



Data Engineer

Assignment (4)

Under supervisor
ENG: Hazem Omar

Name: Abdullah Ibrahim Mahmoud

Data Manipulating Language:

Q1/2

```

Run | New Tab
4 INSERT INTO Employee (Fname, Lname,SSN, BDATE, Address, Sex, Salary,Superssn, Dno)
5 VALUES
6 ('Abdullah', 'ibrahim', '102658', '2003-7-22', '15 mostafa Fahmy St. elma3adee', 'M', 5000, '445566', 30);
Run | New Tab
7 INSERT INTO Employee (Fname, Lname,SSN, BDATE, Address, Sex, Dno)
8 VALUES
9 ('TAHA', 'MOHAMED', '102880', '2003-3-29', '15 mostafa Fahmy St. elma3adee', 'M', 80);

```

Q	Fname varchar	Lname varchar	SSN string	BDATE date	Address varchar	Sex string	Salary newdecimal	Superssn string	Dno int
> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3adee	M	5000.00	445566	30
> 2	TAHA	MOHAMED	102880	2003-03-29	15 mostafa Fahmy St. elma3adee	M	(NULL)	(NULL)	80
> 3	Ahmed	Ali	112233	1965-01-01	15 Ali Fahmy St. Giza	M	1300.00	223344	10
> 4	Hanaa	Sobhy	123456	1973-03-18	38 Abdel Khalik Tharwat St.	F	800.00	223344	10
> 5	Kamel	Mohamed	223344	1970-10-15	38 Mohy el dien abo el Ezz	M	1800.00	321654	10
> 6	Amr	Omran	321654	1963-09-14	44 Hilopolis. Cairo	M	2500.00	(NULL)	(NULL)
> 7	Edward	Hanna	512463	1972-08-19	18 Abaas El 3akaad St. Nasr	M	1500.00	321654	30
> 8	Maged	Raouf	521634	1980-04-06	18 Kholosi st. Shobra. Cairo	M	1000.00	968574	30

Q3

```

Run | New Tab
INSERT INTO Department (Dname, DNum, MGRSSN, MGRStartDate)
VALUES
('DEPT SW', 102, '112233', '2006-11-01');

```

	Filter	Filter	Filter	Filter
> 1	DP1	10	223344	2005-01-01
> 2	DP2	20	968574	2006-03-01
> 3	DP3	30	512463	2006-06-01
> 4	DEPT SW	102	112233	2006-11-01

Q4 /a

```

Run | New Tab
23 UPDATE Department
24 SET
25 MGRSSN = '968574'
26 WHERE DNum = 102;
27 -- here dep 102 is manged by Mrs. Noha Mohamed

```

	Filter	Filter	Filter	Filter
> 1	DP1	10	223344	2005-01-01
> 2	DP2	20	968574	2006-03-01
> 3	DP3	30	512463	2006-06-01
> 4	DEPT SW	102	968574	2006-11-01

Q4/b

Fname varchar	Lname varchar	SSN string	BDATE date	Address varchar	Sex string	Salary newdecimal	Superssn string	Dno int
Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3adee	M	5000.00	968574	30

```

UPDATE employee
SET
Superssn = '968574' -- new position as the manager of Department 20.
WHERE ssn = '102658'; --ssn of me

```

	Filter	Filter	Filter	Filter
> 1	DP1	10	223344	2005-01-01
> 2	DP2	20	102658	2024-07-14
> 3	DP3	30	512463	2006-06-01
> 4	DEPT SW	102	968574	2006-11-01

Q 4/c

```
Run | New Tab
UPDATE Employee
SET Superssn = '102658'
WHERE SSN = '102880';
```

Q	Fname varchar(255)	Lname varchar(255)	* SSN char(6)	BDATE date	Address varchar(255)	Sex char(1)	Salary decimal(10,2)	Superssn char(6)	Dno int
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	5000.00	968574	30
> 2	TAHA	MOHAMED	102880	2003-03-29	15 mostafa Fahmy St. elma3	M	(NULL)	(NULL)	80

Q	Fname varchar	Lname varchar	SSN string	BDATE date	Address varchar	Sex string	Salary newdecimal	Superssn string	Dno int
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	5000.00	968574	30
> 2	TAHA	MOHAMED	102880	2003-03-29	15 mostafa Fahmy St. elma3	M	(NULL)	102658	80

Q 5

finally, my friend take the position of mr kamal

```
--('Kamel', 'Mohamed', '223344', '1970-10-15', '38 Mohy el dien abo el Ezz St. Cairo', 'M', 1800, '321654', 10)
-- first delete this data
> Run | New Tab
DELETE FROM employee WHERE SSN='223344';
-- DELETE DATA OF Mr. Kamel Mohamed
> Run | New Tab
table employee;
-----
-- here i will change all infr of mr kamal to my friend
-- Check Department Manager
-- give 10 to my friend
> Run | New Tab
UPDATE Department
SET MGRSSN = '102880', MGRStartDate = CURDATE();
WHERE DNum = 10;
-----
-- Check Supervision
-- super of my friend is the same of mr kamal
> Run | New Tab
UPDATE Employee
SET Superssn = '321654'
WHERE Superssn = '102658';
-----
-- Check Project Involvement
-- update the project of mr kamal to my friend
> Run | New Tab
UPDATE Works_for
SET ESSN = '102880'
WHERE ESSN = '223344';
-----
-- update the dno of my friend to dno of mr kamal
> Run | New Tab
UPDATE Employee
SET Dno = 10
WHERE ssn = '102658';
```

Q	Fname varchar	Lname varchar	SSN string	BDATE date	Address varchar	Sex string	Salary newdecimal	Superssn string	Dno int
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	5000.00	968574	30
2	TAHA	MOHAMED	102880	2003-03-29	15 mostafa Fahmy St. elma3	M	1500.00	321654	10
3	Ahmed	Ali	112233	1965-01-01	15 Ali Fahmy St. Giza	M	1300.00	223344	10
4	Hanaa	Sobhy	123456	1973-03-18	38 Abdel Khalik Tharwat St.	F	800.00	223344	10
5	Amr	Omran	321654	1963-09-14	44 Hilopolis. Cairo	M	2500.00	(NULL)	(NULL)
6	Edward	Hanna	512463	1972-08-19	18 Abaas El 3akaad St. Nasr	M	1500.00	321654	30
7	Maged	Raof	521634	1980-04-06	18 Kholosi st. Shobra. Cairo	M	1000.00	968574	30
8	Mariam	Adel	669955	1982-06-12	269 El-Haram st. Giza	F	750.00	512463	20

Q6

```
Run | New Tab
update employee set
salary=salary*1.20
WHERE ssn = '102658';
Run | New Tab
```

```
/*
before increase my salary is 1600
after increase the salary is 1920
Current Salary = 1600
Increase = 1600 * 0.20 = 320
New Salary = Current Salary + Increase = 1600 + 320 = 1920
*/
```

> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	1600.00	968574	30
> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	1920.00	968574	30

Simple SELECT Queries:

Q1

```
Run | New Tab
✓ 84 table employee; 1ms
```

Q	Fname varchar	Lname varchar	SSN string	BDATE date	Address varchar	Sex string	Salary newdecimal	Superssn string	Dno int
> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	1600.00	968574	30
> 2	TAHA	MOHAMED	102880	2003-03-29	15 mostafa Fahmy St. elma3	M	1500.00	321654	10
> 3	Ahmed	Ali	112233	1965-01-01	15 Ali Fahmy St. Giza	M	1300.00	223344	10
> 4	Hanaa	Sobhy	123456	1973-03-18	38 Abdel Khalik Tharwat St.	F	800.00	223344	10
> 5	Amr	Omran	321654	1963-09-14	44 Hilopolis. Cairo	M	2500.00	(NULL)	(NULL)
> 6	Edward	Hanna	512463	1972-08-19	18 Abaas El 3akaad St. Nasr	M	1500.00	321654	30
> 7	Maged	Raof	521634	1980-04-06	18 Kholosi st. Shobra. Cairo	M	1000.00	968574	30
> 8	Mariam	Adel	669955	1982-06-12	269 El-Haram st. Giza	F	750.00	512463	20
> 9	Noha	Mohamed	968574	1975-02-01	55 Orabi St. El Mohandiseer	F	1600.00	321654	20

Q2

```
Run | New Tab | JSON
✓ 85 SELECT FNAME,LNAME,SALARY,DNO FROM employee; 3ms
```

Q	FNAME varchar	LNAME varchar	SALARY newdecimal	DNO int
> 1	Abdullah	ibrahim	1600.00	30
> 2	TAHA	MOHAMED	1500.00	10
> 3	Ahmed	Ali	1300.00	10
> 4	Hanaa	Sobhy	800.00	10
> 5	Amr	Omran	2500.00	(NULL)
> 6	Edward	Hanna	1500.00	30
> 7	Maged	Raof	1000.00	30
> 8	Mariam	Adel	750.00	20
> 9	Noha	Mohamed	1600.00	20

Q3

```
Run | New Tab | JSON
✓ 86 select pname,plocation,Dnum from project; 2ms
```

Q	pname varchar	plocation varchar	Dnum int
> 1	Al Solimaniah	Cairo_Alex Road	10
> 2	Al Rabwah	6th of October City	10
> 3	Al Rawdah	Zaied City	10
> 4	Al Rowad	Cairo,Faiyom Road	20
> 5	Al Rehab	Nasr City	30
> 6	Pitcho american	Maady	30
> 7	Ebad El Rahman	Ring Road	20

Q4

```
SELECT
    fname,
    salary AS "ANNUAL SALARY",
    salary * 0.1 AS "ANNUAL COMM"
FROM
    employee;
```

		fname varchar	ANNUAL SALARY newdecimal	ANNUAL COMM newdecimal
		Filter	Filter	Filter
> 1		Abdullah	1600.00	160.0000
> 2		TAHA	1500.00	150.0000
> 3		Ahmed	1300.00	130.0000
> 4		Hanaa	800.00	80.0000
> 5		Amr	2500.00	250.0000
> 6		Edward	1500.00	150.0000
> 7		Maged	1000.00	100.0000
> 8		Mariam	750.00	75.0000
> 9		Noha	1600.00	160.0000

Q5/6

```
93 SELECT ssn, CONCAT(fname, ' ', lname)AS Name, salary FROM employee WHERE salary > 1000;
94 SELECT ssn, CONCAT(fname, ' ', lname)AS Name, salary*12 FROM employee WHERE salary * 12 > 10000; 8ms
95
```

		ssn string	Name varchar	salary newdecimal
		Filter	Filter	Filter
> 1		102658	Abdullah ibrahim	1600.00
> 2		102880	TAHA MOHAMED	1500.00
> 3		112233	Ahmed Ali	1300.00
> 4		321654	Amr Omran	2500.00
> 5		512463	Edward Hanna	1500.00
> 6		968574	Noha Mohamed	1600.00

		ssn string	Name varchar	salary*12 newdecimal
		Filter	Filter	Filter
> 1		102658	Abdullah ibrahim	19200.00
> 2		102880	TAHA MOHAMED	18000.00
> 3		112233	Ahmed Ali	15600.00
> 4		321654	Amr Omran	30000.00
> 5		512463	Edward Hanna	18000.00
> 6		521634	Maged Raoof	12000.00
> 7		968574	Noha Mohamed	19200.00

Q7

```
SELECT sex as gender, CONCAT(fname, ' ', lname)AS Name, salary FROM employee WHERE sex="f"; 4ms
```

		gender string	Name varchar	salary newdecimal
		Filter	Filter	Filter
> 1		F	Hanaa Sobhy	800.00
> 2		F	Mariam Adel	750.00
> 3		F	Noha Mohame	1600.00

Q8

```
95 SELECT
96     dname AS DepartmentId,
97     dname AS DepartmentName,
98     mgrsn
99 FROM
100     Department
101 WHERE
102     mgrsn = '968574';
103
104 SELECT
105     d.dname AS DepartmentId,
106     d.dname AS DepartmentName,
107     mgrsn
108 FROM
109     Department d
110 JOIN
111     Employee e ON d.DepartmentId = e.SSN
112 WHERE
113     e.SSN = '968574'; 8ms
```

		Filter	Filter	Filter
> 1	102	DEPT SW	968574	

Q9

```

115 SELECT
116     Pnumber AS ProjectId,
117     Pname AS ProjectName,
118     Plocation AS ProjectLocation,
119     Dnum AS 'controlled by department'
120 FROM
121     Project
122 WHERE
123     DNum = 10; 4ms
124

```

		ProjectId int	ProjectName varchar	ProjectLocation varchar	controlled by department int
		Filter	Filter	Filter	Filter
	> 1	100	AL Solimaniah	Cairo_Alex Road	10
	> 2	200	Al Rabwah	6th of October City	10
	> 3	300	Al Rawdah	Zaied City	10

Try to implement these queries:

Q1

```

115 SELECT
116     Pnumber AS ProjectId,
117     Pname AS ProjectName,
118     Plocation AS ProjectLocation,
119     city
120 FROM
121     Project
122 WHERE TRIM (city)in("Cairo","Alex"); 7ms

```

	Q	ProjectId int	ProjectName varchar	ProjectLocation varchar	city varchar
		Filter	Filter	Filter	Filter
	> 1	100	AL Solimaniah	Cairo_Alex Road	Alex
	> 2	500	Al Rehab	Nasr City	Cairo
	> 3	600	Pitcho american	Maady	Cairo
	> 4	700	Ebad El Rahman	Ring Road	Cairo

Q2

```

Run | New Tab | JSON
select * from employee where dno=30 and salary between 1000 and 2000; 3ms

```

	Q	Fname varchar	Lname varchar	SSN string	BDATE date	Address varchar	Sex string	Salary newdecimal	Superssn string	Dno int
		Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
	> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	1600.00	968574	30
	> 2	Edward	Hanna	512463	1972-08-19	18 Abaas El 3akaad St. Nasr	M	1500.00	321654	30
	> 3	Maged	Raof	521634	1980-04-06	18 Kholosi st. Shobra. Cairo	M	1000.00	968574	30

Q3

```

Run | New Tab | JSON
select concat(e.fname," ",e.lname),e.address ,p.pname from employee e
INNER JOIN project p on e.Dno=p.Dnum
WHERE p.Pname = 'AL Solimaniah'; 3ms

```

	Filter	Filter	Filter
> 1	TAHA MOHAMED	15 mostafa Fahmy St. elma3	AL Solimaniah
> 2	Ahmed Ali	15 Ali Fahmy St. Giza	AL Solimaniah
> 3	Hanaa Sobhy	38 Abdel Khalik Tharwat St.	AL Solimaniah

Q4

```

Run | New Tab | JSON
29 select concat(e.fname, " ", e.lname), p.* ,w.hours from employee e
30 INNER JOIN project p on e.Dno=p.Dnum
31 INNER JOIN works_for w ON w.Essn=e.ssn
32 where w.hours>20; 5ms

```

Q	concat(e.fname, " ", e.lname) varchar	Pname varchar	Pnumber int	Plocation varchar	City varchar	Dnum int	hours int
> 1	Ahmed Ali	AL Solmaniah	100	Cairo_Alex Road	Alex	10	40
> 2	Ahmed Ali	Al Rabwah	200	6th of October City	Giza	10	40
> 3	Ahmed Ali	Al Rawdah	300	Zaied City	Giza	10	40
> 4	Edward Hanna	Al Rehab	500	Nasr City	Cairo	30	25
> 5	Edward Hanna	Pitcho american	600	Maady	Cairo	30	25

Q5

	FullName	SSN	ProjectName
	Abdullah Ibrahim	102658	No Project
	TAHA MOHAMED	102880	AL Solmaniah
	TAHA MOHAMED	102880	Al Rabwah
	TAHA MOHAMED	102880	Al Rawdah
	TAHA MOHAMED	102880	Al Rehab
	Ahmed Ali	112233	AL Solmaniah
	Hanaa Sobhy	123456	No Project
	Amr Omran	321654	No Project
	Edward Hanna	512463	Al Rehab
	Edward Hanna	512463	Pitcho american
	Maged Raouf	521634	Al Rawdah
	Maged Raouf	521634	Al Rowad
	Maged Raouf	521634	Al Rehab
	Maged Raouf	521634	Pitcho american
	Mariam Adel	669955	Al Rawdah
	Mariam Adel	669955	Al Rowad
	Mariam Adel	669955	Ebad El Rahman
	Noha Mohamed	968574	Al Rawdah
	Noha Mohamed	968574	Al Rowad
	Noha Mohamed	968574	Ebad El Rahman

```

Run | New Tab | JSON | Copy
148 SELECT CONCAT(e.Fname, ' ', e.Lname) AS FullName, e.SSN,
149 COALESCE(p.Pname, 'No Project') AS ProjectName
FROM Employee e
150 LEFT JOIN Works_for w ON e.SSN = w.ESSN
151 LEFT JOIN Project p ON w.Pno = p.Pnumber
152 ORDER BY E.SSN; 5ms

```

Q6

```

Run | New Tab | JSON | Copy
SELECT CONCAT(e.Fname, ' ', e.Lname) AS "the name of its manager",
COALESCE(D.Dname, 'NO Have department') AS DepartmentName
FROM Employee e
LEFT JOIN department D ON e.SSN = D.MGRSSN
ORDER BY e.fname; 4ms

```

Q	the name of its manager varchar	DepartmentName varchar
> 1	Abdullah ibrahim	DP2
> 2	Ahmed Ali	NO Have department
> 3	Amr Omran	NO Have department
> 4	Edward Hanna	DP3
> 5	Hanaa Sobhy	NO Have department
> 6	Maged Raouf	NO Have department
> 7	Mariam Adel	NO Have department
> 8	Noha Mohamed	DEPT SW
> 9	TAHA MOHAMED	DP1

Q7

```

Run | New Tab | JSON | Copy
SELECT coalesce(CONCAT(e.Fname, ' ', e.Lname), 'not belong to any departement')
AS "full name",
COALESCE(D.Dname, 'NO Have department') AS DepartmentName
FROM department D
left JOIN employee e ON e.dno = d.Dnum
ORDER BY d.dname; 5ms

```

Q	full name varchar	DepartmentName varchar
> 1	not belong to any depart	DEPT SW
> 2	Hanaa Sobhy	DP1
> 3	Ahmed Ali	DP1
> 4	TAHA MOHAMED	DP1
> 5	Noha Mohamed	DP2
> 6	Mariam Adel	DP2
> 7	Maged Raouf	DP3
> 8	Edward Hanna	DP3
> 9	Abdullah ibrahim	DP3

Q8

```

> Run | New Tab | JSON | Copy
SELECT
  concat(e.Fname, ' ', e.LName) AS EmployeeName,
  p.Pname AS ProjectName FROM Employee e
CROSS JOIN Project p
ORDER BY EmployeeName, ProjectName;

```

EmployeeName	ProjectName
Abdullah Ibrahim	Al Rabwah
Abdullah Ibrahim	Al Rawdah
Abdullah Ibrahim	Al Rehab
Abdullah Ibrahim	Al Rowad
Abdullah Ibrahim	AL Solmaniah
Abdullah Ibrahim	Ebad El Rahman
Abdullah Ibrahim	Pitcho american
Ahmed Ali	Al Rabwah
Ahmed Ali	Al Rawdah
Ahmed Ali	Al Rehab
Ahmed Ali	Al Rowad
Ahmed Ali	AL Solmaniah
Ahmed Ali	Ebad El Rahman
Ahmed Ali	Pitcho american
Amr Omran	Al Rabwah
Amr Omran	Al Rawdah
Amr Omran	Al Rehab
Amr Omran	Al Rowad
Amr Omran	AL Solmaniah
Amr Omran	Ebad El Rahman
Amr Omran	Pitcho american
Edward Hanna	Al Rabwah
Edward Hanna	Al Rawdah
Edward Hanna	Al Rehab
Edward Hanna	Al Rowad
Edward Hanna	AL Solmaniah
Edward Hanna	Ebad El Rahman
Edward Hanna	Pitcho american

EmployeeName	ProjectName
Hanaa Sobhy	Al Rabwah
Hanaa Sobhy	Al Rawdah
Hanaa Sobhy	Al Rehab
Hanaa Sobhy	Al Rowad
Hanaa Sobhy	AL Solmaniah
Hanaa Sobhy	Ebad El Rahman
Hanaa Sobhy	Pitcho american
Maged Raouf	Al Rabwah
Maged Raouf	Al Rawdah
Maged Raouf	Al Rehab
Maged Raouf	Al Rowad
Maged Raouf	AL Solmaniah
Maged Raouf	Ebad El Rahman
Maged Raouf	Pitcho american
Mariam Adel	Al Rabwah
Mariam Adel	Al Rawdah
Mariam Adel	Al Rehab
Mariam Adel	Al Rowad
Mariam Adel	AL Solmaniah
Mariam Adel	Ebad El Rahman
Mariam Adel	Pitcho american
Noha Mohamed	Al Rabwah
Noha Mohamed	Al Rawdah
Noha Mohamed	Al Rehab
Noha Mohamed	Al Rowad
Noha Mohamed	AL Solmaniah
Noha Mohamed	Ebad El Rahman
Noha Mohamed	Pitcho american
TAHA MOHAMED	Al Rabwah

EmployeeName	ProjectName
Hanaa Sobhy	Pitcho american
Maged Raouf	Al Rabwah
Maged Raouf	Al Rawdah
Maged Raouf	Al Rehab
Maged Raouf	Al Rowad
Maged Raouf	AL Solmaniah
Maged Raouf	Ebad El Rahman
Maged Raouf	Pitcho american
Mariam Adel	Al Rabwah
Mariam Adel	Al Rawdah
Mariam Adel	Al Rehab
Mariam Adel	Al Rowad
Mariam Adel	AL Solmaniah
Mariam Adel	Ebad El Rahman
Mariam Adel	Pitcho american
Noha Mohamed	Al Rabwah
Noha Mohamed	Al Rawdah
Noha Mohamed	Al Rehab
Noha Mohamed	Al Rowad
Noha Mohamed	AL Solmaniah
Noha Mohamed	Ebad El Rahman
Noha Mohamed	Pitcho american
TAHA MOHAMED	Al Rabwah

Q9

```

SELECT
  CONCAT(e1.Fname, ' ', e1.LName) AS Employee1,
  e1.Address AS Address1,
  CONCAT(e2.Fname, ' ', e2.LName) AS Employee2,
  e2.Address AS Address2
FROM
  Employee e1
JOIN
  Employee e2 ON e1.SSN < e2.SSN AND e1.address = e2.address ; 13ms

```

Q	Employee1 varchar	Address1 varchar	Employee2 varchar	Address2 varchar
	Filter	Filter	Filter	Filter
> 1	Abdullah ibrahim	15 mostafa Fahmy St. elma3	TAHA MOHAMED	15 mostafa Fahmy St. elma3

Q10

If lack of job title attribute I can use the same supervisor here they are in the same object

Here output and query

```
WITH EmployeePairs AS (
    SELECT
        CONCAT(e1.Fname, ' ', e1.Lname) AS Employee1,
        e1.Superssn AS s1,
        e1.Dno AS Department1,
        CONCAT(e2.Fname, ' ', e2.Lname) AS Employee2,
        e2.Superssn AS s2,
        e2.Dno AS Department2
    FROM
        Employee e1
    JOIN
        Employee e2 ON e1.Superssn = e2.Superssn AND e1.Dno <> e2.Dno
)
SELECT
    Employee1,
    s1,
    Department1,
    Employee2,
    s2,
    Department2
FROM
    EmployeePairs
WHERE
    Employee1 < Employee2; 6ms
```

Q	Employee1 varchar	s1 string	Department1 int	Employee2 varchar	s2 string	Department2 int
	Filter	Filter	Filter	Filter	Filter	Filter
> 1	Noha Mohamed	321654	20	TAHA MOHAMEC	321654	10
> 2	Edward Hanna	321654	30	TAHA MOHAMEC	321654	10
> 3	Edward Hanna	321654	30	Noha Mohamed	321654	20

```
SELECT
    CONCAT(e1.Fname, ' ', e1.Lname) AS Employee1,
    e1.Superssn AS SupervisorSSN,
    e1.Dno AS Department1,
    CONCAT(e2.Fname, ' ', e2.Lname) AS Employee2,
    e2.Dno AS Department2
FROM
    Employee e1
JOIN
    Employee e2 ON e1.Superssn = e2.Superssn AND e1.Dno <> e2.Dno;
-- assume because lack of job title attribute
-- if the same supervisor === the same job
-- i don't care about name of department
```

Q	Employee1 varchar	SupervisorSSN string	Department1 int	Employee2 varchar	Department2 int
	Filter	Filter	Filter	Filter	Filter
> 1	TAHA MOHAMEC	321654	10	Noha Mohamed	20
> 2	TAHA MOHAMEC	321654	10	Edward Hanna	30
> 3	Noha Mohamed	321654	20	TAHA MOHAMEC	10
> 4	Noha Mohamed	321654	20	Edward Hanna	30
> 5	Edward Hanna	321654	30	TAHA MOHAMEC	10
> 6	Edward Hanna	321654	30	Noha Mohamed	20

Another method to simplify my table

If modify in data and let the new attribute which called job title

Here the output and query

```
WITH EmployeePairs AS (
    SELECT
        CONCAT(e1.Fname, ' ', e1.Lname) AS Employee1,
        e1.JobTitle,
        e1.Dno AS Department1,
        CONCAT(e2.Fname, ' ', e2.Lname) AS Employee2,
        e2.Dno AS Department2
    FROM
        Employee e1
    JOIN
        Employee e2 ON e1.JobTitle = e2.JobTitle AND e1.Dno <> e2.Dno
)
SELECT
    Employee1,
    JobTitle,
    Department1,
    Employee2,
    Department2
FROM
    EmployeePairs
WHERE
    Employee1 < Employee2;
```

```
SELECT
    CONCAT(e1.Fname, ' ', e1.Lname) AS Employee1,
    e1.JobTitle,
    e1.Dno AS Department1,
    CONCAT(e2.Fname, ' ', e2.Lname) AS Employee2,
    e2.JobTitle,
    e2.Dno AS Department2
FROM
    Employee e1
JOIN
    Employee e2 ON e1.JobTitle = e2.JobTitle AND e1.Dno <> e2.Dno;
-- i don't care about name of department
```

Q	Employee1 varchar	JobTitle varchar	Department1 int	Employee2 varchar	Department2 int
	Filter	Filter	Filter	Filter	Filter
> 1	Abdullah ibrahim	head	30	TAHA MOHAMEC	10
> 2	Hanaa Sobhy	Clerk	10	Mariam Adel	20
> 3	Ahmed Ali	Engineer	10	Noha Mohamed	20

Q	Employee1 varchar	JobTitle varchar	Department1 int	Employee2 varchar	JobTitle varchar	Department2 int
	Filter	Filter	Filter	Filter	Filter	Filter
> 1	TAHA MOHAMEC	head	10	Abdullah ibrahim	head	30
> 2	Abdullah ibrahim	head	30	TAHA MOHAMEC	head	10
> 3	Noha Mohamed	Engineer	20	Ahmed Ali	Engineer	10
> 4	Mariam Adel	Clerk	20	Hanaa Sobhy	Clerk	10
> 5	Hanaa Sobhy	Clerk	10	Mariam Adel	Clerk	20
> 6	Ahmed Ali	Engineer	10	Noha Mohamed	Engineer	20

Q11

```

SELECT
  CONCAT(Fname, ' ', Lname) AS fullname, salary,
  CASE
    WHEN salary > 2000 THEN "highsalary"
    WHEN salary BETWEEN 1000 AND 2000 THEN "MediumSalary"
    ELSE "Low Salary"
  END AS 'state of salary'
FROM employee; 8ms

```

	Q	fullname varchar	salary newdecimal	state of salary varchar
		Filter	Filter	Filter
> 1		Abdullah ibrahim	1600.00	MediumSalary
> 2		TAHA MOHAMED	1500.00	MediumSalary
> 3		Ahmed Ali	1300.00	MediumSalary
> 4		Hanaa Sobhy	800.00	Low Salary
> 5		Amr Omran	2500.00	highsalary
> 6		Edward Hanna	1500.00	MediumSalary
> 7		Maged Raooof	1000.00	MediumSalary
> 8		Mariam Adel	750.00	Low Salary
> 9		Noha Mohamed	1600.00	MediumSalary

Q12

```

SELECT city, pname,
CASE
  WHEN city="Cairo" THEN "High Risk"
  WHEN city=" Giza" THEN "Medium Risk"
  ELSE "Low Risk"
END AS 'risk level '
FROM project; 11ms

```

	Q	city varchar	pname varchar	risk level varchar
		Filter	Filter	Filter
> 1		Alex	AL Solimaniah	Low Risk
> 2		Giza	Al Rabwah	Medium Risk
> 3		Giza	Al Rawdah	Medium Risk
> 4		Giza	Al Rowad	Medium Risk
> 5		Cairo	Al Rehab	High Risk
> 6		Cairo	Pitcho american	High Risk
> 7		Cairo	Ebad El Rahman	High Risk

Q13

Q	fullname varchar	salary newdecimal	bonus newdecimal	salary after bonus newdecimal
	Filter	Filter	Filter	Filter
> 1	Abdullah ibrahim	1600.00	160.0000	1760.0000
> 2	TAHA MOHAMED	1500.00	150.0000	1650.0000
> 3	Ahmed Ali	1300.00	130.0000	1430.0000
> 4	Hanaa Sobhy	800.00	80.0000	880.0000
> 5	Amr Omran	2500.00	375.0000	2875.0000
> 6	Edward Hanna	1500.00	150.0000	1650.0000
> 7	Maged Raooof	1000.00	100.0000	1100.0000
> 8	Mariam Adel	750.00	75.0000	825.0000
> 9	Noha Mohamed	1600.00	160.0000	1760.0000

```

SELECT
  CONCAT(Fname, ' ', Lname) AS fullname, salary,
  CASE
    WHEN salary > 2000 THEN salary*0.15
    ELSE salary*0.10
  END AS 'bonus',
  CASE
    WHEN salary > 2000 THEN salary*1.15
    ELSE salary*1.10
  END AS 'salary after bonus'
FROM employee; 14ms

```

Q14

```
SELECT
    CONCAT(Fname, ' ', Lname) AS fullname, superssn,
    CASE
        WHEN Superssn <> 'null' THEN "Active"
        ELSE "Independent"
    END as 'status'
from employee; 23ms
```

	Q	fullname varchar	superssn string	status varchar
		Filter	Filter	Filter
	> 1	Abdullah ibrahim	968574	Active
	> 2	TAHA MOHAMED	321654	Active
	> 3	Ahmed Ali	223344	Active
	> 4	Hanaa Sobhy	223344	Active
	> 5	Amr Omran	(NULL)	Independent
	> 6	Edward Hanna	321654	Active
	> 7	Maged Raoof	968574	Active
	> 8	Mariam Adel	512463	Active
	> 9	Noha Mohamed	321654	Active

Q15

```
Run | New Tab
create view employee information
as
select * from employee; 50ms
```

Views (1)
employee_infor...

	Q	Fname varchar(255)	Lname varchar(255)	SSN char(6)	BDATE date	Address varchar(255)	Sex char(1)	Salary decimal(10,2)	Superssn char(6)	Dno int
		Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
	> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fahmy St. elma3	M	1600.00	968574	30
	> 2	TAHA	MOHAMED	102880	2003-03-29	15 mostafa Fahmy St. elma3	M	1500.00	321654	10
	> 3	Ahmed	Ali	112233	1965-01-01	15 Ali Fahmy St. Giza	M	1300.00	223344	10
	> 4	Hanaa	Sobhy	123456	1973-03-18	38 Abdel Khalik Tharwat St.	F	800.00	223344	10
	> 5	Amr	Omran	321654	1963-09-14	44 Hilopolis. Cairo	M	2500.00	(NULL)	(NULL)
	> 6	Edward	Hanna	512463	1972-08-19	18 Abaas El 3akaad St. Nasr	M	1500.00	321654	30
	> 7	Maged	Raoof	521634	1980-04-06	18 Kholosi st. Shobra. Cairo	M	1000.00	968574	30
	> 8	Mariam	Adel	669955	1982-06-12	269 El-Haram st. Giza	F	750.00	512463	20
	> 9	Noha	Mohamed	968574	1975-02-01	55 Orabi St. El Mohandiseer	F	1600.00	321654	20

Q16

```
Run | New Tab
create Procedure p1 (IN ID_EM INT )
begin
select * from employee WHERE ID_EM=SSN;
end;
CALL P1(102658); 13ms
```

	Q	Fname varchar	Lname varchar	SSN string	BDATE date	Address varchar	Sex string	Salary newdecimal	Superssn string	Dno int
		Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
	> 1	Abdullah	ibrahim	102658	2003-07-22	15 mostafa Fah	M	1600.00	968574	30

Q17/18

```
-- create funcation
> Run | New Tab
DELIMITER $$
> Run | Copy
create FUNCTION f1( salaryy int )
RETURNS VARCHAR(50)
DETERMINISTIC
begin
DECLARE e_result VARCHAR(50);
set e_result = CASE
  WHEN salaryy > 3000 THEN "Hight Salary"
  WHEN salaryy > 2000 THEN "Higher salary"
  ELSE "Lower Salary"
END ;
return e_result ;
end $$
> Run | New Tab
DELIMITER ;

-----
-- test funcatiom
> Run | New Tab | JSON
select concat(fname," ",lname)as full_name,salary,
f1(salary)as "SalaryCategory" from employee;
```

Q	full_name varchar	salary newdecimal	SalaryCategory varchar
	Filter	Filter	Filter
> 1	Abdullah ibrahim	1600.00	Lower Salary
> 2	TAHA MOHAMED	1500.00	Lower Salary
> 3	Ahmed Ali	1300.00	Lower Salary
> 4	Hanaa Sobhy	800.00	Lower Salary
> 5	Amr Omran	2500.00	Higher salary
> 6	Edward Hanna	1500.00	Lower Salary
> 7	Maged Raoof	1000.00	Lower Salary
> 8	Mariam Adel	750.00	Lower Salary
> 9	Noha Mohamed	1600.00	Lower Salary

Thank you