

## 1) Overview

Dragon Traders is a fictitious company that I created. Dragon Traders imports and exports specialty foods from around the world. The objectives of the Dragon's Traders database are to manage customers, employees, products, shippers, suppliers, and orders. The Dragon Traders final database has 8 tables, those are:

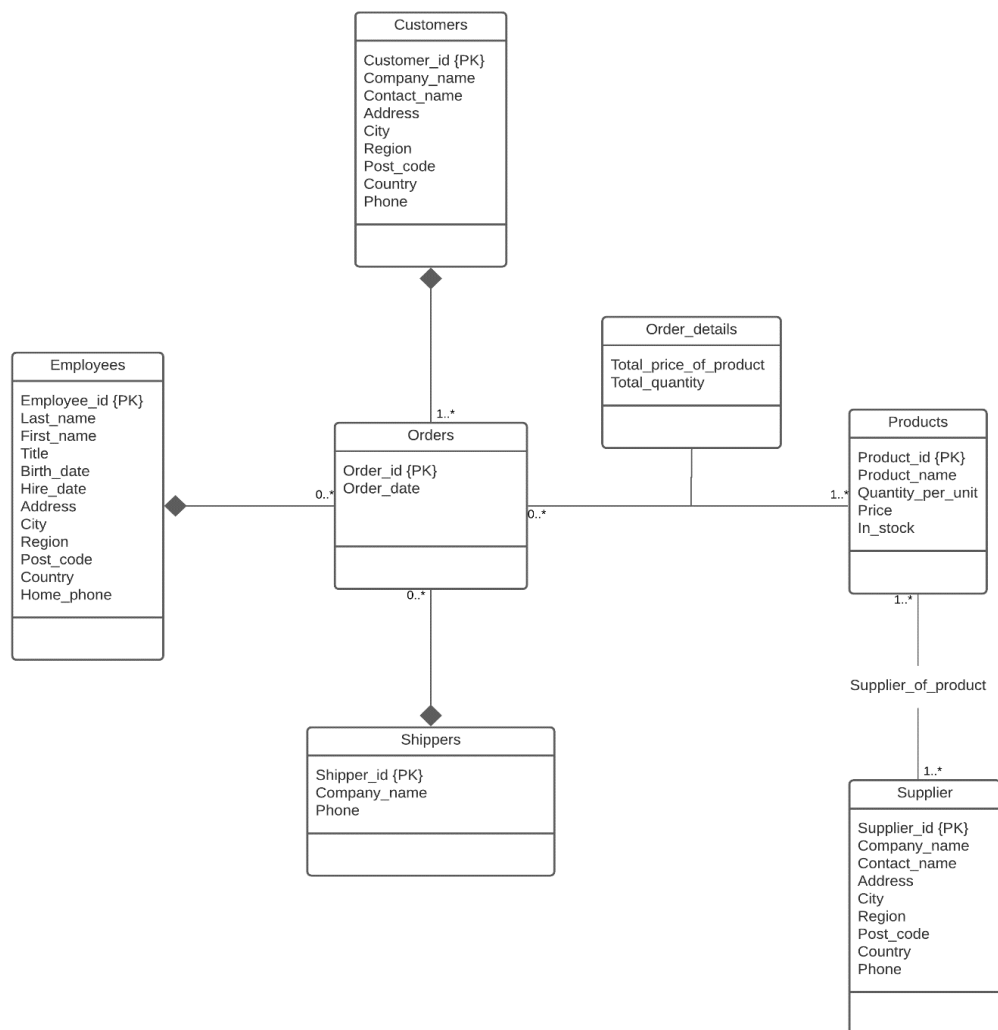
- **Customers (Entity Type):** Customers who buy products from Dragon Traders.
- **Suppliers (Entity Type):** Vendors and suppliers of Dragon Traders' products.
- **Employees (Entity Type):** Employee details of Dragon Traders.
- **Products (Entity Type):** Information of the products.
- **Shippers (Entity Type):** The information about the shippers who ship the products from the traders to the user/end-customers.
- **Orders (Entity Type):** Information about the sales order transactions.
- **Order\_details (Relationship Type):** The information about the total quantity and total price of each product for each order.
- **Supplier\_of\_product (Relationship Type):** Connecting supplier table with product table to indicate suppliers for each product.

Initially, the database I used at the milestone 1 only have 7 tables. The products table is in 1NF because in Product table there is an attribute named supplier\_id. The supplier\_id is part of the candidate key for Products table that is {Product\_id, Supplier\_id}+. However, the other non-prime attribute can only be determined by product\_id but not by supplier\_id. Therefore, there are partial dependencies on the Products table, and it does not meet the requirements for 2NF. Thus, I applied normalization and created a new table named "Supplier\_of\_product" to connect the product table with the supplier table. Moreover, I also removed supplier\_id from the Products table. Finally, all the data is in BCNF. The explanation below will explain why every table is in BCNF:

- **Customer:** customer\_id is the only candidate key and determinant in all FDs. Therefore, customers relation is in BCNF.
- **Orders:** order\_id is the only candidate key and determinant in all FDs. Therefore, orders relation is in BCNF.
- **Employees:** employee\_id is the only candidate key and determinant in FDs. Therefore, employees relation is in BCNF.
- **Products:** product\_id is the only candidate key and determinant in FDs. Therefore, products relation is in BCNF.
- **Shippers:** shipper\_id is the only candidate key and determinant in FDs. Therefore, shippers relation is in BCNF.
- **Supplier:** supplier\_id is the only candidate key and determinant in FDs. Therefore, supplier relation is in BCNF.
- **Order\_details:** order\_id and product\_id is the only candidate key and determinant in FDs. Therefore, order\_details relation is in BCNF.
- **Supplier\_of\_product:** product\_id and supplier\_id is the only candidate key and there is no FD. Therefore, the supplier\_of\_product relation is in BCNF.

## 2) Final database schema

## UML Diagram



## Schema

Customers(Customer\_id, Company\_name, Contact\_name, Address, City, Region, Post\_code, Country, Phone)

Employees(Employee\_id, Last\_name, First\_name, Title, Birth\_date, Hire\_date, Address, City, Region, Post\_code, Country, Home\_phone)

Shippers(Shipper\_id, Company\_name, Phone)

Products(Product\_id, Product\_name, Quantity\_per\_unit, Price, In\_stock)

Supplier(Supplier\_id, company\_name, Contact\_name, Address, City, Region, Post\_code, Country, Phone)

Orders(Order\_id, Customer\_id\*, Employee\_id\*, Shipper\_id\*, Order\_date)

Order\_details(Order\_id\*, Product\_id\*, Total\_price\_of\_product, Total\_quantity)

Supplier\_of\_product(Product\_id\*, Supplier\_id\*)

## 3) Data Analysis Task

1. Output all information about customers who are located in the USA. (Easy)

```
SELECT *  
FROM Customers  
WHERE Country = 'USA';
```

2. Find the product whose name has the string "Choco". Output the Product id and Product name. (Easy)

```
SELECT Product_id, Product_name  
FROM Products  
WHERE Product_name LIKE '%Choco%';
```

3. Output all the information about the supplier that supplies a product name "Ipoh Coffee". (Medium)

```
SELECT *  
FROM Supplier, Products, Supplier_of_product  
WHERE Supplier.Supplier_id = Supplier_of_product.Supplier_id AND  
Products.Product_id = Supplier_of_product.Product_id AND Product_name = 'Ipoh  
Coffee';
```

4. Count how many orders that have been shipped by a shipper company name Lightning PTY Ltd. Output the shipper id, company name, and total order shipped. (Medium)

```
SELECT S.Shipper_id, S.Company_name, COUNT(order_id) AS Total_OrderShipped  
FROM Orders AS O  
INNER JOIN Shippers AS S ON O.shipper_id = S.Shipper_id  
WHERE S.Company_name = 'Lightning PTY Ltd';
```

5. Look for a customer that have order more than one time and live in Brazil. OUTPUT the Customer id, Company\_name, and total number of orders. (Medium)

```
SELECT C.Customer_id, C.Company_name, COUNT(O.order_id) AS Total_order  
FROM Orders AS O  
INNER JOIN Customers AS C ON O.Customer_id = C.Customer_id  
WHERE C.Country = 'Brazil'  
GROUP BY C.Customer_id, C.Company_name  
HAVING COUNT(O.Order_id) > 1;
```

6. Output product id and product name that is supplied by company name Bigfoot Breweries. (Medium)

```
SELECT P.Product_id, P.Product_name  
FROM Products AS P  
INNER JOIN Supplier_of_product AS SOP ON P.Product_id = SOP.Product_id  
WHERE SOP.Supplier_id = (SELECT Supplier_id  
FROM Supplier AS S  
WHERE S.Company_name = 'Bigfoot Breweries');
```

7. Output all the information about a product that have never been ordered and still have more than 50 units in stocks. (Medium)

```

SELECT *
FROM Products AS P
WHERE In_stock > 50 AND NOT EXISTS
(SELECT *
FROM Order_details AS OD
WHERE P.Product_id = OD.Product_id);

```

8. Look for how many orders served by an employee name 'Karen Tanjung'. (Medium)

```

SELECT E.Employee_id, E.Last_name, E.First_name, COUNT(O.Employee_id) AS
Total_order_served
FROM Employees AS E
INNER JOIN Orders AS O ON E.Employee_id = O.Employee_id
WHERE E.Last_name = 'Karen' AND E.First_name = 'Tanjung'
GROUP BY E.Employee_id, E.Last_name, E.First_name;

```

9. Find the customer who has the most expensive order in the database (Medium)

```

SELECT C.Customer_id, C.Company_name
FROM Customers AS C
INNER JOIN Orders AS O ON C.Customer_id = O.Customer_id
WHERE Order_id IN (SELECT order_id
FROM (SELECT Order_id, MAX(summation.Total_order)
FROM (SELECT Order_id, SUM(Total_price_of_product) AS Total_order
FROM Order_details
GROUP BY Order_id) AS summation));

```

10. Look for an **order** that is serve by employee with first name 'Nancy', shipped by company name 'speedy express', and have product name like 'Ipoh'. Output the Order\_id, customer\_id, company\_name, contact\_name and phone number. (Advanced)

```

SELECT O.Order_id, C.Customer_id, C.Company_name, C.Contact_name,
C.Country, C.Phone
FROM Orders AS O, Order_details AS OD, Employees AS E, Shippers AS S,
Products AS P, Customers AS C
WHERE O.Order_id = OD.Order_id AND OD.Product_id = P.Product_id AND
O.Customer_id = C.Customer_id AND O.Shipper_id = S.Shipper_id AND
E.Employee_id = O.Employee_id
AND E.First_name = 'Nancy' AND S.Company_name = 'Speedy Express' AND
P.Product_name LIKE '%Ipoh%';

```

#### 4) Discussion

The limitation for the Dragon Traders database currently in use is that one order can only be served by one employee and not more. In the real business world, a big order sometimes requires more than one person to manage and sometimes it also takes several days to complete.

The future work that needs to be enhanced from this database is how to make multiple employees able to manage one order at different times and days. As the company get bigger, the orders will also get bigger. Therefore, enhancement of the current database is certainly something that needs to be done in the future.

## 5) Appendix

Data Definition Language (DDL) and Sample data (> 10 rows).

### Customers Table

```
CREATE TABLE Customers (  
Customer_id INTEGER PRIMARY KEY,  
Company_name NVARCHAR (40),  
Contact_name NVARCHAR (30),  
Address NVARCHAR (60),  
City NVARCHAR (15),  
Region NVARCHAR (15),  
Post_code NVARCHAR (10),  
Country NVARCHAR (15),  
Phone NVARCHAR (24)  
);
```

Filter data										Total rows loaded: 32
Customer_id	Company_name	Contact_name	Address	City	Region	Post_code	Country	Phone		
1	Wolski Zajazd	Zybszek Piastreszeniewicz	ul. Filtrowa 68	Warszawa	NULL	01-012	Poland	(26) 642-7012		
2	Wilman Kala	Matti Karttunen	Keskuskatu 45	Helsinki	NULL	21240	Finland	90-224 8858		
3	White Clover Markets	Karl Jablonski	305 - 14th Ave. S. Suite 3B	Seattle	WA	98128	USA	(206) 555-4112		
4	Wellington Importadora	Paula Parente	Rua do Mercado, 12	Resende	SP	08737-363	Brazil	(14) 555-8122		
5	Wartian Herkku	Pirkko Koskitalo	Torikatu 38	Oulu	NULL	90110	Finland	981-443655		
6	Die Wandernde Kuh	Rita Müller	Adenauerallee 900	Stuttgart	NULL	70563	Germany	0711-020361		
7	Vins et alcools Chevalier	Paul Henriot	59 rue de l'Abbaye	Reims	NULL	51100	France	26.47.15.10		
8	Shelby limited	Thomas Shelby	58 new street	Birmingham	NULL	NULL	UK	(44) 7911-123456		
9	Tortuga Restaurante	Miguel Angel Paolino	Avda. Azteca 123	México D.F.	NULL	05033	Mexico	(5) 555-2933		
10	Toms Spezialitäten	Karin Josephs	Luisenstr. 48	Münster	NULL	44087	Germany	0251-031259		
11	The Cracker Box	Liu Wong	55 Grizzly Peak Rd.	Butte	MT	59801	USA	(406) 555-5834		
12	Suprêmes délices	Pascale Cartrain	Boulevard Tirou, 255	Charleroi	NULL	B-6000	Belgium	(071) 23 67 22 20		
13	Split Rail Beer & Ale	Art Braunschweiger	P.O. Box 555	Lander	WY	82520	USA	(307) 555-4680		
14	Spécialités du monde	Dominique Perrier	25, rue Lauriston	Paris	NULL	75016	France	(1) 47.55.60.10		
15	Simons bistro	Jytte Petersen	Vindhuset 34	København	NULL	1734	Denmark	31 12 34 56		
16	Seven Seas Imports	Hari Kumar	90 Wadhurst Rd.	London	NULL	OX15 4NB	UK	(171) 555-1717		
17	Save-a-lot Markets	Jose Pavarotti	187 Suffolk Ln.	Boise	ID	83720	USA	(208) 555-8097		
18	Santitas Gourmet	Jonas Bergulfsen	Erling Skakkes gate 78	Stavang	NULL	4110	Norway	07-98 92 35		
19	Romero y tomillo	Alejandra Camino	Gran Vía, 1	Madrid	NULL	28001	Spain	(91) 745 6200		
20	Richter Supermarkt	Michael Holz	Grenzacherweg 237	Genève	NULL	1203	Switzerland	0897-034214		
21	Ricardo Adocicados	Janete Limeira	Av. Copacabana, 267	Rio de Janeiro	RJ	02389-890	Brazil	(21) 555-3412		
22	Reggiani Caseifici	Maurizio Moroni	Strada Provinciale 124	Reggio Emilia	NULL	42100	Italy	0522-556721		
23	Rattlesnake Canyon Grocery	Paula Wilson	2817 Milton Dr.	Albuquerque	NM	87110	USA	(505) 555-5939		
24	Rancho grande	Sergio Gutierrez	Av. del Libertador 900	Buenos Aires	NULL	1010	Argentina	(1) 123-5555		
25	QUICK-Stop	Horst Kloss	Taucherstraße 10	Cunewalde	NULL	01307	Germany	0372-035188		
26	Queen Cozinha	Lúcia Carvalho	Alameda dos Canoários, 891	Sao Paulo	SP	05487-020	Brazil	(11) 555-1189		
27	Que Delícia	Bernardo Batista	Rua da Panificadora, 12	Rio de Janeiro	RJ	02389-673	Brazil	(21) 555-4252		
28	Princesa Isabel Vinhos	Isabel de Castro	Estrada da saude n. 58	Lisboa	NULL	1756	Portugal	(1) 356-5634		
29	Piccolo und mehr	Georg Pipps	Geisweg 14	Salzburg	NULL	5020	Austria	6562-9722		
30	Pericles Comidas clásicas	Guillermo Fernández	Calle Dr. Jorge Cash 321	México D.F.	NULL	05033	Mexico	(5) 552-3745		
31	Paris spécialités	Marie Bertrand	265, boulevard Charonne	Paris	NULL	75012	France	(1) 42.34.22.66		

### Suppliers Table

```
CREATE TABLE Supplier (  
Supplier_id INTEGER PRIMARY KEY,  
Company_name NVARCHAR (40),  
Contact_name NVARCHAR (30),  
Address NVARCHAR (60),  
City NVARCHAR (15),  
Region NVARCHAR (15),  
Post_code NVARCHAR (10),  
Country NVARCHAR (15),  
Phone NVARCHAR (24)  
);
```

	Supplier_id	Company_name	Contact_name	Address	City	Region	Post_code	Country	Phone
1	100001	Gai p•turtage	Eliane Noz	Bat. B3, rue des Alpes	Annecy	NULL	74000	France	38.76.98.06
2	100002	Escargots Nouveaux	Marie Delamare	22, rue H. Voiron	Montceau	NULL	71300	France	85.57.00.07
3	100003	Pasta Buttini s.r.l.	Giovanni Giudici	Via dei Gelsomini, 153	Salerno	NULL	84100	Italy	(089) 6547665
4	100004	Ma Maison	Jean-Guy Lauzon	2960 Rue St. Laurent	Montr•al	Qu•bec	H1J 1C3	Canada	(514) 555-9022
5	100005	G'day, Mate	Wendy Mackenzie	170 Prince Edward Parade Hunter's Hill	Sydney	NSW	2042	Australia	(02) 555-5914
6	100006	Karkki Oy	Anne Heikkinen	Valtakatu 12	Lappeenranta	NULL	53120	Finland	(953) 10956
7	100007	Zaanse Snoepfabriek	Dirk Luchte	Verkoop Rijnweg 22	Zaandam	NULL	9999 ZZ	Netherlands	(12345) 1212
8	100008	Lyngbysild	Niels Petersen	Lyngbysild Fiskebakken 10	Lyngby	NULL	2800	Denmark	43844108
9	100009	Leka Trading	Chandra Leka	471 Serangoon Loop, Suite #402	Singapore	NULL	0512	Singapore	555-8787
10	100010	Aux joyeux eccl•siastiques	Guy•ne Nodier	203, Rue des Francs-Bourgeois	Paris	NULL	75004	France	(1) 03.83.00.68
11	100011	Svensk Sj•f•da AB	Michael Bj•rn	Brovallav•gen 231	Stockholm	NULL	S-123 45	Sweden	08-123 45 67
12	100012	Bigfoot Breweries	Cheryl Saylor	3400 - 8th Avenue Suite 210	Bend	OR	97101	USA	(503) 555-9931
13	100013	Norske Meierier	Beate Vileid	Hatlevegen 5	Sandvika	NULL	1320	Norway	(0)2-953010
14	100014	Formaggi Fortini s.r.l.	Elio Rossi	Viale Dante, 75	Ravenna	NULL	48100	Italy	(0544) 60323
15	100015	Plutzer Lebensmittelgro•m•rkte AG	Martin Bein	Bogenallee 51	Frankfurt	NULL	60439	Germany	(069) 992755
16	100016	Heli S•ffwaren GmbH & Co. KG	Petra Winkler	Tiergartenstra•e 5	Berlin	NULL	10785	Germany	(010) 9984510
17	100017	Refrescos Americanas LTDA	Carlos Diaz	Av. das Americanas 12.890	S•o Paulo	NULL	5442	Brazil	(11) 555 4640
18	100018	PB Kn•ckebed AB	Lars Peterson	Kaloadagatan 13	G•teborg	NULL	S-345 67	Sweden	031-987 65 43
19	100019	Specialty Biscuits, Ltd.	Peter Wilson	29 King's Way	Manchester	NULL	M14 GSD	UK	(161) 555-4448
20	100020	Pavlova, Ltd.	Ian Devling	74 Rose St.Moonie Ponds	Melbourne	Victoria	3058	Australia	(03) 444-2343
21	100021	Grandma Kelly's Homestead	Regina Murphy	707 Oxford Rd.	Ann Arbor	MI	48104	USA	(313) 555-5735

Shippers Table

CREATE TABLE Shippers (  
Shipper\_id INTEGER PRIMARY KEY,  
Company\_name NVARCHAR (40),  
Phone NVARCHAR (24)  
);

	Shipper_id	Company_name	Phone
1	1	Federal Shipping	(503) 555-9931
2	2	United Package	(503) 555-3199
3	3	Speedy Express	(503) 555-9831
4	4	MSC PTY Ltd	(503) 555-3231
5	5	OOCL PTY Ltd	(503) 555-2313
6	6	Dykom Shipping	(503) 555-8532
7	7	Lightning PTY Ltd	(503) 555-1217
8	8	Windrun Package	(503) 555-8853
9	9	The One Express	(503) 555-2231
10	10	Andty Express	(503) 555-3411
11	11	Garfield PTY Ltd	(503) 555-6612
12	12	Pack & Send PTY Ltd	(503) 555-1357

Products Table

CREATE TABLE Products (  
Product\_id INTEGER PRIMARY KEY,  
Product\_name NVARCHAR (40),  
Quantity\_per\_unit TEXT ,  
Price MONEY,  
In\_stock INTEGER  
);

	Product_id	Product_name	Quantity_per_unit	Price	In_stock
1	1	Original Frankfurter gr•ne S••e	12 boxes	13	32
2	2	Lakkalikv•ri	500 ml	18	57
3	3	Rh•nbr•u Klosterbier	24 - 0.5 l bottles	7.75	125
4	4	Longlife Tofu	5 kg pkg.	10	4
5	5	R•d Kaviar	24 - 150 g jars	15	101
6	6	Mozzarella di Giovanni	24 - 200 g pkgs.	34.8	14
7	7	Flotemysost	10 - 500 g pkgs.	21.5	26
8	8	Outback Lager	24 - 355 ml bottles	15	15
9	9	Gudbrandsdalsost	10 kg pkg.	36	26
10	10	Scottish Longbreads	10 boxes x 8 pieces	12.5	6
11	11	Laughing Lumberjack Lager	24 - 12 oz bottles	14	52
12	12	Louisiana Hot Spiced Okra	24 - 8 oz jars	17	4
13	13	Louisiana Fiery Hot Pepper Sauce	32 - 8 oz bottles	21.05	76
14	14	Wimmers gute Semmelkn•del	20 bags x 4 pieces	33.25	22
15	15	Veggie-spread	15 - 625 g jars	43.9	24
16	16	Tarte au sucre	48 pies	49.3	17
17	17	Sirop d'•rable	24 - 500 ml bottles	28.5	113
18	18	Camembert Pierrot	15 - 300 g rounds	34	19
19	19	Raclette Courdavault	5 kg pkg.	55	79
20	20	Escargots de Bourgogne	24 pieces	13.25	62
21	21	Ravioli Angelo	24 - 250 g pkgs.	19.5	36
22	22	Gnocchi di nonna Alice	24 - 250 g pkgs.	38	21
23	23	Tourti•re	16 pies	7.45	21
24	24	Perth Pasties	48 pieces	32.8	0
25	25	Filo Mix	16 - 2 kg boxes	7	38
26	26	Manjimup Dried Apples	50 - 300 g pkgs.	53	20
27	27	Valkoinen suklaa	12 - 100 g bars	16.25	65
28	28	Chocolade	10 pkgs.	12.75	15
29	29	Zaanse koeken	10 - 4 oz boxes	9.5	36
30	30	Gula Malacca	20 - 2 kg bags	19.45	27
31	31	Ipoh Coffee	16 - 500 g tins	46	17

## Employees Table

```
CREATE TABLE Employees (  
Employee_id INTEGER PRIMARY KEY,  
Last_name NVARCHAR (20),  
First_name NVARCHAR (10),  
Title NVARCHAR (30),  
Birth_date DATETIME,  
Hire_date DATETIME,  
Address NVARCHAR (60),  
City NVARCHAR (15),  
Region NVARCHAR (15),  
Post_code NVARCHAR (10),  
Country NVARCHAR (15),  
Home_phone NVARCHAR (24)  
);
```

	Employee_id	Last_name	First_name	Title	Birth_date	Hire_date	Address	City	Region	Post_code	Country	Home_phone
1	100	Dodsworth	Anne	Sales Representative	1966-01-27	1994-11-15	7 Houndstooth Rd.	London	NULL	WG2 7LT	UK	(71) 555-4444
2	101	Callahan	Laura	Inside Sales Coordinator	1958-01-09	1994-03-05	4726 - 11th Ave. N.E.	Seattle	WA	98105	USA	(206) 555-1189
3	102	King	Robert	Sales Representative	1960-05-29	1994-01-02	Edgeham Hollow Winchester Way	London	NULL	RG1 9SP	UK	(71) 555-5598
4	103	Suyama	Michael	Sales Representative	1963-07-02	1993-10-17	Coventry House Miner Rd.	London	NULL	EC2 7JR	UK	(71) 555-7773
5	104	Buchanan	Steven	Sales Manager	1955-03-04	1993-10-17	14 Garrett Hill	London	NULL	SW1 8JR	UK	(71) 555-4848
6	105	Peacock	Margaret	Sales Representative	1937-09-19	1993-05-03	4110 Old Redmond Rd.	Redmond	WA	98052	USA	(206) 555-8122
7	106	Leverling	Janet	Sales Representative	1963-08-30	1992-04-01	722 Moss Bay Blvd.	Kirkland	WA	98033	USA	(206) 555-3412
8	107	Fuller	Andrew	Vice President, Sales	1952-02-19	1992-08-14	908 W. Capital Way	Tacoma	WA	98401	USA	(206) 555-9482
9	108	Davolio	Nancy	Sales Representative	1948-12-08	1992-05-01	507 - 20th Ave. E.Apt. 2A	Seattle	WA	98122	USA	(206) 555-9857
10	109	Trinity	Divine	Data Analyst	1998-07-28	2019-03-21	2176/221 Russell Street	Melbourne	VIC	3000	Australia	0420835484
11	110	Calista	Evelyn	Software Engineer	1975-03-12	2001-06-23	Pondok Indah damai 3	Jakarta	NULL	31351	Indonesia	08128349383
12	111	Lim	Robert	Tech Lead	1983-03-27	2008-07-03	311/27 Kings street	Melbourne	VIC	3000	Australia	(61) 420-738989
13	112	West	Brook	System Accountant	1958-03-21	1972-09-22	313 W.Capital Way	Tacoma	WA	98401	USA	(206) 555-3138
14	113	Kiyosaki	Don	Business Analyst	1973-09-11	1993-01-18	111 Durken Lane	Kirkland	SA	98123	USA	(206) 555-6139
15	114	May	Shibuya	Sales Representative	1962-03-03	1986-06-30	210-11th Ave E.Apt. 3A	Seattle	WA	98321	USA	(206) 555-3133
16	115	Karen	Tanjung	Sales Representative	1968-06-22	1990-01-29	110-7th Ave E.Apt 8A	Seattle	WA	98321	USA	(206) 555-2726

## Orders Table

```
CREATE TABLE Orders (  
Order_id INTEGER PRIMARY KEY,  
Customer_id INTEGER,  
Employee_id INTEGER,  
Shipper_id INTEGER,  
Order_date DATETIME,  
FOREIGN KEY (Customer_id)  
)  
REFERENCES Customers (Customer_id) ON UPDATE CASCADE  
ON DELETE CASCADE,  
FOREIGN KEY (Employee_id)  
)  
REFERENCES Employees (Employee_id) ON UPDATE CASCADE  
ON DELETE CASCADE,  
FOREIGN KEY (Shipper_id)  
)  
REFERENCES Shippers (Shipper_id) ON UPDATE CASCADE  
ON DELETE CASCADE  
);
```

	Order_id	Customer_id	Employee_id	Shipper_id	Order_date
1	100001	32	100	12	1998-05-06 00:00:00.000
2	100002	31	101	11	1998-05-06 00:00:00.000
3	100003	30	102	10	1998-06-03 00:00:00.000
4	100004	29	103	9	1998-05-06 00:00:00.000
5	100005	28	104	8	1998-05-05 00:00:00.000
6	100006	29	105	9	1998-05-05 00:00:00.000
7	100007	27	106	7	1998-05-05 00:00:00.000
8	100008	26	107	6	1998-05-05 00:00:00.000
9	100009	25	108	5	1998-05-04 00:00:00.000
10	100010	24	107	4	1998-05-04 00:00:00.000
11	100011	23	108	3	1998-05-04 00:00:00.000
12	100012	22	109	2	1998-05-01 00:00:00.000
13	100013	21	110	1	1996-07-04 00:00:00.000
14	100014	20	111	6	1996-08-01 00:00:00.000
15	100015	21	112	2	1996-08-01 00:00:00.000
16	100016	22	113	8	1996-08-02 00:00:00.000
17	100017	23	114	11	1996-08-05 00:00:00.000
18	100018	19	115	12	1996-08-06 00:00:00.000
19	100019	18	114	3	1996-08-07 00:00:00.000
20	100020	17	101	9	1996-08-08 00:00:00.000
21	100021	16	103	3	1996-08-09 00:00:00.000
22	100022	15	100	2	1996-08-12 00:00:00.000
23	100023	14	107	6	1996-08-13 00:00:00.000
24	100024	13	103	9	1996-08-14 00:00:00.000
25	100025	12	115	10	1996-08-14 00:00:00.000
26	100026	11	110	1	1996-08-15 00:00:00.000
27	100027	10	104	8	1996-08-19 00:00:00.000
28	100028	9	100	7	1996-08-23 00:00:00.000
29	100029	8	101	2	1996-08-26 00:00:00.000
30	100030	7	102	9	1996-08-27 00:00:00.000
31	100031	6	112	4	1996-08-27 00:00:00.000

### Supplier of product Table

```

CREATE TABLE Supplier_of_product (
Product_id INTEGER NOT NULL,
Supplier_id INTEGER NOT NULL,
PRIMARY KEY (
Product_id,
Supplier_id
),
FOREIGN KEY (
Product_id
)
REFERENCES Products (Product_id) ON UPDATE CASCADE
ON DELETE CASCADE,
FOREIGN KEY (
Supplier_id
)
REFERENCES Supplier (Supplier_id) ON UPDATE CASCADE
ON DELETE CASCADE
);

```

	Product_id	Supplier_id
1	1	100021
2	1	100002
3	2	100001
4	2	100009
5	3	100020
6	4	100002
7	5	100019
8	6	100003
9	7	100018
10	8	100004
11	9	100005
12	10	100006
13	11	100007
14	12	100004
15	13	100009
16	14	100010
17	15	100011
18	16	100012
19	17	100013
20	18	100014
21	19	100015
22	20	100016
23	21	100017
24	22	100012
25	23	100003
26	24	100003
27	25	100011
28	26	100009
29	27	100005
30	28	100006
31	29	100016



## Order\_details Table

```
CREATE TABLE Order_details (  
  Order_id INTEGER,  
  Product_id INTEGER NOT NULL,  
  Total_price_of_product MONEY,  
  Total_quantity TEXT,  
  PRIMARY KEY (  
    Order_id,  
    Product_id  
  ),  
  FOREIGN KEY (  
    Order_id  
  )  
  REFERENCES Orders (Order_id) ON UPDATE CASCADE  
  ON DELETE CASCADE,  
  FOREIGN KEY (  
    Product_id  
  )  
  REFERENCES Products (Product_id) ON UPDATE CASCADE  
  ON DELETE CASCADE  
);
```

	Order_id	Product_id	Total_price_of_product	Total_quantity
1	100001	43	93	300 ml jar
2	100002	42	194	1000 g pkgs
3	100003	41	40	12 - 12 oz jars
4	100004	40	60	2 lb pkgs
5	100005	39	50	16 oz jars
6	100006	38	66	64 oz jars
7	100008	36	38	24 oz bottles
8	100008	34	36.8	16 oz tins
9	100009	33	19.3	24 oz cans
10	100010	32	42	3 kg pkgs
11	100011	31	92	1000 g tins
12	100012	30	19.45	2 kg bags
13	100013	29	9.5	4 oz boxes
14	100014	28	12.75	10 pkgs
15	100015	27	16.25	200 g bars
16	100016	26	159	900 g pkgs
17	100017	25	14	4 kg boxes
18	100018	24	32.8	48 pieces
19	100019	23	14.9	16 pies
20	100020	22	76	500 g pkgs
21	100021	21	19.5	250 g pkgs
22	100022	20	13.25	24 pieces
23	100023	19	275	25 kg pkg
24	100024	18	102	900 g rounds
25	100025	17	28.5	500 ml bottles
26	100026	16	98.6	96 pies
27	100027	15	43.9	625 g jars
28	100028	14	99.75	60 bags x 4 pieces
29	100029	13	42.1	16 oz bottles
30	100030	12	17	8 oz jars
31	100031	11	42	36 oz bottles