu0b4c5d6	i7s8t9u0	4	1530.00
pi6p7q8r9	pu3g4h5i6	i2d3e4f5	10	102.00
pi6r0s1t2	pu9c1d2e3	i5q2r3s4	2	1020.00

7) payments :

```
INSERT INTO payments (
  payment_id, retailer_id, distributor_id,
  amount_given, final_balance,
  payment_method, payment_status, payment_date, created_at,
  retailer_name, retailer_email, contact_number, address,
  distributor_name
) VALUES
(
  'py1a2b3c4',
  'r1a2b3c4',
  'd1a2b3c4',
  1000.00,
  1216.50,
  'Bank Transfer',
  'Completed',
  '2025-06-01',
  NOW(),
  'City Drinks Corner',
  'citydrinks@gmail.com',
  '9123456701',
  '101 Main Road, Mumbai',
  'Global Beverage Distributors'
);
```

payment_id	retailer_id	distributor_id	amount_given	final_balance	payment_method	payment_status	payment_date	created_at	retailer_name	retailer_email	contact_number
py0b4c5d6	r0b4c5d6	d4k5l6m7	35000.00	610.00	Bank Transfer	Pending	2025-06-10	2025-07-08 12:47:52	Tech Gadgets	techgad@gmail.com	9145678910
py0d2e3f4	r0f4g5h6	d5n6o7p8	1000.00	3484.00	UPI	Completed	2025-06-20	2025-07-08 12:47:52	Quick Stop	quickstop@gmail.com	9123456720
py1a2b3c4	r1a2b3c4	d1a2b3c4	1000.00	1216.50	Bank Transfer	Completed	2025-06-01	2025-07-08 12:47:52	City Drinks Corner	citydrinks@gmail.com	9123456701
py1e6f7g8	r1e6f7g8	d4k5l6m7	20000.00	992.00	Bank Transfer	Completed	2025-06-11	2025-07-08 12:47:52	Smart Home	smarthome@gmail.com	9123456711
py2d3e4f5	r2d3e4f5	d1a2b3c4	1500.00	1031.75	UPI	Completed	2025-06-02	2025-07-08 12:47:52	Thirst Quencher	thirstq@gmail.com	9123456702
py2h8i9j0	r2h8i9j0	d4k5l6m7	8000.00	132.00	UPI	Completed	2025-06-12	2025-07-08 12:47:52	Power Electronics	power@gmail.com	9112345612
py3g4h5i6	r3g4h5i6	d1a2b3c4	500.00	3465.00	Cash	Completed	2025-06-03	2025-07-08 12:47:52	Bubbles Beverages	bubbles@gmail.com	9112345603
py3k9l0m1	r3k9l0m1	d5n6o7p8	500.00	1530.00	Cash	Completed	2025-06-13	2025-07-08 12:47:52	Health Plus	healthplus@gmail.com	9156789013
py4j5k6l7	r4j5k6l7	d2e3f4g5	3000.00	260.00	Bank Transfer	Completed	2025-06-04	2025-07-08 12:47:52	Fresh N Fast	freshnfast@gmail.com	9112345604
py4n0o1p2	r4n0o1p2	d5n6o7p8	1000.00	3692.00	UPI	Completed	2025-06-14	2025-07-08 12:47:52	Life Care	lifecare@gmail.com	9134567814
py5m6n7o8	r5m6n7o8	d2e3f4g5	500.00	1528.00	UPI	Completed	2025-06-05	2025-07-08 12:47:52	Daily Groceries	dailygro@gmail.com	9134567805
py5q2r3s4	r5q2r3s4	d5n6o7p8	1500.00	4060.00	Bank Transfer	Completed	2025-06-15	2025-07-08 12:47:52	Medi Quick	mediquick@gmail.com	9112345615
py6p7q8r9	r6p7q8r9	d2e3f4g5	1000.00	2480.00	Cash	Completed	2025-06-06	2025-07-08 12:47:52	Organic Choice	organic@gmail.com	9145678906
py6t4u5v6	r6t4u5v6	d1a2b3c4	500.00	2485.00	Cash	Completed	2025-06-16	2025-07-08 12:47:52	Corner Store	corner@gmail.com	9123456716
py7s8t9u0	r7s8t9u0	d3h4i5j6	7000.00	460.00	Bank Transfer	Completed	2025-06-07	2025-07-08 12:47:52	Beauty Haven	beautyhaven@gmail.c...	9134567807
py7w6x7y8	r7w6x7y8	d2e3f4g5	1000.00	2936.00	UPI	Completed	2025-06-17	2025-07-08 12:47:52	24x7 Mart	24x7mart@gmail.com	9134567817
py8v1w2x3	r8v1w2x3	d3h4i5j6	1000.00	1480.00	UPI	Completed	2025-06-08	2025-07-08 12:47:52	Glamour Spot	glamour@gmail.com	9156789008
py8z8a9b0	r8z8a9b0	d3h4i5j6	1000.00	410.00	Bank Transfer	Completed	2025-06-18	2025-07-08 12:47:52	Super Save	supersave@gmail.com	9145678918
py9c1d2e3	r9c1d2e3	d4k5l6m7	500.00	232.00	Cash	Completed	2025-06-19	2025-07-08 12:47:52	Neighborhood Shop	neighbor@gmail.com	9156789019
py9y2z3a4	r9y2z3a4	d3h4i5j6	800.00	2535.00	Cash	Completed	2025-06-09	2025-07-08 12:47:52	Natural Beauty	natural@gmail.com	9123456709

8) Deliveries :

```
INSERT INTO deliveries (
  delivery_id, purchase_id,
  delivery_date, status,
  delivery_company
) VALUES
(
  'd1a2b3c4',
  'pu1a2b3c4',
  '2025-05-06',
  'Delivered',
  'Speedy Cargo'
);
```

delivery_id	purchase_id	delivery_date	status	delivery_company
d10b4c5d6	pu0b4c5d6	2025-05-13	Delivered	Luxury Goods Transport
d10d2e3f4	pu0d2e3f4	2025-05-22	Processing	Kolkata Medical Transport
d1a2b3c4	pu1a2b3c4	2025-05-06	Delivered	Speedy Cargo
d1e3f4g5	pu1e3f4g5	2025-05-27	Delivered	Delhi Pharma Couriers
d1e6f7g8	pu1e6f7g8	2025-05-23	Delivered	Style Couriers
d1d2e3f4g5	pu2d3e4f5	2025-05-16	Delivered	Quick Logistics
d1d2f4g5h6	pu2f4g5h6	2025-05-28	Delivered	Mumbai Local Delivery
d1z8h9i0	pu2h8i9j0	2025-05-15	In Transit	Chennai Cargo
d1g3h4i5j6	pu3g4h5i6	2025-05-11	In Transit	Bharat Transport
d1g3h5i6j7	pu3g5h6i7	2025-05-29	In Transit	Bangalore Goods
d1k9l0m1	pu3k9l0m1	2025-05-25	Delivered	Pune Express
d1h6i7j8	pu4h6i7j8	2025-05-30	Delivered	Pune Fast Movers
d1j5k6l7	pu4j5k6l7	2025-05-21	Delivered	Speedy Cargo
d1n0o1p2	pu4n0o1p2	2025-05-08	Delivered	Tech Transport
d1i7j8k9	pu5i7j8k9	2025-05-31	Processing	Hyderabad Local Cargo
d1m6n7o8	pu5m6n7o8	2025-05-12	Delivered	Mumbai Couriers
d1s2r3s4	pu5q2r3s4	2025-05-18	Processing	Secure Electronics Logistics
d1j6k8l90	pu6j8k9l0	2025-06-01	Delivered	Chennai Quick Delivery
d1p6q7r89	pu6p7q8r9	2025-05-09	Delivered	Delhi Goods Carrier
d1t4u5v6	pu6t4u5v6	2025-05-17	Delivered	Pune Tech Movers
d1s8t9u0	pu7s8t9u0	2025-05-19	In Transit	Food Express
d1w6x7y8	pu7w6x7y8	2025-05-26	In Transit	Ahmedabad Cargo
d1v1w2x3	pu8v1w2x3	2025-05-14	Delivered	Bangalore Logistics
d1z8a9b0	pu8z8a9b0	2025-05-10	Delivered	Medi Express

➤ **UPDATE OPERATIONS :**

1. Update the stock quantity after purchase :

```
-- Beverage Inventory Updates (Distributor: d1a2b3c4)
-- 42 Cola Drinks sold (20 + 12 + 10)
UPDATE distributor_product_inventory
SET stock_quantity = stock_quantity - 42
WHERE inventory_id = 'i1a2b3c4';
```

inventory_id	distributor_id	product_id	discount_percentage	final_price	stock_quantity	purchase_cost
i0b4c5d6	d4k5l6m7	p0b4c5d6	5.00	11875.00	26	10687.50
i0f4g5h6	d5n6o7p8	p2d3e4f5	15.00	102.00	100	81.60
i1a2b3c4	d1a2b3c4	p1a2b3c4	10.00	40.50	158	32.40
i1e6f7g8	d4k5l6m7	p1e6f7g8	8.00	7820.00	38	6647.00
i2d3e4f5	d1a2b3c4	p2d3e4f5	15.00	102.00	107	81.60
i2h8i9j0	d4k5l6m7	p2h8i9j0	12.00	5984.00	22	4787.20
i3g4h5i6	d1a2b3c4	p3g4h5i6	5.00	61.75	155	49.40
i3k9l0m1	d5n6o7p8	p3k9l0m1	5.00	332.50	196	265.00
i4j5k6l7	d2e3f4g5	p4j5k6l7	8.00	782.00	93	664.70
i4n0o1p2	d5n6o7p8	p4n0o1p2	10.00	252.00	146	214.20
i5m6n7o8	d2e3f4g5	p5m6n7o8	12.00	1936.00	48	1548.80
i5q2r3s4	d5n6o7p8	p5q2r3s4	15.00	1020.00	75	816.00
i6p7q8r9	d2e3f4g5	p6p7q8r9	10.00	405.00	107	344.25
i6t4u5v6	d1a2b3c4	p4j5k6l7	5.00	807.50	68	686.38
i7s8t9u0	d3h4i5j6	p7s8t9u0	15.00	1530.00	73	1224.00
i7w6x7y8	d2e3f4g5	p0b4c5d6	10.00	11250.00	15	9562.50
i8v1w2x3	d3h4i5j6	p8v1w2x3	20.00	2560.00	58	2048.00
i8z8a9b0	d3h4i5j6	p3k9l0m1	8.00	322.00	120	273.70
i9c1d2e3	d4k5l6m7	p7s8t9u0	12.00	1584.00	48	1346.40
i9y2z3a4	d3h4i5j6	p9y2z3a4	10.00	855.00	93	684.00
NULL	NULL	NULL	NULL	NULL	NULL	NULL

2. Update Final Balance of Retailers after Payments:

```
UPDATE retailers r
JOIN payments p ON r.retailer_id = p.retailer_id
SET r.final_balance = p.final_balance
WHERE r.retailer_id IN (
    SELECT retailer_id FROM payments
);
```

retailer_id	retailer_name	retailer_full_name	address	contact_number	email	bank_account_number	opening_balance	final_balance	is_deleted	deleted_at	password
r0b4c5d6	Tech Gadgets	Rohan Desai	1010 Electronics Plaza, Hyderabad	9145678910	techgad@gmail.com	56789012345678901234	5000.00	610.00	0	<input type="checkbox"/>	j0k1v2m3n4
r0f4g5h6	Quick Drinks	Pooja Reddy	2020 Express Road, Chennai	9123456720	quickstop@gmail.com	56789012345678901234	3300.00	3484.00	0	<input type="checkbox"/>	t0u1v2w3x4
r1a2b3c4	City Stop	Vikram Singh	101 Main Road, Mumbai	9123456701	citydrinks@gmail.com	67890123456789012345	4500.00	1216.50	0	<input type="checkbox"/>	a1b2c3d4e5
r1e6f7g8	Smart Home	Ankit Joshi	1111 Digital Lane, Pune	9123456711	smarthome@gmail.com	67890123456789012345	4800.00	992.00	0	<input type="checkbox"/>	k1l2m3n4o5
r2d3e4f5	Thirst Quencher	Anjali Mehta	202 Market Lane, Mumbai	9123456702	thirstq@gmail.com	78901234567890123456	3800.00	1031.75	0	<input type="checkbox"/>	d2e3c4d5e6f
r2h8i9j0	Power Electronics	Deepak Sharma	1212 Circuit Road, Ahmedabad	9112345612	power@gmail.com	78901234567890123456	4100.00	132.00	0	<input type="checkbox"/>	l2m3n4o5p6
r3g4h5i6	Bubbles Beverages	Rahul Verma	303 Trade Street, Delhi	9112345603	bubbles@gmail.com	89012345678901234567	4200.00	3465.00	0	<input type="checkbox"/>	c3d4e5f6g7
r3k9l0m1	Health Plus	Dr. Naresh Gupta	1313 Medical Square, Chennai	9156789013	healthplus@gmail.com	89012345678901234567	4400.00	1530.00	0	<input type="checkbox"/>	m3n4o5p6q7
r4j5k6l7	Fresh N Fast	Sanjay Kapoor	404 Food Court, Delhi	9112345604	freshnfast@gmail.com	90123456789012345678	3600.00	260.00	0	<input type="checkbox"/>	d4e5f6g7h8
r4n0o1p2	Life Care	Dr. Sunita Rao	1414 Wellness Center, Kolkata	9134567814	lifecare@gmail.com	90123456789012345678	3700.00	3692.00	0	<input type="checkbox"/>	n4o5p6q7r8
r5m6n7o8	Daily Groceries	Meena Choudhary	505 Shopping Complex, Bangalore	9134567805	dailygro@gmail.com	01234567890123456789	4900.00	1528.00	0	<input type="checkbox"/>	e5f6g7h8i9
r5q2r3s4	Medi Quick	Dr. Vikas Malhotra	1515 Hospital Road, Delhi	9112345615	mediquick@gmail.com	01234567890123456789	4600.00	4060.00	0	<input type="checkbox"/>	o5p6q7r8s9
r6p7q8r9	Organic Choice	Arun Reddy	606 Green Avenue, Hyderabad	9145678906	organic@gmail.com	12345678901234567890	3100.00	2480.00	0	<input type="checkbox"/>	f6g7h8i9j0
r6t4u5v6	Corner Store	Manoj Tiwari	1616 Local Market, Mumbai	9123456716	corner@gmail.com	12345678901234567890	3200.00	2485.00	0	<input type="checkbox"/>	p6q7r8s9t0
r7s8t9u0	Beauty Haven	Priyanka Malhotra	707 Fashion Street, Bangalore	9134567807	beautyhaven@gmail....	23456789012345678901	4700.00	460.00	0	<input type="checkbox"/>	j7k8l9m0n1
r7w6x7y8	24x7 Mart	Sunil Nair	1717 Night Road, Bangalore	9134567817	24x7mart@gmail.com	23456789012345678901	3500.00	2936.00	0	<input type="checkbox"/>	q7r8s9t0u1
r8v1w2x3	Glamour Spot	Ritu Singh	808 Style Road, Chennai	9156789008	glamour@gmail.com	34567890123456789012	3900.00	1480.00	0	<input type="checkbox"/>	h8i9j0k1l2
r8z8a9b0	Super Save	Anita Deshpande	1818 Discount Street, Pune	9145678918	supersave@gmail.com	34567890123456789012	4000.00	410.00	0	<input type="checkbox"/>	r8s9t0u1v2
r9c1d2e3	Neighborhood Shop	Rajesh Iyer	1919 Community Lane, Hyderabad	9156789019	neighbor@gmail.com	45678901234567890123	2900.00	232.00	0	<input type="checkbox"/>	s9t0u1v2w3
r9y2z3a4	Natural Beauty	Sneha Iyer	909 Wellness Circle, Pune	9123456709	natural@gmail.com	45678901234567890123	4300.00	2535.00	0	<input type="checkbox"/>	i9j0k1l2m3

➤ SQL QUERIES:

1) Total Purchase Amount per Retailer :

```
SELECT
  r.retailer_name,
  SUM(p.total_amount) AS total_purchased
FROM purchases p
JOIN retailers r ON p.retailer_id = r.retailer_id
GROUP BY r.retailer_name
ORDER BY total_purchased DESC;
```

retailer_name	total_purchased
Tech Gadgets	39390.00
Smart Home	23808.00
Power Electronics	11968.00
Beauty Haven	11240.00
Fresh N Fast	6340.00
Super Save	4590.00
City Drinks Corner	4283.50
Thirst Quencher	4268.25
Daily Groceries	3872.00
Glamour Spot	3420.00
Health Plus	3370.00
Neighborhood Shop	3168.00
Natural Beauty	2565.00
Medi Quick	2040.00
Organic Choice	1620.00
24x7 Mart	1564.00
Bubbles Beverages	1235.00
Corner Store	1215.00
Life Care	1008.00
Quick Stop	816.00

2) Total Payments Made by Each Retailer :

```
SELECT
    r.retailer_name,
    SUM(py.amount_given) AS total_paid
FROM payments py
JOIN retailers r ON py.retailer_id = r.retailer_id
GROUP BY r.retailer_name
ORDER BY total_paid DESC;
```

retailer_name	total_paid
Tech Gadgets	35000.00
Smart Home	20000.00
Power Electronics	8000.00
Beauty Haven	7000.00
Fresh N Fast	3000.00
Thirst Quencher	1500.00
Medi Quick	1500.00
Quick Stop	1000.00
City Drinks Corner	1000.00
Life Care	1000.00
Organic Choice	1000.00
24x7 Mart	1000.00
Glamour Spot	1000.00
Super Save	1000.00
Natural Beauty	800.00
Bubbles Beverages	500.00
Health Plus	500.00
Daily Groceries	500.00
Corner Store	500.00
Neighborhood Shop	500.00

3) Outstanding Balance for Each Retailer along with corresponding distributor :

```
SELECT
    r.retailer_name,
    d.distributor_name,
    r.final_balance
FROM retailers r
JOIN purchases p ON r.retailer_id = p.retailer_id
JOIN distributors d ON p.distributor_id = d.distributor_id
GROUP BY r.retailer_id, d.distributor_name, r.retailer_name, r.final_balance
ORDER BY r.final_balance DESC;
```

retailer_name	distributor_name	final_balance
Medi Quick	Pharma Distributors India	4060.00
Life Care	Pharma Distributors India	3692.00
Quick Stop	Pharma Distributors India	3484.00
Bubbles Beverages	Global Beverage Distrib...	3465.00
24x7 Mart	Premium Food Suppliers	2936.00
Natural Beauty	Cosmetic World	2535.00
Corner Store	Global Beverage Distrib...	2485.00
Organic Choice	Premium Food Suppliers	2480.00
Health Plus	Pharma Distributors India	1530.00
Daily Groceries	Premium Food Suppliers	1528.00
Glamour Spot	Cosmetic World	1480.00
City Drinks Corner	Global Beverage Distrib...	1216.50
Thirst Quencher	Global Beverage Distrib...	1031.75
Smart Home	ElectroMart	992.00
Tech Gadgets	ElectroMart	610.00
Beauty Haven	Cosmetic World	460.00
Super Save	Cosmetic World	410.00
Fresh N Fast	Premium Food Suppliers	260.00
Neighborhood Shop	ElectroMart	232.00
Power Electronics	ElectroMart	132.00

4) Purchase Items Breakdown for a Retailer :

```

SELECT
    r.retailer_name,
    pi.purchase_id,
    p.product_name,
    pi.quantity,
    pi.price
FROM purchase_items pi
JOIN distributor_product_inventory dpi ON pi.inventory_id = dpi.inventory_id
JOIN products p ON dpi.product_id = p.product_id
JOIN purchases pu ON pi.purchase_id = pu.purchase_id
JOIN retailers r ON pu.retailer_id = r.retailer_id
WHERE r.retailer_name = 'City Drinks Corner';

```


retailer_name	purchase_id	product_name	quantity	price
City Drinks Corner	pu1a2b3c4	Cola Drink 1L	20	40.50
City Drinks Corner	pu1a2b3c4	Premium Orange Juice 500ml	10	102.00
City Drinks Corner	pu1a2b3c4	Sparkling Water 750ml	10	61.75
City Drinks Corner	pu2d3e4f5	Premium Orange Juice 500ml	18	102.00

5) Total Sales (Revenue) per Distributor :

```
SELECT
  d.distributor_name,
  SUM(p.total_amount) AS total_sales
FROM purchases p
JOIN distributors d ON p.distributor_id = d.distributor_id
GROUP BY d.distributor_name
ORDER BY total_sales DESC;
```

distributor_name	total_sales
ElectroMart	78334.00
Cosmetic World	21815.00
Premium Food Suppliers	13396.00
Global Beverage Distrib...	11001.75
Pharma Distributors India	7234.00

6) Distributor-wise Profit:

```
SELECT
  d.distributor_id,
  d.distributor_name,
  SUM((dpi.final_price - dpi.purchase_cost) * pi.quantity) AS total_profit
FROM purchase_items pi
JOIN distributor_product_inventory dpi ON pi.inventory_id = dpi.inventory_id
JOIN distributors d ON dpi.distributor_id = d.distributor_id
GROUP BY d.distributor_id, d.distributor_name
ORDER BY total_profit DESC;
```

distributor_id	distributor_name	total_profit
d4k5l6m7	ElectroMart	11161.60
d3h4i5j6	Cosmetic World	4363.00
d2e3f4g5	Premium Food Suppliers	2385.25
d1a2b3c4	Global Beverage Distributors	1955.10
d5n6o7p8	Pharma Distributors India	1441.20

7) Delivery Summary by Status :

```
SELECT
    status,
    COUNT(*) AS number_of_deliveries
FROM deliveries
GROUP BY status;
```

status	number_of_deliveries
Delivered	17
Processing	4
In Transit	5

8) Low Stock Alert :

```
SELECT
    d.distributor_name,
    p.product_name,
    dpi.stock_quantity
FROM distributor_product_inventory dpi
JOIN distributors d ON dpi.distributor_id = d.distributor_id
JOIN products p ON dpi.product_id = p.product_id
WHERE dpi.stock_quantity < 50
ORDER BY dpi.stock_quantity;
```

distributor_name	product_name	stock_quantity
Premium Food Suppliers	Wireless Noise Cancelling Headphones	15
ElectroMart	Portable Projector	22
ElectroMart	Wireless Noise Cancelling Headphones	26
ElectroMart	Smart Watch Pro	38
Premium Food Suppliers	Truffle Olive Oil 250ml	48
ElectroMart	Anti-Aging Cream 50ml	48

9) Top 5 Retailers by Purchase Volume (with corresponding distributor) :

```
SELECT
  r.retailer_name,
  d.distributor_name,
  SUM(p.total_amount) AS total_spent
FROM purchases p
JOIN retailers r ON p.retailer_id = r.retailer_id
JOIN distributors d ON p.distributor_id = d.distributor_id
GROUP BY r.retailer_id, r.retailer_name, d.distributor_name
ORDER BY total_spent DESC
LIMIT 5;
```

retailer_name	distributor_name	total_spent
Tech Gadgets	ElectroMart	39390.00
Smart Home	ElectroMart	23808.00
Power Electronics	ElectroMart	11968.00
Beauty Haven	Cosmetic World	11240.00
Fresh N Fast	Premium Food Suppliers	6340.00

10) Purchase Audit Report for Discrepancy Detection :

```
SELECT
    p.purchase_id,
    r.retailer_name,
    d.distributor_name,
    p.total_amount AS declared_total,
    ROUND(SUM(pi.quantity * pi.price), 2) AS calculated_total,
    ROUND(p.total_amount - SUM(pi.quantity * pi.price), 2) AS discrepancy,
    CASE
        WHEN ABS(p.total_amount - SUM(pi.quantity * pi.price)) > 1 THEN 'INVESTIGATE'
        ELSE 'OK (Rounding difference)'
    END AS audit_status
FROM purchases p
JOIN purchase_items pi ON p.purchase_id = pi.purchase_id
JOIN retailers r ON p.retailer_id = r.retailer_id
JOIN distributors d ON p.distributor_id = d.distributor_id
GROUP BY p.purchase_id
HAVING ABS(discrepancy) > 0.99
ORDER BY ABS(discrepancy) DESC;
```

purchase_id	retailer_name	distributor_name	declared_total	calculated_total	discrepancy	audit_status
pu6t4u5v6	Smart Home	ElectroMart	23808.00	29734.00	-5926.00	INVESTIGATE
pu6j8k9l0	Quick Stop	Pharma Distributors India	816.00	1020.00	-204.00	INVESTIGATE
pu5m6n7o8	Bubbles Beverages	Global Beverage Distributors	1235.00	1223.75	11.25	INVESTIGATE