

# Comprehensive Database Project

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Term 01  
01CSD-2206-02

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# BRIGHT LTD

## Product - Lamps

### Company Overview

At Bright, we aim to light up any space with our diverse selection of product, knowledgeable staff and competitive pricing.

Our selection of lamps ranges from space-saving styles to floor lamps to hanging lamps. Whatever the customer is looking for, Bright is sure to deliver, literally, as we provide prompt and professional delivery to get any and all lamps to our customers ASAP. Our well-trained staff have an eye for style and the technical expertise to advise customers on the best-suited lamp(s) for their needs.

### Product Attributes

ATTRIBUTES	SAMPLE DATA
Product ID	2744
Model	33-1547
Brand	Edison
Type	Tripod
Price (\$)	59.99
Size (in inches)	10"x10"x21"
Colour	Black
Finish	Satin
With/Without Shade	Without
Maximum Wattage	60
Switch Mechanism	Toggle Button
Number of Bulbs	1
Base Material	Steel

# CUSTOMER INVOICE

Order ID: 1000  
Invoice Date: 2023-10-01

## BRIGHT LTD

123 Light Street  
Sunnydale, ON N3J 4H2  
123-456-7890

Customer ID: 5330  
Customer Name: Jordan Doe  
Customer Phone Number: N/A  
Customer Email: jordan.doe@example.com

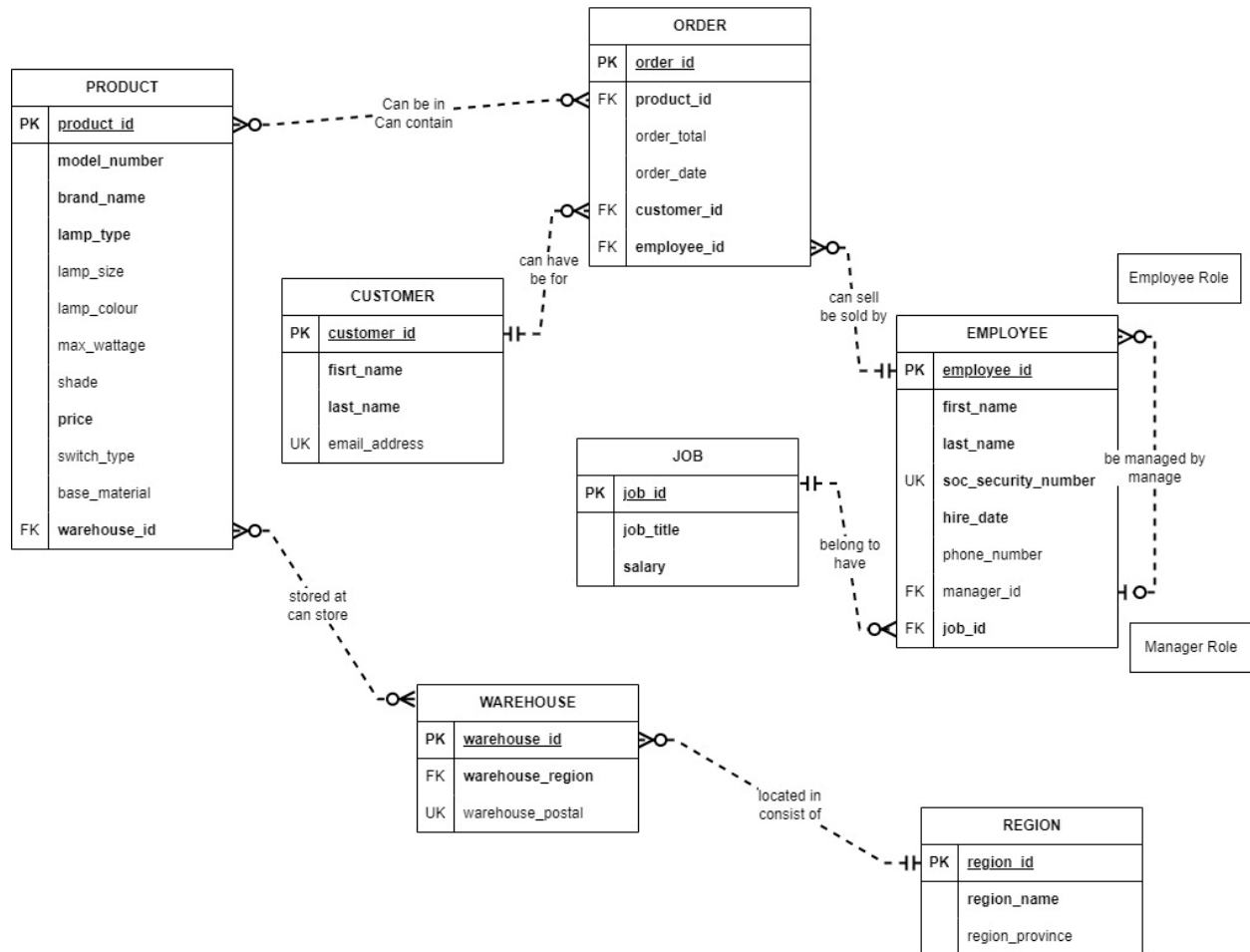
Associate ID: 200101  
Associate Name: Frank About

PRODUCT ID	MODEL	BRAND	DESCRIPTION	QTY	RETAIL PRICE	FINAL PRICE
K374	WL4001	ShineBright	Elegant Wall Lamp	2	49.99	99.98
Q25S	HL5001	GlowWave	Modern Hanging Lamp	1	69.99	69.99
G7P1	TL3006	LumiSphere	Retro Table Lamp	3	43.99	131.97
R4L6	TL3007	LumiSphere	Classic Table Lamp	3	47.99	143.97
K4F6	HL5005	GlowWave	Contemporary Pendant	2	99.99	199.98
					Sub-Total	645.89
					Taxes	83.97
					Delivery Fee	
					Total	\$729.86

*Thankyou for choosing Bright!*

# Entity Relationship Diagrams

Many-to-many relationships unresolved



A **Customer** **MAY** have zero, one or more **Orders**  
 An **Order** **MUST** be for one and only one **Customer**

A **Product** **MAY** be in zero, one or more **Orders**  
 An **Order** **MAY** contain zero, one or more **Products**

An **Employee** **MAY** sell zero, one or more **Orders**  
 An **Order** **MAY** only be sold by one and only one **Employee**

An **Employee** **MUST** belong to one and only one **Job**  
 A **Job** **MAY** have zero, one or more **Employees**

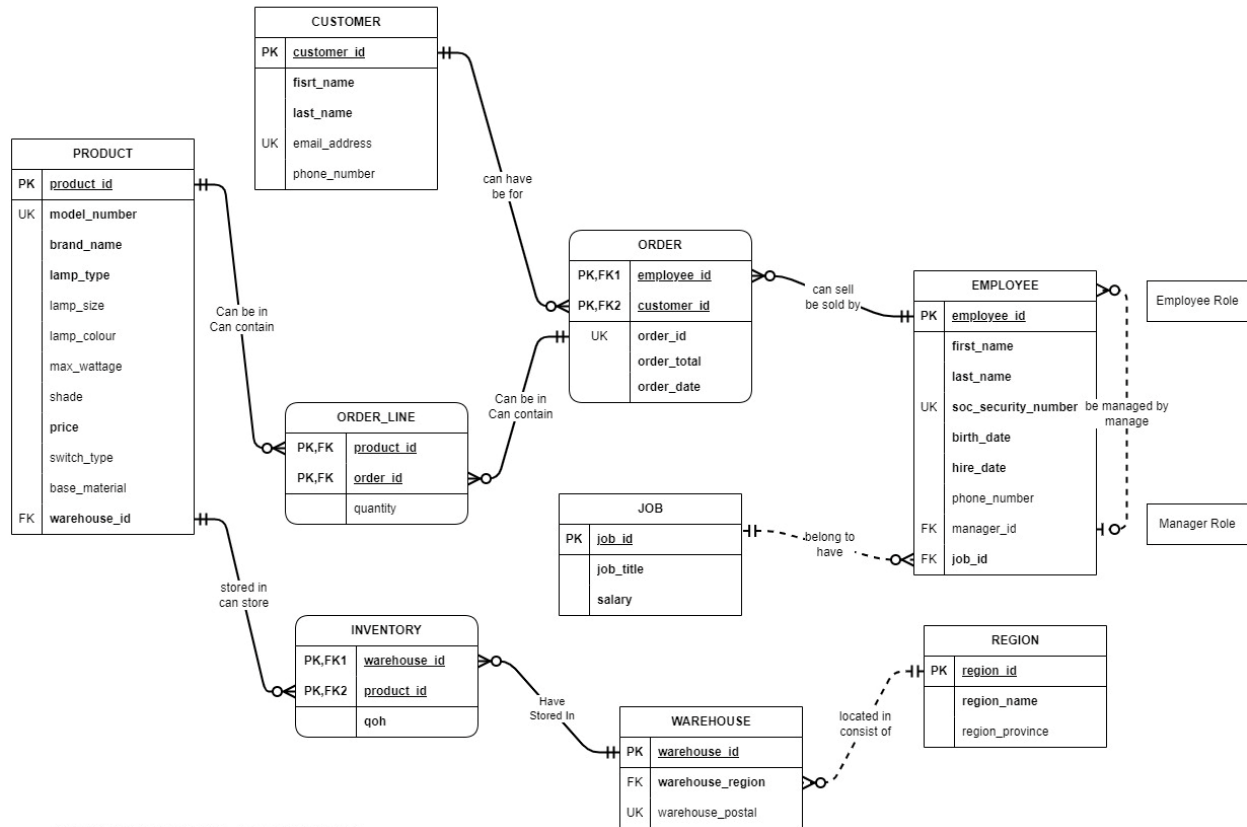
A **Manager** **MAY** manage zero, one or more **Employees**  
 An **Employee** **MAY** be managed by zero, one or more **Managers**

A **Product** **MAY** be stored at zero, one or more **Warehouses**  
 A **Warehouse** **MAY** store zero, one or more **Products**

A **Warehouse** **MUST** be located in one and only one **Region**  
 A **Region** **MAY** contain zero, one or more **Warehouses**

# Comprehensive Database Project

Many-to-many relationships resolved



A Customer **MAY** have zero, one or more Orders  
 An Order **MUST** be for one and only one Customer

A Product **MAY** be in zero, one or more Order Lines  
 An Order Line **MUST** contain one and only one Product

An Order **MAY** contain zero, one or more Order Lines  
 An Order Line **MUST** be in one and only one Order

An Employee **MAY** sell zero, one or more Orders  
 An Order **MAY** only be sold by one and only one Employee

An Employee **MUST** belong to one and only one Job  
 A Job **MAY** have zero, one or more Employees

A Manager **MAY** manage zero, one or more Employees  
 An Employee **MAY** be managed by zero, one or more Managers

A Product **MAY** be stored in zero, one or more Inventories  
 A Inventory **MUST** store one and only one Product

A Warehouse **MAY** have zero, one or more Inventories  
 An Inventory **MUST** be stored at one and only one Warehouse

A Warehouse **MUST** be located in one and only one Region  
 A Region **MAY** contain zero, one or more Warehouses

## Relational Data Models

PRODUCTS				
Key	Optionality	Column Name	Data Type	Length
PK	*	product_id	VARCHAR	5
UK	*	model_number	DECIMAL	10
	*	brand_name	VARCHAR	100
		lamp_type	VARCHAR	100
		lamp_size	DECIMAL	100
		lamp_colour	VARCHAR	100
		max_wattage	DECIMAL	2
		shade	VARCHAR	100
	*	price	DECIMAL	6,2
		switch_type	VARCHAR	1
		base_material	VARCHAR	100
FK	*	warehouse_id	INTEGER	

EMPLOYEES				
Key	Optionality	Column Name	Data Type	Length
PK	*	employee_id	INTEGER	
	*	first_name	VARCHAR	50
	*	last_name	VARCHAR	50
UK	*	soc_security_number	DECIMAL	9,0
	*	hire_date	DATE	
	*	job_status	VARCHAR	1
		phone_number	DECIMAL	10,0
	*	salary	DECIMAL	6,2
FK		manager_id	INTEGER	
	*	job_title	INTEGER	

CUSTOMERS				
Key	Optionality	Column Name	Data Type	Length
PK	*	customer_id	INTEGER	
	*	first_name	VARCHAR	50
	*	last_name	VARCHAR	50

UK		email_address	VARCHAR	125
----	--	---------------	---------	-----

ORDERS				
Key	Optionality	Column Name	Data Type	Length
PK	*	order_id	INTEGER	
	*	order_total	DECIMAL	6,2
	*	order_date	DATE	
FK	*	customer_id	INTEGER	
FK	*	employee_id	INTEGER	

ORDER_ITEMS				
Key	Optionality	Column Name	Data Type	Length
PK,FK	*	product_id	INTEGER	
PK,FK	*	order_id	INTEGER	
	*	quantity	DECIMAL	2

WAREHOUSES				
Key	Optionality	Column Name	Data Type	Length
PK	*	warehouse_id	INTEGER	
FK	*	warehouse_region	VARCHAR	100
		warehouse_postal	VARCHAR	10

INVENTORY				
Key	Optionality	Column Name	Data Type	Length
PK,FK	*	warehouse_id	INTEGER	
FK,FK	*	product_id	VARCHAR	30
	*	qoh	DECIMAL	3

REGIONS				
Key	Optionality	Column Name	Data Type	Length
PK	*	region_id	INTEGER	
UK	*	region_name	VARCHAR	100
	*	region_province	VARCHAR	10



## Business Rules

LAMPS(**product\_id**, model\_number, brand\_name, lamp\_type,  
lamp\_size,,lamp\_colour, max\_wattage, shade,  
price, switch\_type, base\_material,  
warehouse\_id)

EMPLOYEES(**employee\_id**,first\_name, last\_name,  
soc\_security\_number, hire\_date, phone\_number, *manager\_id*,  
*department\_id*)

FK manager\_id  $\implies$  MANAGERS

FK department\_id  $\implies$  DEPARTMENTS

CUSTOMERS (**customer\_id**, first\_name, last\_name,  
email\_address)

ORDERS (**order\_id**, order\_total, order\_date,

ORDER LINES (*order\_id*, *product\_id*,

WAREHOUSES (**warehouse\_id**, *warehouse\_region*,  
warehouse\_postal)

FK warehouse\_region  $\implies$  REGIONS

REGIONS (**region\_id**, region\_name, region\_province)

INVENTORY (*product\_id*, *warehouse\_id*, qoh)

FK warehouse\_id  $\implies$  WAREHOUSES

FK product\_id  $\implies$  PRODUCTS

# CREATE Statements

-----  
-----CREATE TABLES-----  
-----

```
CREATE TABLE bright_regions (  
    region_id          INTEGER NOT NULL,  
    region_name        VARCHAR(100) NOT NULL,  
    region_province    VARCHAR(2) NOT NULL);
```

```
CREATE TABLE bright_warehouses (  
    warehouse_id       INTEGER NOT NULL,  
    warehouse_name     VARCHAR(100) NOT NULL,  
    warehouse_region   INTEGER NOT NULL,  
    warehouse_postal   VARCHAR (8) NOT NULL);
```

```
CREATE TABLE bright_products(  
    product_id         VARCHAR (10) NOT NULL,  
    model_number       VARCHAR(10) NOT NULL,  
    brand_name         VARCHAR(100) NOT NULL,  
    lamp_name          VARCHAR(100),  
    lamp_type          VARCHAR(100),  
    lamp_size          VARCHAR(100),  
    lamp_color         VARCHAR(100),  
    max_wattage        DECIMAL (10),  
    shade_style        VARCHAR(100),  
    price              DECIMAL(6,2) NOT NULL,  
    switch_type        VARCHAR (100),  
    base_material      VARCHAR (100),  
    warehouse_id       INTEGER NOT NULL);
```

```
DROP TABLE b_inventory;
```

```
CREATE TABLE bright_inventory (  
    product_id         VARCHAR (10) NOT NULL,  
    warehouse_id       DECIMAL (10) NOT NULL,  
    qoh                DECIMAL (3) NOT NULL  
);
```

```
CREATE TABLE bright_employees (  
    employee_id        INTEGER NOT NULL,
```

```
first_name      VARCHAR(100) NOT NULL,  
last_name       VARCHAR(100) NOT NULL,  
soc_sec_number  DECIMAL (12) NOT NULL,  
birth_date      DATE NOT NULL,  
hire_date       DATE NOT NULL,  
job_status      VARCHAR (1) NOT NULL,  
phone_number    VARCHAR (14),  
manager_id      INTEGER,  
job_code        INTEGER NOT NULL);
```

```
CREATE TABLE bright_jobs (  
  job_id         INTEGER NOT NULL,  
  job_name       VARCHAR(255) NOT NULL,  
  salary         DECIMAL (10,2) NOT NULL  
);
```

```
CREATE TABLE bright_customers (  
  customer_id    INTEGER GENERATED ALWAYS AS IDENTITY  
                START WITH 5010 INCREMENT BY  
10  
                NOCACHE,  
  first_name     VARCHAR(100) NOT NULL,  
  last_name      VARCHAR(100) NOT NULL,  
  email_address  VARCHAR(100),  
  phone_number   VARCHAR (14)  
);
```

```
CREATE TABLE bright_orders (  
  order_id       INTEGER NOT NULL,  
  order_total    DECIMAL (6,2) NOT NULL,  
  order_date     DATE NOT NULL,  
  customer_id    INTEGER NOT NULL,  
  employee_id    INTEGER NOT NULL);
```

```
CREATE TABLE bright_order_items (  
  product_id     VARCHAR (5) NOT NULL,  
  order_id       INTEGER NOT NULL,  
  quantity       DECIMAL (2) NOT NULL);
```

# Database Constraints

---

---

-----PRIMARY KEYS-----

---

---

```
ALTER TABLE bright_products
  ADD CONSTRAINT bright_lamps_pk
  PRIMARY KEY (product_id);
```

```
ALTER TABLE bright_employees
  ADD CONSTRAINT bright_employees_pk
  PRIMARY KEY (employee_id);
```

```
ALTER TABLE bright_inventory
  ADD CONSTRAINT bright_inventory_pk
  PRIMARY KEY (product_id, warehouse_id);
```

```
ALTER TABLE bright_customers
  ADD CONSTRAINT bright_customers_pk
  PRIMARY KEY (customer_id);
```

```
ALTER TABLE bright_orders
  ADD CONSTRAINT bright_orders_pk
  PRIMARY KEY (customer_id, employee_id);
```

```
ALTER TABLE bright_order_items
  ADD CONSTRAINT bright_order_items_pk
  PRIMARY KEY (order_id, product_id);
```

```
ALTER TABLE bright_warehouses
  ADD CONSTRAINT bright_warehouses_pk
  PRIMARY KEY (warehouse_id);
```

```
ALTER TABLE bright_regions
  ADD CONSTRAINT bright_regions_pk
  PRIMARY KEY (region_id);
```

```
ALTER TABLE bright_jobs
  ADD CONSTRAINT bright_jobs_pk
  PRIMARY KEY (job_id);
```

```
-----
-----UNIQUE KEYS-----
-----
```

```
ALTER TABLE bright_products
  ADD CONSTRAINT bright_lamps_uk1
  UNIQUE (model_number);
```

```
ALTER TABLE bright_employees
  ADD CONSTRAINT bright_employees_uk1
  UNIQUE (soc_sec_number);
```

```
ALTER TABLE bright_customers
  ADD CONSTRAINT bright_customers_uk1
  UNIQUE (email_address);
```

```
ALTER TABLE bright_regions
  ADD CONSTRAINT bright_regions_uk1
  UNIQUE (region_name);
```

```
ALTER TABLE bright_orders
  ADD CONSTRAINT bright_ordersuk1
  UNIQUE (order_id);
```

```
-----
-----FOREIGN KEYS-----
-----
```

```
ALTER TABLE bright_products
  ADD CONSTRAINT bright_lamps_fk1
  FOREIGN KEY (warehouse_id)
  REFERENCES bright_warehouses (warehouse_id);
```

```
ALTER TABLE bright_inventory
  ADD CONSTRAINT bright_inventory_fk1
  FOREIGN KEY (warehouse_id)
  REFERENCES bright_warehouses (warehouse_id);
```

```
ALTER TABLE bright_inventory
  ADD CONSTRAINT bright_inventory_fk2
  FOREIGN KEY (product_id)
  REFERENCES bright_products (product_id);
```

```
ALTER TABLE bright_employees
  ADD CONSTRAINT bright_employees_fk1
  FOREIGN KEY (manager_id)
  REFERENCES bright_employees (employee_id);
```

```
ALTER TABLE bright_orders
  ADD CONSTRAINT bright_orders_fk1
  FOREIGN KEY (customer_id)
  REFERENCES bright_customers (customer_id);
```

```
ALTER TABLE bright_orders
  ADD CONSTRAINT bright_orders_fk2
  FOREIGN KEY (employee_id)
  REFERENCES bright_employees (employee_id);
```

```
ALTER TABLE bright_order_items
  ADD CONSTRAINT bright_order_items_fk1
  FOREIGN KEY (order_id)
  REFERENCES bright_orders (order_id);
```

```
ALTER TABLE bright_order_items
  ADD CONSTRAINT bright_order_items_fk2
  FOREIGN KEY (product_id)
  REFERENCES bright_products (product_id);
```

```
ALTER TABLE bright_warehouses
  ADD CONSTRAINT bright_warehouses_fk1
  FOREIGN KEY (warehouse_region)
```

```
REFERENCES bright_regions (region_id);
```

```
ALTER TABLE bright_employees  
ADD CONSTRAINT bright_employees_fk2  
FOREIGN KEY (job_code)  
REFERENCES bright_jobs (job_id);
```

```
-----  
-----BUSINESS CONSTRAINTS-----  
-----
```

```
-----EMPLOYEE CONSTRAINTS-----
```

```
ALTER TABLE bright_employees  
ADD CONSTRAINT bright_employees_hirebirthdateck  
CHECK (hire_date > birth_date);
```

```
ALTER TABLE bright_employees  
MODIFY (hire_date DEFAULT CURRENT_DATE);
```

```
ALTER TABLE bright_employees  
ADD CONSTRAINT bright_employees_soc_nock  
CHECK (soc_sec_number BETWEEN 1 AND 999999999);
```

```
ALTER TABLE bright_employees  
MODIFY (job_status DEFAULT 'I')
```

```
ALTER TABLE bright_employees  
ADD CONSTRAINT bright_employees_jobstatus  
CHECK (job_status IN ('A','I'));
```

```
-----JOB CONSTRAINTS-----  
-
```

```
ALTER TABLE bright_jobs  
ADD CONSTRAINT bright_employees_salaryck  
CHECK (salary<100000.00);
```

```
-----PRODUCT CONSTRAINTS-----
```

```
ALTER TABLE bright_products
```

```
ADD CONSTRAINT bright_products_switch_ck  
CHECK(switch_type IN ('T', 'R', 'S', 'P') );
```

-----CUSTOMER RESTRAINTS-----

```
ALTER TABLE bright_customers  
ADD CONSTRAINT bright_customers_ck1  
CHECK (email_address LIKE '%@%.%');
```

-----ORDER RESTRAINTS -----

```
ALTER TABLE bright_orders  
ADD CONSTRAINT bright_orders_totalck  
CHECK (order_total > 0);
```

```
ALTER TABLE bright_orders  
MODIFY (order_date DEFAULT CURRENT_DATE);
```

-----ORDER ITEM RESTRAINTS -----

```
ALTER TABLE bright_order_items  
ADD CONSTRAINT bright_order_items_quantck  
CHECK (quantity > 0);
```

```
ALTER TABLE bright_order_items  
ADD CONSTRAINT bright_order_items_quantck2  
CHECK (quantity <= 10);
```

-----WAREHOUSE RESTRAINTS-----

```
ALTER TABLE bright_warehouses  
ADD CONSTRAINT bright_warehouses_regionck  
CHECK (warehouse_region BETWEEN 100001 AND 100003);
```



# INSERT Statements

```
-----  
-----INSERT-----  
-----
```

```
-----REGIONS-----  
--bright_regions (region_ID, region_name, region_province)
```

```
INSERT ALL  
  INTO bright_regions VALUES(100001, 'North', 'ON')  
  INTO bright_regions VALUES(100002, 'East', 'NS')  
  INTO bright_regions VALUES(100003, 'West', 'BC')  
  SELECT * FROM DUAL;
```

```
-----WAREHOUSES-----
```

```
--bright_warehouses (warehouse_ID, warehouse_name,  
warehouse_region, warehouse_postal)
```

```
INSERT ALL  
  INTO bright_warehouses VALUES(101, 'RadiantHub North',  
100001, 'A1A 1A1')  
  INTO bright_warehouses VALUES(102, 'GlowWorld East',  
100002, 'B2B 2B2')  
  INTO bright_warehouses VALUES(103, 'LuminousCentral',  
100003, 'C3C 3C3')  
  INTO bright_warehouses VALUES(104, 'ShineLuxe  
Distributions', 100001, 'D4D 4D4')  
  INTO bright_warehouses VALUES(105, 'GlowTech West',  
100002, 'E5E 5E5')  
  INTO bright_warehouses VALUES(106, 'BrightSource Hub',  
100003, 'F6F 6F6')  
  INTO bright_warehouses VALUES(107, 'LuxeGlow Express',  
100001, 'G7G 7G7')  
  INTO bright_warehouses VALUES(108, 'RadiantReach  
Warehousing', 100002, 'H8H 8H8')
```

```

    INTO bright_warehouses VALUES(109, 'GlowWave Logistics',
100003, 'I9I 9I9')
    SELECT * FROM DUAL;

```

```

-----PRODUCTS-----

```

```

--bright_products (product_code, model_number, brand_name,
lamp_name, lamp_type, lamp_size, lamp_color, max_wattage,
shade_style, price, switch_type, base_material,
warehouse_id)

```

```

INSERT ALL

```

```

    INTO bright_products VALUES('K374', 'WL4001',
'ShineBright', 'Elegant Wall Lamp', 'Wall Lamp', '12x24x8',
'Brass', 40, 'Sconce', 49.99, 'T', 'Metal', 101)
    INTO bright_products VALUES('Q25S', 'HL5001',
'GlowWave', 'Modern Hanging Lamp', 'Hanging Lamp',
'18x12x18', 'Bronze', 60, 'Globe', 69.99, 'P', 'Glass', 102)
    INTO bright_products VALUES('A9Z1', 'TL3003',
'LumiSphere', 'Tabletop Illumination', 'Table Lamp',
'10x20x10', 'Turquoise', 30, 'Cylinder', 34.99, 'T',
'Ceramic', 103)
    INTO bright_products VALUES('R482', 'HL5002',
'GlowWave', 'Artistic Pendant', 'Hanging Lamp', '15x30x15',
'Silver', 70, 'Draped', 79.99, 'R', 'Metal', 104)
    INTO bright_products VALUES('P3R7', 'DL1004',
'RadiantLite', 'Sleek Desk Lamp', 'Desk Lamp', '8x15x8',
'Black', 25, 'Oval', 29.99, 'T', 'Plastic', 105)
    INTO bright_products VALUES('L1M0', 'WL4002',
'ShineBright', 'Contemporary Wall Sconce', 'Wall Lamp',
'14x28x14', 'Gold', 45, 'Cone', 54.99, 'R', 'Metal', 106)
    INTO bright_products VALUES('B5W6', 'TL3004',
'LumiSphere', 'Minimalist Table Lamp', 'Table Lamp',
'12x24x12', 'Red', 55, 'Cone', 44.99, 'T', 'Metal', 107)
    INTO bright_products VALUES('N9P1', 'HL5003',
'GlowWave', 'Crystal Pendant', 'Hanging Lamp', '20x40x20',
'Chrome', 80, 'Wave', 89.99, 'P', 'Glass', 108)
    INTO bright_products VALUES('Y2X5', 'DL1005',
'RadiantLite', 'Green Reading Light', 'Desk Lamp', '9x18x9',
'Green', 30, 'Rectangular', 39.99, 'T', 'Plastic', 109)

```

```
    INTO bright_products VALUES('Z4K2', 'WL4003',
'ShineBright', 'Sculptural Wall Sconce', 'Wall Lamp',
'16x32x16', 'Purple', 50, 'Artistic', 64.99, 'T', 'Metal',
101)
    INTO bright_products VALUES('T8L3', 'TL3005',
'LumiSphere', 'Vintage Table Lamp', 'Table Lamp',
'14x28x14', 'Yellow', 50, 'Dome', 49.99, 'R', 'Ceramic',
102)
    INTO bright_products VALUES('W3Q2', 'HL5004',
'GlowWave', 'Crystal Chandelier', 'Hanging Lamp',
'24x40x24', 'Crystal', 100, 'Chandelier', 129.99, 'S',
'Metal', 103)
    INTO bright_products VALUES('M5N6', 'DL1006',
'RadiantLite', 'Simple Desk Light', 'Desk Lamp', '10x20x10',
'Silver', 35, 'Cone', 27.99, 'T', 'Plastic', 104)
    INTO bright_products VALUES('D1B3', 'WL4004',
'ShineBright', 'Artistic Wall Sconce', 'Wall Lamp',
'13x26x13', 'Black', 45, 'Artistic', 59.99, 'S', 'Metal',
105)
    INTO bright_products VALUES('G7P1', 'TL3006',
'LumiSphere', 'Retro Table Lamp', 'Table Lamp', '11x22x11',
'Teal', 40, 'Retro', 43.99, 'R', 'Ceramic', 106)
    INTO bright_products VALUES('K4F6', 'HL5005',
'GlowWave', 'Contemporary Pendant', 'Hanging Lamp',
'22x35x22', 'Gold', 75, 'Pendant', 99.99, 'P', 'Metal', 107)
    INTO bright_products VALUES('Q8R2', 'DL1007',
'RadiantLite', 'Elegant Desk Lamp', 'Desk Lamp', '10x20x10',
'White', 35, 'Elegant', 31.99, 'S', 'Plastic', 108)
    INTO bright_products VALUES('A1D3', 'WL4005',
'ShineBright', 'Luxury Wall Sconce', 'Wall Lamp',
'15x30x15', 'Bronze', 50, 'Shade', 54.99, 'S', 'Metal', 109)
    INTO bright_products VALUES('R4L6', 'TL3007',
'LumiSphere', 'Classic Table Lamp', 'Table Lamp',
'13x26x13', 'Silver', 45, 'Classic', 47.99, 'R', 'Ceramic',
101)
    INTO bright_products VALUES('H9K2', 'HL5006',
'GlowWave', 'Chic Pendant', 'Hanging Lamp', '25x40x25',
'Rose Gold', 90, 'Chic', 109.99, 'R', 'Metal', 102)
    SELECT * FROM DUAL;
```

```
-----INVENTORY-----  
--bright_inventory (product_id, warehouse_id, qoh)
```

```
INSERT ALL
```

```
  INTO bright_inventory VALUES ('K374', 101, 8)  
  INTO bright_inventory VALUES ('Q25S', 101, 5)  
  INTO bright_inventory VALUES ('A9Z1', 101, 6)  
  INTO bright_inventory VALUES ('P3R7', 101, 4)  
  INTO bright_inventory VALUES ('L1M0', 102, 2)  
  INTO bright_inventory VALUES ('N9P1', 102, 9)  
  INTO bright_inventory VALUES ('Y2X5', 102, 1)  
  INTO bright_inventory VALUES ('Z4K2', 102, 1)  
  INTO bright_inventory VALUES ('T8L3', 103, 5)  
  INTO bright_inventory VALUES ('W3Q2', 103, 4)  
  INTO bright_inventory VALUES ('M5N6', 103, 2)  
  INTO bright_inventory VALUES ('G7P1', 103, 8)  
  INTO bright_inventory VALUES ('K4F6', 104, 6)  
  INTO bright_inventory VALUES ('A1D3', 104, 4)  
  INTO bright_inventory VALUES ('R4L6', 104, 2)  
  INTO bright_inventory VALUES ('H9K2', 104, 5)  
  INTO bright_inventory VALUES ('K374', 105, 9)  
  INTO bright_inventory VALUES ('Q25S', 105, 6)  
  INTO bright_inventory VALUES ('A9Z1', 105, 5)  
  INTO bright_inventory VALUES ('R482', 105, 4)  
  INTO bright_inventory VALUES ('P3R7', 105, 2)  
  INTO bright_inventory VALUES ('L1M0', 106, 5)  
  INTO bright_inventory VALUES ('B5W6', 106, 8)  
  INTO bright_inventory VALUES ('N9P1', 106, 3)  
  INTO bright_inventory VALUES ('Y2X5', 106, 3)  
  INTO bright_inventory VALUES ('Z4K2', 106, 3)  
  INTO bright_inventory VALUES ('T8L3', 106, 5)  
  INTO bright_inventory VALUES ('W3Q2', 106, 4)  
  INTO bright_inventory VALUES ('M5N6', 107, 5)  
  INTO bright_inventory VALUES ('D1B3', 107, 6)  
  INTO bright_inventory VALUES ('G7P1', 107, 7)  
  INTO bright_inventory VALUES ('K4F6', 107, 5)  
  INTO bright_inventory VALUES ('Q8R2', 107, 2)  
  INTO bright_inventory VALUES ('A1D3', 107, 5)
```

```
INTO bright_inventory VALUES ('R4L6', 107, 9)
INTO bright_inventory VALUES ('H9K2', 107, 5)
INTO bright_inventory VALUES ('K374', 108, 6)
INTO bright_inventory VALUES ('Q25S', 108, 4)
INTO bright_inventory VALUES ('A9Z1', 108, 2)
INTO bright_inventory VALUES ('R482', 108, 2)
INTO bright_inventory VALUES ('P3R7', 108, 8)
INTO bright_inventory VALUES ('L1M0', 108, 5)
INTO bright_inventory VALUES ('B5W6', 108, 2)
INTO bright_inventory VALUES ('N9P1', 108, 5)
INTO bright_inventory VALUES ('Y2X5', 108, 2)
INTO bright_inventory VALUES ('Z4K2', 108, 6)
INTO bright_inventory VALUES ('T8L3', 108, 9)
INTO bright_inventory VALUES ('W3Q2', 109, 4)
INTO bright_inventory VALUES ('M5N6', 109, 9)
INTO bright_inventory VALUES ('D1B3', 109, 9)
INTO bright_inventory VALUES ('G7P1', 109, 8)
INTO bright_inventory VALUES ('K4F6', 109, 5)
INTO bright_inventory VALUES ('Q8R2', 109, 2)
INTO bright_inventory VALUES ('A1D3', 109, 9)
INTO bright_inventory VALUES ('R4L6', 109, 3)
INTO bright_inventory VALUES ('H9K2', 109, 5)
INTO bright_inventory VALUES ('K374', 109, 8)
INTO bright_inventory VALUES ('R482', 109, 9)
INTO bright_inventory VALUES ('Q25S', 109, 5)
INTO bright_inventory VALUES ('B5W6', 109, 7)
SELECT * FROM DUAL
```

```
-----CUSTOMERS-----
--- bright_customers (customer_id, first_name, last_name,
email_address, phone_number)
```

```
INSERT INTO bright_customers VALUES(DEFAULT, 'John',
'Smith', 'john.smith@example.com', '548-965-2458')
INSERT INTO bright_customers VALUES(DEFAULT, 'Emily',
'Johnson', NULL, '519-685-9447')
INSERT INTO bright_customers VALUES(DEFAULT, 'Michael',
'Williams', 'michael.williams@example.com', '275-659-3665')
```

```
INSERT INTO bright_customers VALUES(DEFAULT, 'Sophia',
'Brown', 'sophia.brown@example.com', '515-545-5455')
INSERT INTO bright_customers VALUES(DEFAULT, 'William',
'Jones', 'william.jones@example.com', NULL)
INSERT INTO bright_customers VALUES(DEFAULT, 'Olivia',
'Davis', 'olivia.davis@example.com', '556-965-3215')
INSERT INTO bright_customers VALUES(DEFAULT, 'James',
'Miller', 'james.miller@example.com', '165-355-8547')
INSERT INTO bright_customers VALUES(DEFAULT, 'Emma',
'Wilson', 'emma.wilson@example.com', '874-578-9954')
INSERT INTO bright_customers VALUES(DEFAULT, 'Benjamin',
'Moore', NULL, '588-321-6544')
INSERT INTO bright_customers VALUES(DEFAULT, 'Ava',
'Taylor', 'ava.taylor@example.com', '333-666-9999')
INSERT INTO bright_customers VALUES(DEFAULT, 'Daniel',
'Anderson', 'daniel.anderson@example.com', '885-951-9548')
INSERT INTO bright_customers VALUES(DEFAULT, 'Mia',
'Jackson', 'mia.jackson@example.com', NULL)
INSERT INTO bright_customers VALUES(DEFAULT, 'Matthew',
'Harris', 'matthew.harris@example.com', NULL)
INSERT INTO bright_customers VALUES(DEFAULT, 'Ella',
'Martin', 'ella.martin@example.com', '963-963-9633')
INSERT INTO bright_customers VALUES(DEFAULT, 'David',
'Clark', 'david.clark@example.com', '522-589-5984')
INSERT INTO bright_customers VALUES(DEFAULT, 'John',
'David', 'John.david@example.com', '548-988-9657')
INSERT INTO bright_customers VALUES(DEFAULT, 'Kim',
'Possible', 'kim.possible@example.com', '547-854-4452')
INSERT INTO bright_customers VALUES(DEFAULT, 'Sally',
'Green', 'sally.green@example.com', '589-964-5321')
INSERT INTO bright_customers VALUES(DEFAULT, 'Joe', 'Dirt',
'Joe.dirt@example.com', '888-888-8888')
INSERT INTO bright_customers VALUES(DEFAULT, 'Garrett',
'Gandy', 'garret.gandy@example.com', '888-932-8888')
INSERT INTO bright_customers VALUES(DEFAULT, 'Betsy',
'Robinson', 'betsy.robinson@example.com', '514-965-6544')
INSERT INTO bright_customers VALUES(DEFAULT, 'Megan', 'Fox',
'megan.fox@example.com', '226-354-9877')
```

```
INSERT INTO bright_customers VALUES(DEFAULT, 'Jim',
'Cooper', 'jim.cooper@example.com', '874-965-6214')
INSERT INTO bright_customers VALUES(DEFAULT, 'Janice',
'Joplin', NULL, '847-666-8965')
INSERT INTO bright_customers VALUES(DEFAULT, 'Richard',
'Chip', 'richard.chip@example.com', '519-336-0545')
INSERT INTO bright_customers VALUES(DEFAULT, 'Martha',
'Erb', 'martha.erb@example.com', '651-887-9654')
INSERT INTO bright_customers VALUES(DEFAULT, 'Brent',
'Hills', 'brent.hills@example.com', NULL)
INSERT INTO bright_customers VALUES(DEFAULT, 'Freddy',
'Alfredo', 'freddy.alfredo@myexample.com', '548-588-8977')
INSERT INTO bright_customers VALUES(DEFAULT, 'Dallas',
'Tomato', 'dallas.tomato@example.com', '666-666-6666')
INSERT INTO bright_customers VALUES(DEFAULT, 'Beth', 'Cray',
'beth.cray@example.com', '845-998-4874')
INSERT INTO bright_customers VALUES(DEFAULT, 'Ezra', 'East',
'ezra.ezra@example.com', '663-954-8775')
INSERT INTO bright_customers VALUES(DEFAULT, 'Jessica',
'Jones', NULL, '874-965-3210')
INSERT INTO bright_customers VALUES(DEFAULT, 'Jordan',
'Doe', 'jordan.doe@example.com', NULL)
INSERT INTO bright_customers VALUES(DEFAULT, 'Brendan',
'Glee', 'brentan.glee@example.com', '458-966-0021')
INSERT INTO bright_customers VALUES(DEFAULT, 'Greg',
'Taylor', 'greg.taylor@example.com', '996-544-0215')
INSERT INTO bright_customers VALUES(DEFAULT, 'Luke',
'Chopp', 'luke.chopp@example.com', '845-666-4258')
INSERT INTO bright_customers VALUES(DEFAULT, 'Jesse',
'Saumers', NULL, '896-652-6545')
INSERT INTO bright_customers VALUES(DEFAULT, 'Mike',
'Moore', 'mike.moore@example.com', '547-899-6452')
```

```
-----JOBS-----
--bright_jobs (job_id, job_name, salary)
```

```
INSERT ALL
  INTO bright_jobs VALUES (003, 'Sales Associate', 45000)
  INTO bright_jobs VALUES (002, 'Sales Manager', 55000)
```

```
INTO bright_jobs VALUES (001, 'Supervisor', 60000)
SELECT * FROM DUAL;
```

```
-----EMPLOYEES-----
--bright_employees (employee_id, first_name, last_name,
soc_sec_number, birth_date, hire_date, phone_number,
manager_id, job_code)
```

```
INSERT ALL
```

```
    INTO bright_employees VALUES(200103, 'Rory', 'Cash',
345678901, '1990-03-25', '2015-03-15', 'A', '555-345-6789',
NULL, 001)
```

```
    INTO bright_employees VALUES(200115, 'Martin', 'Sheen',
567890124, '1994-03-19', '2017-12-05', 'A', '555-567-8902',
NULL, 001)
```

```
    INTO bright_employees VALUES(200105, 'Brad', 'David',
567890123, '1988-07-05', '2007-10-25', 'A', '555-567-8901',
200103, 002)
```

```
    INTO bright_employees VALUES(200106, 'Bridget',
'Carson', 678901234, '1992-01-10', '2019-01-30', 'A', '555-
678-9012', 200115, 002)
```

```
    INTO bright_employees VALUES(200109, 'Harriet',
'Harrod', 901234567, '1984-02-28', '2003-09-15', 'A', '555-
901-2345', 200115, 002)
```

```
    INTO bright_employees VALUES(200110, 'Lewis', 'Seeyus',
012345678, '1987-06-14', '2009-11-05', 'A', '555-012-3456',
200103, 002)
```

```
    INTO bright_employees VALUES(200101, 'Frank', 'Aboot',
123456789, '1980-05-15', '2005-07-10', 'A', '555-123-4567',
200105, 003)
```

```
    INTO bright_employees VALUES(200102, 'Rita', 'Wright',
234567890, '1985-12-20', '2010-09-05', 'I', '555-234-5678',
200106, 003)
```

```
    INTO bright_employees VALUES(200104, 'Quentin', 'White',
456789012, '1995-08-30', '2018-06-20', 'A', '555-456-7890',
200110, 003)
```



```
    INTO bright_employees VALUES(200107, 'Samantha', 'Lyft',
789012345, '1996-04-08', '2021-04-18', 'A', '555-789-0123',
200105, 003)
    INTO bright_employees VALUES(200108, 'Jennifer',
'Woolf', 890123456, '1999-10-22', '2022-02-20', 'A', '555-
890-1234', 200106, 003)
    INTO bright_employees VALUES(200111, 'Stephen', 'King',
123456780, '1993-11-12', '2014-04-10', 'A', '555-123-4568',
200106, 003)
    INTO bright_employees VALUES(200112, 'Jared',
'Padelecki', 234567891, '1998-08-18', '2020-07-22',
'A', '555-234-5679', 200110, 003)
    INTO bright_employees VALUES(200113, 'Jason', 'Edison',
345678902, '1989-09-28', '2006-05-30', 'A', '555-345-6780',
200105, 003)
    INTO bright_employees VALUES(200114, 'Peter', 'Griffin',
456789013, '1991-12-04', '2012-08-15', 'A', '555-456-7891',
200106, 003)
    SELECT * FROM DUAL;
```

# Sequence Statements

-----  
-----SEQUENCE STATEMENTS-----  
-----

```
CREATE SEQUENCE bright_order_id_seq  
START WITH 1000  
INCREMENT BY 1  
NOCACHE;
```

-----Order 1-----

-----INVOICE BASED OFF THIS ORDER-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
194.97, DEFAULT, 5330, 200101)
```

```
INTO bright_order_items VALUES ('K374',  
bright_order_id_seq.CURRVAL, 2)  
INTO bright_order_items VALUES ('Q25S',  
bright_order_id_seq.CURRVAL, 1)  
INTO bright_order_items VALUES ('G7P1',  
bright_order_id_seq.CURRVAL, 3)  
INTO bright_order_items VALUES ('R4L6',  
bright_order_id_seq.CURRVAL, 3)  
INTO bright_order_items VALUES ('K4F6',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 2-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
134.98, DEFAULT, 5290, 200102)
```

```
INTO bright_order_items VALUES ('A9Z1',  
bright_order_id_seq.CURRVAL, 1)
```

```
INTO bright_order_items VALUES ('R482',  
bright_order_id_seq.CURRVAL, 3)  
SELECT * FROM DUAL;
```

-----Order 3-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
164.97, DEFAULT, 5180, 200104)
```

```
INTO bright_order_items VALUES ('P3R7',  
bright_order_id_seq.CURRVAL, 1)  
INTO bright_order_items VALUES ('L1M0',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 4-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
249.97, DEFAULT, 5110, 200107)
```

```
INTO bright_order_items VALUES ('N9P1',  
bright_order_id_seq.CURRVAL, 3)  
INTO bright_order_items VALUES ('Y2X5',  
bright_order_id_seq.CURRVAL, 1)  
SELECT * FROM DUAL;
```

-----Order 5-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
79.98, DEFAULT, 5360, 200108)
```

```
INTO bright_order_items VALUES ('Z4K2',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 6-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
119.98, DEFAULT, 5240, 200111)
```

```
INTO bright_order_items VALUES ('T8L3',
bright_order_id_seq.CURRVAL, 2)
SELECT * FROM DUAL;
```

-----Order 7-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
194.97, DEFAULT, 5060, 200112)
```

```
INTO bright_order_items VALUES ('W3Q2',
bright_order_id_seq.CURRVAL, 1)
INTO bright_order_items VALUES ('M5N6',
bright_order_id_seq.CURRVAL, 3)
SELECT * FROM DUAL;
```

-----Order 8-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
119.99, DEFAULT, 5270, 200113)
```

```
INTO bright_order_items VALUES ('D1B3',
bright_order_id_seq.CURRVAL, 2)
INTO bright_order_items VALUES ('G7P1',
bright_order_id_seq.CURRVAL, 1)
SELECT * FROM DUAL;
```

-----Order 9-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
129.98, DEFAULT, 5150, 200114)
```

```
INTO bright_order_items VALUES ('K4F6',  
bright_order_id_seq.CURRVAL, 3)  
INTO bright_order_items VALUES ('Q8R2',  
bright_order_id_seq.CURRVAL, 1)  
SELECT * FROM DUAL;
```

-----Order 10-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
174.96, DEFAULT, 5090, 200101)
```

```
INTO bright_order_items VALUES ('A1D3',  
bright_order_id_seq.CURRVAL, 2)  
INTO bright_order_items VALUES ('R4L6',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 11-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
99.99, DEFAULT, 5210, 200102)
```

```
INTO bright_order_items VALUES ('K374',  
bright_order_id_seq.CURRVAL, 1)  
INTO bright_order_items VALUES ('Q25S',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 12-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
69.99, DEFAULT, 5380, 200104)
```

```
INTO bright_order_items VALUES ('A9Z1',  
bright_order_id_seq.CURRVAL, 1)
```

```
INTO bright_order_items VALUES ('R482',  
bright_order_id_seq.CURRVAL, 3)  
SELECT * FROM DUAL;
```

-----Order 13-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
124.97, DEFAULT, 5120, 200107)
```

```
INTO bright_order_items VALUES ('P3R7',  
bright_order_id_seq.CURRVAL, 2)  
INTO bright_order_items VALUES ('L1M0',  
bright_order_id_seq.CURRVAL, 1)  
SELECT * FROM DUAL;
```

-----Order 14-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
89.99, DEFAULT, 5020, 200108)
```

```
INTO bright_order_items VALUES ('N9P1',  
bright_order_id_seq.CURRVAL, 3)  
INTO bright_order_items VALUES ('Y2X5',  
bright_order_id_seq.CURRVAL, 1)  
SELECT * FROM DUAL;
```

-----Order 15-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
59.97, DEFAULT, 5040, 200111)
```

```
INTO bright_order_items VALUES ('Z4K2',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 16-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
109.96, DEFAULT, 5250, 200112)
```

```
INTO bright_order_items VALUES ('T8L3',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 17-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
74.99, DEFAULT, 5130, 200113)
```

```
INTO bright_order_items VALUES ('W3Q2',  
bright_order_id_seq.CURRVAL, 1)  
INTO bright_order_items VALUES ('M5N6',  
bright_order_id_seq.CURRVAL, 3)  
SELECT * FROM DUAL;
```

-----Order 18-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
59.98, DEFAULT, 5310, 200114)
```

```
INTO bright_order_items VALUES ('D1B3',  
bright_order_id_seq.CURRVAL, 2)  
INTO bright_order_items VALUES ('G7P1',  
bright_order_id_seq.CURRVAL, 1)  
SELECT * FROM DUAL;
```

-----Order 19-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
49.97, DEFAULT, 5070, 200101)
```

```
INTO bright_order_items VALUES ('K4F6',  
bright_order_id_seq.CURRVAL, 3)  
INTO bright_order_items VALUES ('Q8R2',  
bright_order_id_seq.CURRVAL, 1)  
SELECT * FROM DUAL;
```

-----Order 20-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
84.96, DEFAULT, 5050, 200102)
```

```
INTO bright_order_items VALUES ('A1D3',  
bright_order_id_seq.CURRVAL, 2)  
INTO bright_order_items VALUES ('R4L6',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 21-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
79.99, DEFAULT, 5220, 200104)
```

```
INTO bright_order_items VALUES ('H9K2',  
bright_order_id_seq.CURRVAL, 1)  
INTO bright_order_items VALUES ('K374',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 22-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
139.98, DEFAULT, 5100, 200107)
```

```
INTO bright_order_items VALUES ('Q25S',  
bright_order_id_seq.CURRVAL, 2)
```



```
INTO bright_order_items VALUES ('A9Z1',  
bright_order_id_seq.CURRVAL, 3)  
SELECT * FROM DUAL;
```

-----Order 23-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
129.97, DEFAULT, 5340, 200108)
```

```
INTO bright_order_items VALUES ('R482',  
bright_order_id_seq.CURRVAL, 1)  
INTO bright_order_items VALUES ('P3R7',  
bright_order_id_seq.CURRVAL, 2)  
SELECT * FROM DUAL;
```

-----Order 24-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
89.99, DEFAULT, 5190, 200111)
```

```
INTO bright_order_items VALUES ('L1M0',  
bright_order_id_seq.CURRVAL, 2)  
INTO bright_order_items VALUES ('N9P1',  
bright_order_id_seq.CURRVAL, 1)  
SELECT * FROM DUAL;
```

-----Order 25-----

```
INSERT ALL  
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,  
69.98, DEFAULT, 5170, 200112)
```

```
INTO bright_order_items VALUES ('Y2X5',  
bright_order_id_seq.CURRVAL, 1)  
INTO bright_order_items VALUES ('Z4K2',  
bright_order_id_seq.CURRVAL, 3)  
SELECT * FROM DUAL;
```

-----Order 26-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
119.98, DEFAULT, 5080, 200113)
```

```
INTO bright_order_items VALUES ('T8L3',
bright_order_id_seq.CURRVAL, 2)
INTO bright_order_items VALUES ('W3Q2',
bright_order_id_seq.CURRVAL, 1)
SELECT * FROM DUAL;
```

-----Order 27-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
99.97, DEFAULT, 5260, 200114)
```

```
INTO bright_order_items VALUES ('M5N6',
bright_order_id_seq.CURRVAL, 3)
INTO bright_order_items VALUES ('D1B3',
bright_order_id_seq.CURRVAL, 1)
SELECT * FROM DUAL;
```

-----Order 28-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
59.98, DEFAULT, 5140, 200101)
```

```
INTO bright_order_items VALUES ('G7P1',
bright_order_id_seq.CURRVAL, 2)
INTO bright_order_items VALUES ('K4F6',
bright_order_id_seq.CURRVAL, 2)
SELECT * FROM DUAL;
```

-----Order 29-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
74.97, DEFAULT, 5030, 200102)

INTO bright_order_items VALUES ('Q8R2',
bright_order_id_seq.CURRVAL, 1)
INTO bright_order_items VALUES ('A1D3',
bright_order_id_seq.CURRVAL, 3)
SELECT * FROM DUAL;
```

-----Order 30-----

```
INSERT ALL
INTO bright_orders VALUES (bright_order_id_seq.NEXTVAL,
124.96, DEFAULT, 5010, 200104)

INTO bright_order_items VALUES ('R4L6',
bright_order_id_seq.CURRVAL, 1)
INTO bright_order_items VALUES ('H9K2',
bright_order_id_seq.CURRVAL, 2)
SELECT * FROM DUAL;
```

# Constraint Testing

```
-----  
-----CONSTRAINT TESTING-----  
-----  
  
----- PK TESTING -----  
  
-- Description: Confirm primary key constraint on product_id  
column in bright_products table  
-- Expected result: Insert fails with duplicate key error  
-- Action:  
INSERT  
    INTO bright_products VALUES('K374', 'WL4001',  
'ShineBright', 'Elegant Wall Lamp', 'Wall Lamp', '12x24x8',  
'Brass', 40, 'Sconce', 49.99, 'T', 'Metal', 101);  
-- Result:  
-- ORA-00001: unique constraint  
(WKSP_LC7350F23.BRIGHT_LAMPS_PK) violated  
  
-----FK TESTING-----  
-- Description: Confirm foreign key constraint on manager_id  
column in bright_employees table  
-- Expected result: Insert fails, operation not allowed  
-- Action:  
  
-----TEST BIRTHDATE < HIREDATE-----  
  
-- Description: Confirm check constraint on birth_date  
column in bright_employees table  
-- Expected result: Operation not allowed for check  
constraint  
-- Action:  
  
INSERT INTO bright_employees VALUES  
    (210115, 'Brad', 'David', '567890122', '2024-07-05',  
'2007-10-25', 'A', '555-567-8901', 200103, 002)
```

```
-- Result:  
-- ORA-02290: check constraint  
(WKSP_LC7350F23.BRIGHT_EMPLOYEES_HIREBIRTHDATECK) violated
```

```
-----TEST SALARY < 100 000.00-----
```

```
-- Description: Confirm check constraint on salary column in  
bright_jobs table  
-- Expected result: Operation not allowed for check  
constraint  
-- Action:
```

```
DROP TABLE bright_jobs CASCADE CONSTRAINTS;  
CREATE TABLE bright_jobs (  
    job_id          INTEGER NOT NULL,  
    job_name        VARCHAR(255) NOT NULL,  
    salary          DECIMAL (10,2) NOT NULL  
);
```

```
ALTER TABLE bright_jobs  
    ADD CONSTRAINT bright_employees_salaryck  
    CHECK (salary<100000.00);
```

```
INSERT INTO bright_jobs VALUES  
(001, 'Supervisor', 1200000);
```

```
--Result:  
--ORA-02290: check constraint  
(WKSP_LC7350F23.BRIGHT_EMPLOYEES_SALARYCK) violated
```

```
-----TEST SOC BETWEEN 1 AND 999999999-----
```

```
-- Description: Confirm check constraint on soc_sec_no  
column in bright_employees table  
-- Expected result: Operation not allowed for check  
constraint  
-- Action:
```

```
INSERT INTO bright_employees VALUES
  (210115, 'Brad', 'David', 5567890122, '2024-07-05',
  '2007-10-25', 'A', '555-567-8901', 200103, 002);
```

```
-- RESULT:
-- [ORA-02290: check constraint
(WKSP_LC7350F23.BRIGHT_EMPLOYEES_SOC_NOCK) violated
```

```
-----TEST QUANTITY > 0 -----
```

```
-- Description: Confirm check constraint on quantity column
in bright_order_items table
-- Expected result: Operation not allowed for check
constraint
-- Action:
```

```
DROP TABLE bright_order_items CASCADE CONSTRAINTS;
CREATE TABLE bright_order_items (
  product_id      VARCHAR (5) NOT NULL,
  order_id        INTEGER NOT NULL,
  quantity        DECIMAL (2) NOT NULL);
```

```
ALTER TABLE bright_order_items
  ADD CONSTRAINT bright_order_items_quantck
  CHECK (quantity > 0);
```

```
INSERT INTO bright_order_items VALUES
  ('G7P1', 1111, 0);
```

```
--RESULT:
--ORA-02290: check constraint
(WKSP_LC7350F23.BRIGHT_ORDER_ITEMS_QUANTCK) violated
```

```
-----TEST QUANTITY < 10 -----
```

```
-- Description: Confirm check constraint on quantity column
in bright_order_items table
```

```
-- Expected result: Operation not allowed for check
constraint
-- Action:
```

```
DROP TABLE bright_order_items CASCADE CONSTRAINTS;
CREATE TABLE bright_order_items (
  product_id      VARCHAR (5) NOT NULL,
  order_id        INTEGER NOT NULL,
  quantity        DECIMAL (2) NOT NULL);
```

```
ALTER TABLE bright_order_items
  ADD CONSTRAINT bright_order_items_quantck
  CHECK (quantity < 10);
```

```
INSERT INTO bright_order_items VALUES
  ('G7P1', 1111, 20);
```

```
--RESULT:
-- ORA-02290: check constraint
(WKSP_LC7350F23.BRIGHT_ORDER_ITEMS_QUANTCK2) violated
```

```
-----TEST SWITCH TYPE CONSTRAINT-----
```

```
-- Description: Confirm check constraint on switch_type
column in bright_products table
-- Expected result: Operation not allowed for check
constraint
-- Action:
```

```
INSERT INTO bright_products VALUES
  ('L1M0', 'WL4002', 'ShineBright', 'Contemporary Wall
Sconce', 'Wall Lamp', '14x28x14', 'Gold', 45, 'Cone', 54.99,
'Z', 'Metal', 106);
```

```
--RESULT:
--ORA-02290: check constraint
(WKSP_LC7350F23.BRIGHT_PRODUCTS_SWITCH_CK) violated
```

-----TEST BOOLEAN CONSTRAINT-----

-- Description: Confirm check constraint on job\_status  
column in bright\_employees table

-- Expected result: Operation not allowed for check  
constraint

-- Action:

INSERT INTO bright\_employees VALUES

(200117, 'Samantha', 'Lyft', '789012344', '1996-04-08',  
'2021-04-18', 'Z', '555-789-0123', 200105, 003);

--RESULT:

--ORA-02290: check constraint

(WKSP\_LC7350F23.BRIGHT\_EMPLOYEES\_JOBSTATUS) violated