Assignment 3

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6.2

```sql
SELECT staffNo, fName, lName, salary FROM staff
```

staffNo	fName	lName	salary
SA9	Mary	Howe	9000
SG14	David	Ford	18000
SG37	Ann	Beech	12000
SG5	Susan	Brand	24000
SL21	John	White	30000
SL41	Julie	Lee	9000

STAFFNO	FNAME	LNAME	SALARY
SA9	Mary	Howe	9000
SG14	David	Ford	18000
SG37	Ann	Beech	12000
SG5	Susan	Brand	24000
SL21	John	White	30000
SL41	Julie	Lee	9000

6.4

```sql
SELECT staffNo, fName lName, salary/12 AS monthlySalary FROM staff
```

staffNo	fName	lName	monthlySalary
SA9	Mary	Howe	750.0000
SG14	David	Ford	1500.0000
SG37	Ann	Beech	1000.0000
SG5	Susan	Brand	2000.0000
SL21	John	White	2500.0000
SL41	Julie	Lee	750.0000

STAFFNO	FNAME	LNAME	MONTHLYSALARY
SA9	Mary	Howe	750
SG14	David	Ford	1500
SG37	Ann	Beech	1000
SG5	Susan	Brand	2000
SL21	John	White	2500
SL41	Julie	Lee	750

6.6

```sql
SELECT * FROM branch WHERE city = 'London' OR city = 'Glasgow'
```

branchNo	street	city	postcode
B002	56 Cover Drive	London	NW10 6EU
B003	163 Main Street	Glasgow	G11 9QX
B005	22 Deer Road	London	SW1 4EH

BRANCHNO	STREET	CITY	POSTCODE
B002	56 Cover Drive	London	NW10 6EU
B003	163 Main Street	Glasgow	G11 9QX
B005	22 Deer Road	London	SW1 4EH

6.8

```sql
SELECT staffNo, fName, lName, position FROM staff
WHERE position IN ('Manager','Supervisor')
```

staffNo	fName	lName	position
SG14	David	Ford	Supervisor
SG5	Susan	Brand	Manager
SL21	John	White	Manager

STAFFNO	FNAME	LNAME	POSITION
SG14	David	Ford	Supervisor
SG5	Susan	Brand	Manager
SL21	John	White	Manager

6.10

```
SELECT clientID, viewDate FROM viewing
WHERE propertyNo = 'PG4' AND comment IS NULL
```

clientID	viewDate
12	2004-07-02 00:00:00

```
SELECT clientID, viewDate FROM viewing
WHERE propertyNo = 'PG4' AND comments IS NULL
```

CLIENTID	VIEWDATE
12	02-JUL-04 12.00.00.000000 PM

**ใน phpMyAdmin และ Oracle นั้นมีชื่อ attribute ไม่เหมือนกัน และมี format ของ viewDate ที่ต่างกัน

6.12

```
SELECT propertyNo, type, rooms, rent FROM propertyforrent
ORDER BY type, rent DESC
```

propertyNo	type ▲ 1	rooms	rent ▼ 2
PG16	Flat	4	450
PL94	Flat	4	400
PG36	Flat	3	375
PG4	Flat	3	350
PA14	House	6	650
PG21	House	5	600
PG97	House	3	380

PROPERTYNO	TYPE	ROOMS	RENT
PG16	Flat	4	450
PL94	Flat	4	400
PG36	Flat	3	375
PG4	Flat	3	350
PA14	House	6	650
PG21	House	5	600
PG97	House	3	380

6.14

```
SELECT COUNT(DISTINCT propertyNo) AS myCount
FROM viewing WHERE viewDate BETWEEN '2004-07-01' AND '2004-07-31'
```

myCount
3

```
SELECT COUNT(DISTINCT propertyNo) AS myCount
FROM viewing WHERE viewDate BETWEEN '01-JUL-04' AND '31-JUL-04';
```

MYCOUNT
3

**ใน phpMyAdmin และ Oracle มี format ของคอลัมน์ viewDate ต่างกัน ในการป้อนคำสั่งจึงต้องป้อนตาม format ของ database นั้น

6.16

```
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax,
AVG(salary) AS myAvg FROM staff
```

myMin	myMax	myAvg
9000	30000	17000.0000

MYMIN	MYMAX	MYAVG
9000	30000	17000

**ใน phpMyAdmin นั้นมี format ของการแสดงผลเป็นเลขทศนิยม ขณะที่ Oracle แสดงผลเป็นจำนวนเต็ม

6.18

```
SELECT branchNo, COUNT(staffNo) AS myCount,
SUM(salary) AS mySum FROM staff GROUP BY branchNo
HAVING COUNT(staffNo) > 1 ORDER BY branchNo
```

branchNo ▲ 1	myCount	mySum
B003	3	54000
B005	2	39000

BRANCHNO	MYCOUNT	MYSUM
B003	3	54000
B005	2	39000

6.20

```
SELECT staffNo, fName, lName,
position,salary -17000 AS salDiff
FROM staff WHERE salary > 17000
```

staffNo	fName	lName	position	salDiff
SG14	David	Ford	Supervisor	1000
SG5	Susan	Brand	Manager	7000
SL21	John	White	Manager	13000

STAFFNO	FNAME	LNAME	POSITION	SALDIFF
SG14	David	Ford	Supervisor	1000
SG5	Susan	Brand	Manager	7000
SL21	John	White	Manager	13000

6.22

```
SELECT staffNo, fName, lName, position,salary FROM staff
WHERE salary > SOME(SELECT salary FROM staff WHERE branchNo = 'B003')
```

staffNo	fName	lName	position	salary
SG14	David	Ford	Supervisor	18000
SG5	Susan	Brand	Manager	24000
SL21	John	White	Manager	30000

STAFFNO	FNAME	LNAME	POSITION	SALARY
SL21	John	White	Manager	30000
SG5	Susan	Brand	Manager	24000
SG14	David	Ford	Supervisor	18000

**ใน phpMyAdmin และ Oracle มีค่า default ของการแสดงผลต่างกันโดยที่ phpMyAdmin จะเรียงจากค่าน้อยไป
มาก ขณะที่ Oracle จะเรียงจากมากไปน้อย

6.24

```sql
SELECT c.clientNo,fName,lName,propertyNo,comment
FROM Client c, Viewing v WHERE c.ID = v.clientID
```

clientNo	fName	lName	propertyNo	comment
CR56	Fred	Flintstone	PA14	*NULL*
CR74	Albert	Johnstone	PG36	*NULL*
CR77	Clark	Kent	PG4	Tidy but too small
CR79	Joe	Bloggs	PA14	*NULL*
CR83	Edward	Scissorhands	PG4	*NULL*
CR62	Wilma	Flintstone	PA14	*NULL*
CR62	Wilma	Flintstone	PG21	*NULL*
CR62	Wilma	Flintstone	PA14	*NULL*
CR77	Clark	Kent	PG21	Not bad at all.
CR77	Clark	Kent	PG36	Kitchen too small.
CR77	Clark	Kent	PG16	*NULL*
NULL	Bruce	Wayne	PG21	*NULL*

```sql
SELECT c.clientNo,fName,lName,propertyNo,comments
FROM Client c, Viewing v WHERE c.ID = v.clientID
```

CLIENTNO	FNAME	LNAME	PROPERTYNO	COMMENTS
CR56	Fred	Flintstone	PA14	-
CR74	Albert	Johnstone	PG36	-
CR77	Clark	Kent	PG4	Tidy but too small
CR79	Joe	Bloggs	PA14	-
CR83	Edward	Scissorhands	PG4	-
CR62	Wilma	Flintstone	PA14	-
CR62	Wilma	Flintstone	PG21	-
CR62	Wilma	Flintstone	PA14	-
CR77	Clark	Kent	PG21	Not bad at all.
CR77	Clark	Kent	PG36	Kitchen too small.
CR77	Clark	Kent	PG16	-
-	Bruce	Wayne	PG21	-

**ชื่อคอลัมน์ต่างกันจึงต้องป้อนคำสั่งที่ต่างกัน และการแสดงค่า NULL ที่ต่างกัน

6.26

```
SELECT b.branchNo, b.city, s.staffNo, fName, lName,propertyNo
FROM branch b, staff s, propertyforrent p
WHERE b.branchNo = s.branchNo AND s.staffNo = p.staffNo
ORDER BY b.branchNo, s.staffNo, propertyNo
```

branchNo △ 1	city	staffNo	fName	lName	propertyNo △ 3
B003	Glasgow	SG14	David	Ford	PG16
B003	Glasgow	SG37	Ann	Beech	PG21
B003	Glasgow	SG37	Ann	Beech	PG36
B005	London	SL41	Julie	Lee	PL94
B007	Aberdeen	SA9	Mary	Howe	PA14
B007	Aberdeen	SA9	Mary	Howe	PG4
B007	Aberdeen	SA9	Mary	Howe	PG97

BRANCHNO	CITY	STAFFNO	FNAME	LNAME	PROPERTYNO
B003	Glasgow	SG14	David	Ford	PG16
B003	Glasgow	SG37	Ann	Beech	PG21
B003	Glasgow	SG37	Ann	Beech	PG36
B005	London	SL41	Julie	Lee	PL94
B007	Aberdeen	SA9	Mary	Howe	PA14
B007	Aberdeen	SA9	Mary	Howe	PG4
B007	Aberdeen	SA9	Mary	Howe	PG97

6.28

```
SELECT b.*, p.* FROM branch b LEFT JOIN propertyforrent p ON b.city = p.city
```

branchNo	street	city	postcode	propertyNo	street	city	postcode	type	rooms	rent	ownerNo	staffNo	branchNo	picture	floorPlan
B007	16 Argyll Street	Aberdeen	AB2 3SU	PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	images/house2.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG16	5 Novar Drive	Glasgow	G12 9AX	Flat	4	450	CO93	SG14	B003	images/house3.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG21	18 Dale Road	Glasgow	G12	House	5	600	CO87	SG37	B003	images/house4.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG36	2 Manor Road	Glasgow	G32 4QX	Flat	3	375	CO93	SG37	B003	images/house5.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG4	6 Lawrence Street	Glasgow	G11 9QX	Flat	3	350	CO40	SA9	B003	images/house2.jpg	images/plan1.jpg
B007	16 Argyll Street	Aberdeen	AB2 3SU	PG97	Muir Drive	Aberdeen	AB42 1DD	House	3	380	CO46	SA9	B007	images/house1.jpg	images/plan1.jpg
B002	56 Cover Drive	London	NW10 6EU	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B005	22 Deer Road	London	SW1 4EH	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B004	32 Manse Road	Bristol	BS99 1NZ	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

BRANCHNO	STREET	CITY	POSTCODE	PROPERTYNO	STREET	CITY	POSTCODE	TYPE	ROOMS	RENT	OWNERNO	STAFFNO	BRANCHNO	PICTURE	FLOORPLAN
B007	16 Argyll Street	Aberdeen	AB2 3SU	PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	images/house2.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG16	5 Novar Drive	Glasgow	G12 9AX	Flat	4	450	CO93	SG14	B003	images/house3.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG21	18 Dale Road	Glasgow	G12	House	5	600	CO87	SG37	B003	images/house4.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG36	2 Manor Road	Glasgow	G32 4QX	Flat	3	375	CO93	SG37	B003	images/house5.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG4	6 Lawrence Street	Glasgow	G11 9QX	Flat	3	350	CO40	SA9	B003	images/house2.jpg	images/plan1.jpg
B007	16 Argyll Street	Aberdeen	AB2 3SU	PG97	Muir Drive	Aberdeen	AB42 1DD	House	3	380	CO46	SA9	B007	images/house1.jpg	images/plan1.jpg
B002	56 Cover Drive	London	NW10 6EU	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B005	22 Deer Road	London	SW1 4EH	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B004	32 Manse Road	Bristol	BS99 1NZ	-	-	-	-	-	-	-	-	-	-	-	-

6.30

```sql
SELECT b.*, p.* FROM branch b
LEFT OUTER JOIN propertyforrent p ON b.city = p.city
UNION
SELECT b.*, p.* FROM propertyforrent p
RIGHT OUTER JOIN branch b ON b.city = p.city
```

branchNo	street	city	postcode	propertyNo	street	city	postcode	type	rooms	rent	ownerNo	staffNo	branchNo	picture	floorPlan
B007	16 Argyll Street	Aberdeen	AB2 3SU	PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	images/house2.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG16	5 Novar Drive	Glasgow	G12 9AX	Flat	4	450	CO93	SG14	B003	images/house3.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG21	18 Dale Road	Glasgow	G12	House	5	600	CO87	SG37	B003	images/house4.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG36	2 Manor Road	Glasgow	G32 4QX	Flat	3	375	CO93	SG37	B003	images/house5.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG4	6 Lawrence Street	Glasgow	G11 9QX	Flat	3	350	CO40	SA9	B003	images/house2.jpg	images/plan1.jpg
B007	16 Argyll Street	Aberdeen	AB2 3SU	PG97	Muir Drive	Aberdeen	AB42 1DD	House	3	380	CO46	SA9	B007	images/house1.jpg	images/plan1.jpg
B002	56 Cover Drive	London	NW10 6EU	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B005	22 Deer Road	London	SW1 4EH	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B004	32 Manse Road	Bristol	BS99 1NZ	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```sql
SELECT b.*, p.* FROM branch b FULL JOIN propertyforrent p ON b.city = p.city
```

BRANCHNO	STREET	CITY	POSTCODE	PROPERTYNO	STREET	CITY	POSTCODE	TYPE	ROOMS	RENT	OWNERNO	STAFFNO	BRANCHNO	PICTURE	FLOORPLAN
B007	16 Argyll Street	Aberdeen	AB2 3SU	PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	images/house2.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG16	5 Novar Drive	Glasgow	G12 9AX	Flat	4	450	CO93	SG14	B003	images/house3.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG21	18 Dale Road	Glasgow	G12	House	5	600	CO87	SG37	B003	images/house4.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG36	2 Manor Road	Glasgow	G32 4QX	Flat	3	375	CO93	SG37	B003	images/house5.jpg	images/plan1.jpg
B003	163 Main Street	Glasgow	G11 9QX	PG4	6 Lawrence Street	Glasgow	G11 9QX	Flat	3	350	CO40	SA9	B003	images/house2.jpg	images/plan1.jpg
B007	16 Argyll Street	Aberdeen	AB2 3SU	PG97	Muir Drive	Aberdeen	AB42 1DD	House	3	380	CO46	SA9	B007	images/house1.jpg	images/plan1.jpg
B002	56 Cover Drive	London	NW10 6EU	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B005	22 Deer Road	London	SW1 4EH	PL94	6 Argyll Street	London	NW2	Flat	4	400	CO87	SL41	B005	images/house3.jpg	images/plan1.jpg
B004	32 Manse Road	Bristol	BS99 1NZ	-	-	-	-	-	-	-	-	-	-	-	-

**ใน phpMyAdmin ไม่มีคำสั่ง FULL JOIN จึงต้องแก้โดยการใช้คำสั่ง LEFT JOIN และ UNION กับ RIGHT JOIN

6.32

```sql
SELECT city FROM branch WHERE city IS NOT NULL

UNION

SELECT city FROM propertyforrent WHERE city IS NOT NULL
```
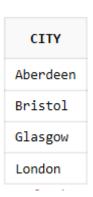
city
London
Glasgow
Bristol
Aberdeen

CITY
Aberdeen
Bristol
Glasgow
London

**ใน phpMyAdmin และ Oracle มีค่า default ในการแสดงผล โดยมีการเรียงลำดับตัวอักษรที่ต่างกัน

6.34

```sql
(SELECT city FROM branch) EXCEPT (SELECT city FROM propertyforrent)
```

city
Bristol

```sql
SELECT city FROM branch
WHERE city NOT IN (SELECT city FROM propertyforrent)
```

CITY
Bristol

**ใน Oracle ไม่มีคำสั่ง EXCEPT จึงต้องแก้โดยการใช้คำสั่ง WHERE … NOT IN แทน

6.36

```sql
INSERT INTO staff(staffNo, fName, lName, position, salary, branchNo)
VALUES ('SG44', 'Anne', 'Jones', 'Assistant', 8100, 'B003')
```

✔ 1 row inserted. (Query took 0.0081 seconds.)

INSERT INTO staff(staffNo, fName, lName, position, salary, branchNo) VALUES ('SG44', 'Anne', 'Jones', 'Assistant', 8100, 'B003')

1 row(s) inserted.

6.38

```sql
UPDATE staff SET salary = salary * 1.03
```

✔ 7 rows affected. (Query took 0.0081 seconds.)

UPDATE staff SET salary = salary * 1.03

7 row(s) updated.

6.40

```
UPDATE staff SET position = 'Manager', salary = 18000 WHERE staffNo = 'SG14'
```

✓ 1 row affected. (Query took 0.0052 seconds.)

UPDATE staff SET position = 'Manager', salary = 18000 WHERE staffNo = 'SG14'

1 row(s) updated.

6.42

```
DELETE FROM viewing
```

✓ 12 rows affected. (Query took 0.0092 seconds.)

DELETE FROM viewing

12 row(s) deleted.