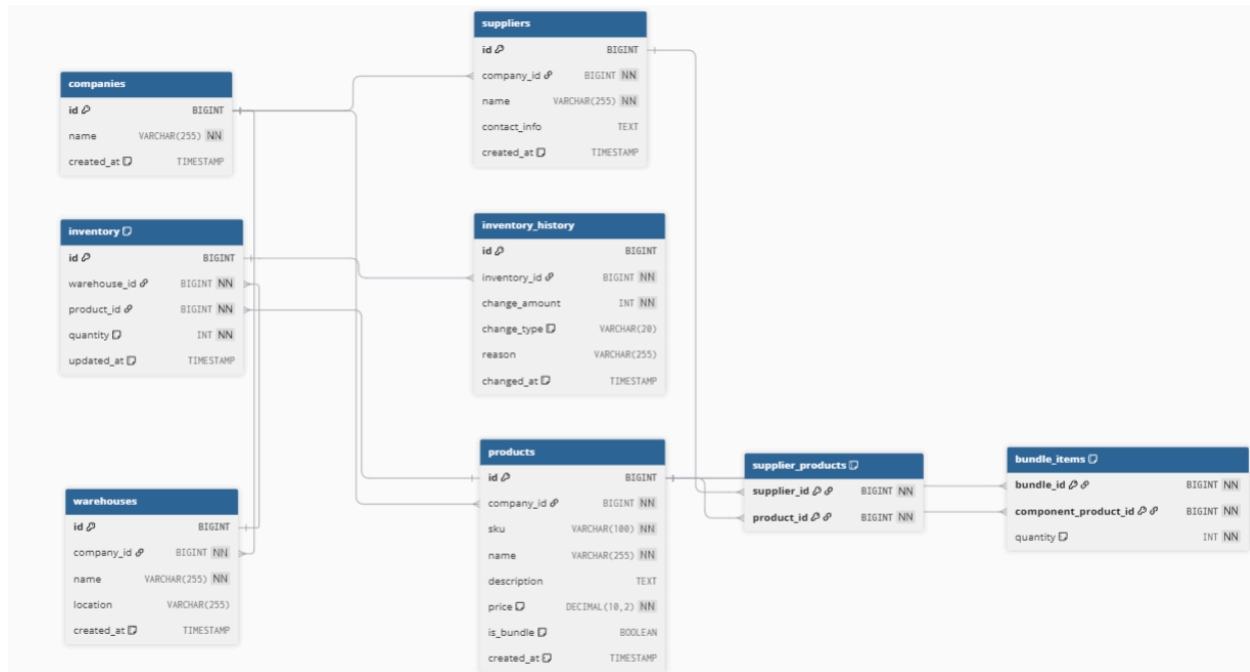# PART 2

Tables and Purpose

1. **companies** – Stores company details.

```
CREATE TABLE companies (
    id BIGINT PRIMARY KEY AUTO_INCREMENT,
    name VARCHAR(255) NOT NULL,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);
```

2. **warehouses** – Stores warehouses for each company.

```
CREATE TABLE warehouses (
    id BIGINT PRIMARY KEY AUTO_INCREMENT,
    company_id BIGINT NOT NULL,
    name VARCHAR(255) NOT NULL,
```

```
    location VARCHAR(255),
    FOREIGN KEY (company_id) REFERENCES companies(id)
);
```

3. **products** – Stores product details.

```
CREATE TABLE products (
    id BIGINT PRIMARY KEY AUTO_INCREMENT,
    company_id BIGINT NOT NULL,
    sku VARCHAR(100) NOT NULL UNIQUE,
    name VARCHAR(255) NOT NULL,
    price DECIMAL(10,2) NOT NULL CHECK (price >= 0),
    is_bundle BOOLEAN DEFAULT FALSE,
    FOREIGN KEY (company_id) REFERENCES companies(id)
);
```

4. **inventory** – Tracks product quantity in each warehouse.

```
CREATE TABLE inventory (
    id BIGINT PRIMARY KEY AUTO_INCREMENT,
    warehouse_id BIGINT NOT NULL,
    product_id BIGINT NOT NULL,
    quantity INT NOT NULL CHECK (quantity >= 0),
    UNIQUE (warehouse_id, product_id),
    FOREIGN KEY (warehouse_id) REFERENCES warehouses(id),
    FOREIGN KEY (product_id) REFERENCES products(id)
);
```

5. **inventory_history** – Tracks stock changes over time.

```
CREATE TABLE inventory_history (
    id BIGINT PRIMARY KEY AUTO_INCREMENT,
    inventory_id BIGINT NOT NULL,
    change_amount INT NOT NULL,
    change_type ENUM('INCREASE', 'DECREASE', 'ADJUSTMENT') NOT NULL,
    reason VARCHAR(255),
    FOREIGN KEY (inventory_id) REFERENCES inventory(id)
);
```

6. **suppliers** – Stores suppliers for each company.

```
CREATE TABLE suppliers (
    id BIGINT PRIMARY KEY AUTO_INCREMENT,
    company_id BIGINT NOT NULL,
    name VARCHAR(255) NOT NULL,
    FOREIGN KEY (company_id) REFERENCES companies(id)
);
```

7. **supplier_products** – Links suppliers to products they supply.

```
CREATE TABLE supplier_products (
    supplier_id BIGINT NOT NULL,
    product_id BIGINT NOT NULL,
    PRIMARY KEY (supplier_id, product_id),
    FOREIGN KEY (supplier_id) REFERENCES suppliers(id),
    FOREIGN KEY (product_id) REFERENCES products(id)
);
```

8. **bundle_items** – Links a bundle product to its individual products.

```
CREATE TABLE bundle_items (
    bundle_id BIGINT NOT NULL,
    component_product_id BIGINT NOT NULL,
    quantity INT NOT NULL CHECK (quantity > 0),
    PRIMARY KEY (bundle_id, component_product_id),
    FOREIGN KEY (bundle_id) REFERENCES products(id),
    FOREIGN KEY (component_product_id) REFERENCES products(id)
);
```