Employee

emp_id	first_name	last_name	birth_date	sex	salary	super_id	branch_id
100	David	Wallace	1967-11-17	M	250,000	NULL	1
101	Jan	Levinson	1961-05-11	F	110,000	100	1
102	Michael	Scott	1964-03-15	M	75,000	100	2
103	Angela	Martin	1971-06-25	F	63,000	102	2
104	Kelly	Kapoor	1980-02-05	F	55,000	102	2
105	Stanley	Hudson	1958-02-19	M	69,000	102	2
106	Josh	Porter	1969-09-05	M	78,000	100	3
107	Andy	Bernard	1973-07-22	M	65,000	106	3
108	Jim	Halpert	1978-10-01	M	71,000	106	3

Branch

branch_id	branch_name	mgr_id	mgr_start_date
1	Corporate	100	2006-02-09
2	Scranton	102	1992-04-06
3	Stamford	106	1998-02-13

Client

client_id	client_name	branch_id
400	Dunmore Highschool	2
401	Lackawana Country	2
402	FedEx	3
403	John Daly Law, LLC	3
404	Scranton Whitepages	2
405	Times Newspaper	3
406	FedEx	2

Works_With

emp_id	client_id	total_sales
105	400	55,000
102	401	267,000
108	402	22,500
107	403	5,000
108	403	12,000
105	404	33,000
107	405	26,000
102	406	15,000
105	406	130,000

Branch Supplier

branch_id	supplier_name	supply_type
2	Hammer Mill	Paper
2	Uni-ball	Writing Utensils
3	Patriot Paper	Paper
2	J.T. Forms & Labels	Custom Forms
3	Uni-ball	Writing Utensils
3	Hammer Mill	Paper
3	Stamford Lables	Custom Forms

Labels

	Primary Key
	Foreign Key
	Attribute

```
---making the database
CREATE TABLE employee (
    emp_id INT PRIMARY KEY,
    first_name VARCHAR(40),
    last_name VARCHAR(40),
    birth_day DATE,
    sex VARCHAR(1),
    salary INT,
    super_id INT,
    branch_id INT
);

CREATE TABLE branch (
  branch_id INT PRIMARY KEY,
  branch_name VARCHAR(40),
  mgr_id INT,
  mgr_start_date DATE,
  FOREIGN KEY(mgr_id) REFERENCES employee(emp_id)      ON DELET
E SET NULL
);

ALTER TABLE employee
ADD FOREIGN KEY(branch_id)
REFERENCES branch(branch_id)
ON DELETE SET NULL;

ALTER TABLE employee
ADD FOREIGN KEY(super_id)
REFERENCES employee(emp_id)
ON DELETE SET NULL;

CREATE TABLE client (
  client_id INT PRIMARY KEY,
  client_name VARCHAR(40),
  branch_id INT,
```

```
  FOREIGN KEY(branch_id) REFERENCES branch(branch_id)  ON DELET
E SET NULL
);

CREATE TABLE works_with (
  emp_id INT,
  client_id INT,
  total_sales INT,
  PRIMARY KEY(emp_id, client_id),
  FOREIGN KEY(emp_id) REFERENCES employee(emp_id)
  ON DELETE CASCADE,
  FOREIGN KEY(client_id) REFERENCES client(client_id)  ON DELET
E CASCADE
);

CREATE TABLE branch_supplier (
  branch_id INT,
  supplier_name VARCHAR(40),
  supply_type VARCHAR(40),
  PRIMARY KEY(branch_id, supplier_name),
  FOREIGN KEY(branch_id) REFERENCES branch(branch_id)  ON DELET
E CASCADE
);
-- Corporate
INSERT INTO employee VALUES(100, 'David', 'Wallace', '1967-11-
17', 'M', 250000, NULL, NULL);

INSERT INTO branch VALUES(1, 'Corporate', 100, '2006-02-09');

UPDATE employee
SET branch_id = 1
WHERE emp_id = 100;

INSERT INTO employee VALUES(101, 'Jan', 'Levinson', '1961-05-
11', 'F', 110000, 100, 1);
```

```
-- Scranton
INSERT INTO employee VALUES(102, 'Michael', 'Scott', '1964-03-
15', 'M', 75000, 100, NULL);

INSERT INTO branch VALUES(2, 'Scranton', 102, '1992-04-06');

UPDATE employee
SET branch_id = 2
WHERE emp_id = 102;

INSERT INTO employee VALUES(103, 'Angela', 'Martin', '1971-06-
25', 'F', 63000, 102, 2);
INSERT INTO employee VALUES(104, 'Kelly', 'Kapoor', '1980-02-
05', 'F', 55000, 102, 2);
INSERT INTO employee VALUES(105, 'Stanley', 'Hudson', '1958-02-
19', 'M', 69000, 102, 2);

-- Stamford
INSERT INTO employee VALUES(106, 'Josh', 'Porter', '1969-09-
05', 'M', 78000, 100, NULL);

INSERT INTO branch VALUES(3, 'Stamford', 106, '1998-02-13');

UPDATE employee
SET branch_id = 3
WHERE emp_id = 106;

INSERT INTO employee VALUES(107, 'Andy', 'Bernard', '1973-07-
22', 'M', 65000, 106, 3);
INSERT INTO employee VALUES(108, 'Jim', 'Halpert', '1978-10-
01', 'M', 71000, 106, 3);


-- BRANCH SUPPLIER
INSERT INTO branch_supplier VALUES(2, 'Hammer Mill', 'Paper');
```

```
INSERT INTO branch_supplier VALUES(2, 'Uni-
ball', 'Writing Utensils');
INSERT INTO branch_supplier VALUES(3, 'Patriot Paper', 'Paper')
;
INSERT INTO branch_supplier VALUES(2, 'J.T. Forms & Labels', 'C
ustom Forms');
INSERT INTO branch_supplier VALUES(3, 'Uni-
ball', 'Writing Utensils');
INSERT INTO branch_supplier VALUES(3, 'Hammer Mill', 'Paper');
INSERT INTO branch_supplier VALUES(3, 'Stamford Lables', 'Custo
m Forms');

-- CLIENT
INSERT INTO client VALUES(400, 'Dunmore Highschool', 2);
INSERT INTO client VALUES(401, 'Lackawana Country', 2);
INSERT INTO client VALUES(402, 'FedEx', 3);
INSERT INTO client VALUES(403, 'John Daly Law, LLC', 3);
INSERT INTO client VALUES(404, 'Scranton Whitepages', 2);
INSERT INTO client VALUES(405, 'Times Newspaper', 3);
INSERT INTO client VALUES(406, 'FedEx', 2);

-- WORKS_WITH
INSERT INTO works_with VALUES(105, 400, 55000);
INSERT INTO works_with VALUES(102, 401, 267000);
INSERT INTO works_with VALUES(108, 402, 22500);
INSERT INTO works_with VALUES(107, 403, 5000);
INSERT INTO works_with VALUES(108, 403, 12000);
INSERT INTO works_with VALUES(105, 404, 33000);
INSERT INTO works_with VALUES(107, 405, 26000);
INSERT INTO works_with VALUES(102, 406, 15000);
INSERT INTO works_with VALUES(105, 406, 130000);
```

```sql
-- Find all employees
SELECT *
FROM employee;
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id	branch_id
100	David	Wallace	1967-11-17	M	250000	NULL	1
101	Jan	Levinson	1961-05-11	F	110000	100	1
102	Michael	Scott	1964-03-15	M	75000	100	2
103	Angela	Martin	1971-06-25	F	63000	102	2
104	Kelly	Kapoor	1980-02-05	F	55000	102	2
105	Stanley	Hudson	1958-02-19	M	69000	102	2
106	Josh	Porter	1969-09-05	M	78000	100	3
107	Andy	Bernard	1973-07-22	M	65000	106	3
108	Jim	Halpert	1978-10-01	M	71000	106	3

```sql
-- Find all clients
SELECT *
FROM client;
```

client_id	client_name	branch_id
400	Dunmore Highschool	2
401	Lackawana Country	2
402	FedEx	3
403	John Daly Law, LLC	3
404	Scranton Whitepages	2
405	Times Newspaper	3
406	FedEx	2

```
-- Find all employees ordered by salary
SELECT *
from employee
ORDER BY salary DESC;
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id	branch_id
100	David	Wallace	1967-11-17	M	250000	NULL	1
101	Jan	Levinson	1961-05-11	F	110000	100	1
106	Josh	Porter	1969-09-05	M	78000	100	3
102	Michael	Scott	1964-03-15	M	75000	100	2
108	Jim	Halpert	1978-10-01	M	71000	106	3
105	Stanley	Hudson	1958-02-19	M	69000	102	2
107	Andy	Bernard	1973-07-22	M	65000	106	3
103	Angela	Martin	1971-06-25	F	63000	102	2
104	Kelly	Kapoor	1980-02-05	F	55000	102	2

```
-- Find all employees ordered by sex then name
SELECT *
from employee
ORDER BY sex, first_name, last_name;
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id	branch_id
103	Angela	Martin	1971-06-25	F	63000	102	2
101	Jan	Levinson	1961-05-11	F	110000	100	1
104	Kelly	Kapoor	1980-02-05	F	55000	102	2
107	Andy	Bernard	1973-07-22	M	65000	106	3
100	David	Wallace	1967-11-17	M	250000	NULL	1
108	Jim	Halpert	1978-10-01	M	71000	106	3
106	Josh	Porter	1969-09-05	M	78000	100	3
102	Michael	Scott	1964-03-15	M	75000	100	2
105	Stanley	Hudson	1958-02-19	M	69000	102	2

```sql
-- Find the first 5 employees in the table
SELECT *
from employee
LIMIT 5;
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id	branch_id
100	David	Wallace	1967-11-17	M	250000	NULL	1
101	Jan	Levinson	1961-05-11	F	110000	100	1
102	Michael	Scott	1964-03-15	M	75000	100	2
103	Angela	Martin	1971-06-25	F	63000	102	2
104	Kelly	Kapoor	1980-02-05	F	55000	102	2

```sql
-- Find the first and last names of all employees
SELECT first_name, employee.last_name
FROM employee;
```

first_name	last_name
David	Wallace
Jan	Levinson
Michael	Scott
Angela	Martin
Kelly	Kapoor
Stanley	Hudson
Josh	Porter
Andy	Bernard
Jim	Halpert

```sql
-- Find the forename and surnames names of all employees
SELECT first_name AS forename, employee.last_name AS surname
FROM employee;
```

forename	surname
David	Wallace
Jan	Levinson
Michael	Scott
Angela	Martin
Kelly	Kapoor
Stanley	Hudson
Josh	Porter
Andy	Bernard
Jim	Halpert

```sql
-- Find out all the different genders
SELECT DISTINCT sex
FROM employee;

-- Find all male employees
SELECT *
FROM employee
WHERE sex = 'M';

-- Find all employees at branch 2
SELECT *
FROM employee
WHERE branch_id = 2;
```

```sql
-- Find all employee's id's and names who were born after 1969
SELECT emp_id, first_name, last_name
FROM employee
WHERE birth_day >= 1970-01-01;
```

emp_id	first_name	last_name
100	David	Wallace
101	Jan	Levinson
102	Michael	Scott
103	Angela	Martin
104	Kelly	Kapoor
105	Stanley	Hudson
106	Josh	Porter
107	Andy	Bernard
108	Jim	Halpert

```sql
-- Find all female employees at branch 2
SELECT *
FROM employee
WHERE branch_id = 2 AND sex = 'F';
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id	branch_id
103	Angela	Martin	1971-06-25	F	63000	102	2
104	Kelly	Kapoor	1980-02-05	F	55000	102	2

```sql
--
Find all employees who are female & born after 1969 or who make
over 80000
SELECT *
FROM employee
WHERE (birth_day >= '1970-01-
01' AND sex = 'F') OR salary > 80000;
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id	branch_id
100	David	Wallace	1967-11-17	M	250000	NULL	1
101	Jan	Levinson	1961-05-11	F	110000	100	1
103	Angela	Martin	1971-06-25	F	63000	102	2
104	Kelly	Kapoor	1980-02-05	F	55000	102	2

```sql
-- Find all employees born between 1970 and 1975
SELECT *
FROM employee
WHERE birth_day BETWEEN '1970-01-01' AND '1975-01-01';
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id	branch_id
103	Angela	Martin	1971-06-25	F	63000	102	2
107	Andy	Bernard	1973-07-22	M	65000	106	3

```sql
-- Find all employees named Jim, Michael, Johnny or David
SELECT *
FROM employee
WHERE first_name IN ('Jim', 'Michael', 'Johnny', 'David');



-- Find the number of employees
SELECT COUNT(super_id)
FROM employee;
Ans : 8

-- Find the average of all employee's salaries
SELECT AVG(salary)
FROM employee;
Ans: 92888.8889

-- Find the sum of all employee's salaries
SELECT SUM(salary)
FROM employee;
Ans: 836000
```

```
-- Find out how many males and females there are
SELECT COUNT(sex), sex
FROM employee
GROUP BY sex;
Ans: M=6 , F = 3

-- Find the total sales of each salesman
SELECT SUM(total_sales), emp_id
FROM works_with
GROUP BY client_id;
```

SUM(total_sales)	emp_id
55000	105
267000	102
22500	108
17000	107
33000	105
26000	107
145000	102

```
-- Find the total amount of money spent by each client
SELECT SUM(total_sales), client_id
FROM works_with
GROUP BY client_id;
```

SUM(total_sales)	client_id
55000	400
267000	401
22500	402
17000	403
33000	404
26000	405
145000	406

```sql
-- % = any # characters, _ = one character

-- Find any client's who are an LLC
SELECT *
FROM client
WHERE client_name LIKE '%LLC';
```

client_id	client_name	branc... ↑
403	John Daly Law, LLC	3

```sql
-- Find any branch suppliers who are in the label business
SELECT *
FROM branch_supplier
WHERE supplier_name LIKE '% Label%';
```

branch_id	supplier_name	supply_type
2	J.T. Forms & Labels	Custom Forms

```sql
-- Find any employee born on the 10th day of the month
SELECT *
FROM employee
WHERE birth_day LIKE '____-02%';
```

emp_id	first_name	last_name	birth_day	sex	salary	super_id
104	Kelly	Kapoor	1980-02-05	F	55000	102
105	Stanley	Hudson	1958-02-19	M	69000	102

```sql
-- Find any clients who are schools
SELECT *
FROM client
WHERE client_name LIKE '%Highschool%';
```

client_id	client_name	branch_id
400	Dunmore Highschool	2

```sql
-- Find a list of employee and branch names
SELECT employee.first_name AS Employee_Branch_Names
FROM employee
UNION
SELECT branch.branch_name
FROM branch;
```

Employee_Branch_Names
David
Jan
Michael
Angela
Kelly
Stanley
Josh
Andy
Jim
Corporate
Scranton
Stamford

```sql
-- Find a list of all clients & branch suppliers' names
SELECT client_name , branch_id
FROM  client
UNION
SELECT supplier_name,branch_id
FROM branch_supplier;
```

client_name	branch_id
Dunmore Highschool	2
Lackawana Country	2
FedEx	3
John Daly Law, LLC	3
Scranton Whitepages	2
Times Newspaper	3
FedEx	2
Hammer Mill	2
J.T. Forms & Labels	2
Uni-ball	2
Hammer Mill	3
Patriot Paper	3
Stamford Lables	3
Uni-ball	3

```sql
--Find a list of all money spent or earned by the company
SELECT salary
FROM employee
UNION
SELECT total_sales
FROM works_with;
```

salary
250000
110000
75000
63000
55000
69000
78000
65000
71000
267000
15000
33000
130000
5000
26000
22500
12000

```
84   -- Add the extra branch
85   INSERT INTO branch VALUES(4, "Buffalo", NULL, NULL);
86   SELECT * FROM branch;
87
```

cess
ows)

Explore | SQL | Data | Chart | Export

branch_id	branch_name	mgr_id	mgr_start_date
1	Corporate	100	2006-02-09
2	Scranton	102	1992-04-06
3	Stamford	106	1998-02-13
4	Buffalo	NULL	NULL

```
289  --Find all branches and the names of their managers
290  SELECT employee.emp_id, employee.first_name, branch.branch_name
291  FROM employee
292  JOIN branch    -- LEFT JOIN, RIGHT JOIN
293  ON employee.emp_id = branch.mgr_id;    --foreign key
```

Success
3 rows)

Explore | SQL | Data | Chart | Export

emp_id	first_name	branch_name
100	David	Corporate
102	Michael	Scranton
106	Josh	Stamford

```sql
--Find all branches and the names of their managers
SELECT employee.emp_id, employee.first_name, branch.branch_name
FROM employee
LEFT JOIN branch    -- LEFT JOIN, RIGHT JOIN
ON employee.emp_id = branch.mgr_id;   --foreign key
```

uccess
9 rows)

Explore | SQL | Data | Chart | Export

emp_id	first_name	branch_name
100	David	Corporate
101	Jan	NULL
102	Michael	Scranton
103	Angela	NULL
104	Kelly	NULL
105	Stanley	NULL
106	Josh	Stamford
107	Andy	NULL
108	Jim	NULL

```sql
--Find all branches and the names of their managers
SELECT employee.emp_id, employee.first_name, branch.branch_name
FROM employee
RIGHT JOIN branch    -- LEFT JOIN, RIGHT JOIN
ON employee.emp_id = branch.mgr_id;    --foreign key
```

Success
4 rows)

Explore | SQL | Data | Chart | Export

emp_id	first_name	branch_name
100	David	Corporate
102	Michael	Scranton
106	Josh	Stamford
NULL	NULL	Buffalo

```sql
-- Find names of all employees who have sold over 50,000
SELECT employee.first_name, employee.last_name
FROM employee
WHERE employee.emp_id IN (SELECT works_with.emp_id
                          FROM works_with
                          WHERE works_with.total_sales > 50000);
```

Success
2 rows)

Explore | SQL | Data | Chart | Export

first_name	last_name
Michael	Scott
Stanley	Hudson

```sql
-- Find all clients who are handles by the branch that Michael Scott manages
-- Assume you know Michael's ID
SELECT client.client_id, client.client_name
FROM client
WHERE client.branch_id = (SELECT branch.branch_id
                          FROM branch
                          WHERE branch.mgr_id = 102);
```

Success
(4 rows)

Explore | SQL | Data | Chart | Export | Search results...

client_id	client_name
400	Dunmore Highschool
401	Lackawana Country
404	Scranton Whitepages
406	FedEx

```sql
-- Find all clients who are handles by the branch that Michael Scott manages
-- Assume you DONT'T know Michael's ID
SELECT client.client_id, client.client_name
FROM client
WHERE client.branch_id = (SELECT branch.branch_id
                          FROM branch
                          WHERE branch.mgr_id = (SELECT employee.emp_id
                                                 FROM employee
                                                 WHERE employee.first_name = 'Michael'
                                                 AND employee.last_name ='Scott'
                                                 LIMIT 1));
```

Success
(4 rows)

Explore | SQL | Data | Chart | Export | Search results...

client_id	client_name
400	Dunmore Highschool
401	Lackawana Country
404	Scranton Whitepages
406	FedEx

```sql
-- Find the names of employees who work with clients handled by the scranton branch
SELECT employee.first_name, employee.last_name
FROM employee
WHERE employee.emp_id IN (
                          SELECT works_with.emp_id
                          FROM works_with
                          )
AND employee.branch_id = 2;
```

Success
(2 rows)

Explore | SQL | Data | Chart | Export | Search results...

first_name	last_name
Michael	Scott
Stanley	Hudson

```sql
-- Find the names of all clients who have spent more than 100,000 dollars
SELECT client.client_name
FROM client
WHERE client.client_id IN (
                        SELECT client_id
                        FROM (
                            SELECT SUM(works_with.total_sales) AS totals, client_id
                            FROM works_with
                            GROUP BY client_id) AS total_client_sales
                        WHERE totals > 100000
);
```

Success
(2 rows)

Explore | SQL | Data | Chart | Export | Search results...

client_name
Lackawana Country
FedEx

**The shown example taken from internet.

**This note prepared by C S Ponkoj

**Used PopSQL text editor