Table Descriptions

1. **Customers**: Stores customer details.
    - **Columns**:
        - `customer_id`: Primary key, unique identifier for each customer.
        - `first_name`, `last_name`: Customer's name.
        - `email`: Unique customer email.
        - `phone`, `city`: Contact details of the customer.
        - `signup_date`: Date the customer signed up.

2. **Products**: Contains information about each product.
    - **Columns**:
        - `product_id`: Primary key, unique identifier for each product.
        - `product_name`: Name of the product.
        - `category`: Category or type of product.
        - `price`: Product price, must be non-negative.
        - `stock_quantity`: Quantity available in stock, must be non-negative.

3. **Orders**: Contains details of each order placed by customers.
    - **Columns**:
        - `order_id`: Primary key, unique identifier for each order.
        - `customer_id`: Foreign key linking to `Customers`, indicating who placed the order.
        - `order_date`: Date the order was placed.
        - `status`: Status of the order (Pending, Shipped, or Cancelled).
        - `total_amount`: Total amount for the order, must be non-negative.

4. **Order_Details**: Stores information about products included in each order.
    - **Columns**:
        - `order_detail_id`: Primary key, unique identifier for each order line item.
        - `order_id`: Foreign key linking to `Orders`, indicating the order it belongs to.
        - `product_id`: Foreign key linking to `Products`, indicating which product was ordered.
        - `quantity`: Quantity of the product in this order, must be positive.
        - `unit_price`: Unit price of the product at the time of order, must be non-negative.

5. **Suppliers**: Stores information about suppliers providing products.
    - **Columns**:
        - `supplier_id`: Primary key, unique identifier for each supplier.
        - `supplier_name`: Name of the supplier.
        - `contact_name`: Contact person's name at the supplier.
        - `phone`, `city`: Contact details of the supplier.

6. **Product_Supplier**: Join table for the many-to-many relationship between `Products` and `Suppliers`.
    - **Columns**:
        - `product_id`: Foreign key linking to `Products`.
        - `supplier_id`: Foreign key linking to `Suppliers`.
    - **Primary Key**: Composite key of `product_id` and `supplier_id` to ensure each product-supplier pairing is unique.

Constraints & Relationships

- **Foreign Keys**:
    - `customer_id` in `Orders` references `Customers`.
    - `order_id` in `Order_Details` references `Orders`.
    - `product_id` in `Order_Details` references `Products`.
    - `product_id` and `supplier_id` in `Product_Supplier` reference `Products` and `Suppliers`, respectively.
- **Check Constraints**:
    - Ensures `price` and `unit_price` are non-negative.
    - Limits `status` values in `Orders` to predefined statuses.

This schema provides a robust structure for managing a retail database, supporting inventory, orders, and customer-supplier relationships. Let me know if you need further customization or additional tables!