

# PostgreSQL Schema with Columns, Data Types, and Constraints

## Table: suppliers

Column	Data Type
supplier_id	SERIAL
supplier_name	VARCHAR(150)
contact_person	VARCHAR(100)
phone_number	VARCHAR(20)
email	VARCHAR(150)
country	VARCHAR(100)
created_at	TIMESTAMP

Constraints:

- Primary Key: supplier\_id
- NOT NULL: supplier\_name, email, country, created\_at
- UNIQUE: email
- DEFAULT: created\_at = CURRENT\_TIMESTAMP

## Table: warehouses

Column	Data Type
warehouse_id	SERIAL
warehouse_name	VARCHAR(150)
city	VARCHAR(100)
state	VARCHAR(100)
country	VARCHAR(100)
capacity_units	INT
created_at	TIMESTAMP

Constraints:

- Primary Key: warehouse\_id
- NOT NULL: warehouse\_name, city, country, capacity\_units
- DEFAULT: created\_at = CURRENT\_TIMESTAMP
- CHECK: capacity\_units >= 0

## Table: customers

Column	Data Type
customer_id	SERIAL
customer_name	VARCHAR(150)
phone_number	VARCHAR(20)

email	VARCHAR(150)
city	VARCHAR(100)
country	VARCHAR(100)
created_at	TIMESTAMP

Constraints:

- Primary Key: customer\_id
- NOT NULL: customer\_name, email, country
- UNIQUE: email
- DEFAULT: created\_at = CURRENT\_TIMESTAMP

### Table: purchase\_orders

Column	Data Type
po_id	SERIAL
supplier_id	INT
po_date	DATE
expected_date	DATE
status	VARCHAR(50)
total_amount	NUMERIC(12,2)
created_at	TIMESTAMP

Constraints:

- Primary Key: po\_id
- NOT NULL: supplier\_id, po\_date, status, total\_amount
- DEFAULT: status='Pending', total\_amount=0.00, created\_at=CURRENT\_TIMESTAMP
- CHECK: total\_amount >= 0
- CHECK: expected\_date IS NULL OR expected\_date >= po\_date
- Foreign Key: supplier\_id -> suppliers(supplier\_id)

### Table: purchase\_order\_items

Column	Data Type
po_item_id	SERIAL
po_id	INT
product_id	INT
quantity	INT
unit_price	NUMERIC(10,2)
created_at	TIMESTAMP

Constraints:

- Primary Key: po\_item\_id
- NOT NULL: po\_id, product\_id, quantity, unit\_price
- DEFAULT: quantity=1, created\_at=CURRENT\_TIMESTAMP

- UNIQUE (composite): (po\_id, product\_id)
- CHECK: quantity > 0, unit\_price >= 0
- Foreign Key: po\_id -> purchase\_orders(po\_id)

## Table: inventory

Column	Data Type
inventory_id	SERIAL
warehouse_id	INT
product_id	INT
quantity_on_hand	INT
reorder_level	INT
last_updated	TIMESTAMP

Constraints:

- Primary Key: inventory\_id
- NOT NULL: warehouse\_id, product\_id, quantity\_on\_hand, reorder\_level
- DEFAULT: quantity\_on\_hand=0, reorder\_level=10
- UNIQUE (composite): (warehouse\_id, product\_id)
- CHECK: quantity\_on\_hand >= 0, reorder\_level >= 0
- Foreign Key: warehouse\_id -> warehouses(warehouse\_id)

## Table: sales\_orders

Column	Data Type
sales_order_id	SERIAL
customer_id	INT
order_date	DATE
status	VARCHAR(50)
total_amount	NUMERIC(12,2)
created_at	TIMESTAMP

Constraints:

- Primary Key: sales\_order\_id
- NOT NULL: customer\_id, order\_date, status, total\_amount
- DEFAULT: status='Pending', total\_amount=0.00, created\_at=CURRENT\_TIMESTAMP
- CHECK: total\_amount >= 0
- Foreign Key: customer\_id -> customers(customer\_id)

## Table: sales\_order\_items

Column	Data Type
so_item_id	SERIAL
sales_order_id	INT

product_id	INT
quantity	INT
unit_price	NUMERIC(10,2)
created_at	TIMESTAMP

Constraints:

- Primary Key: so\_item\_id
- NOT NULL: sales\_order\_id, product\_id, quantity, unit\_price
- DEFAULT: created\_at=CURRENT\_TIMESTAMP
- UNIQUE (composite): (sales\_order\_id, product\_id)
- CHECK: quantity > 0, unit\_price >= 0
- Foreign Key: sales\_order\_id -> sales\_orders(sales\_order\_id)

## Table: shipments

Column	Data Type
shipment_id	SERIAL
sales_order_id	INT
warehouse_id	INT
shipment_date	DATE
delivery_date	DATE
shipment_status	VARCHAR(50)
tracking_number	VARCHAR(100)
created_at	TIMESTAMP

Constraints:

- Primary Key: shipment\_id
- NOT NULL: sales\_order\_id, warehouse\_id, shipment\_date, shipment\_status
- UNIQUE: tracking\_number
- DEFAULT: shipment\_status='Created', created\_at=CURRENT\_TIMESTAMP
- CHECK: delivery\_date IS NULL OR delivery\_date >= shipment\_date
- Foreign Keys: sales\_order\_id -> sales\_orders(sales\_order\_id), warehouse\_id -> warehouses(warehouse\_id)