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Description: Querying a Relational Database COMPANY database using Microsoft SQL

1. Add yourself into the database and Retrieve the information: Add yourself and the related info into Employee, Dependent, and Works\_On.  
Retrieve all the entries you just added with only 1 Select statement.

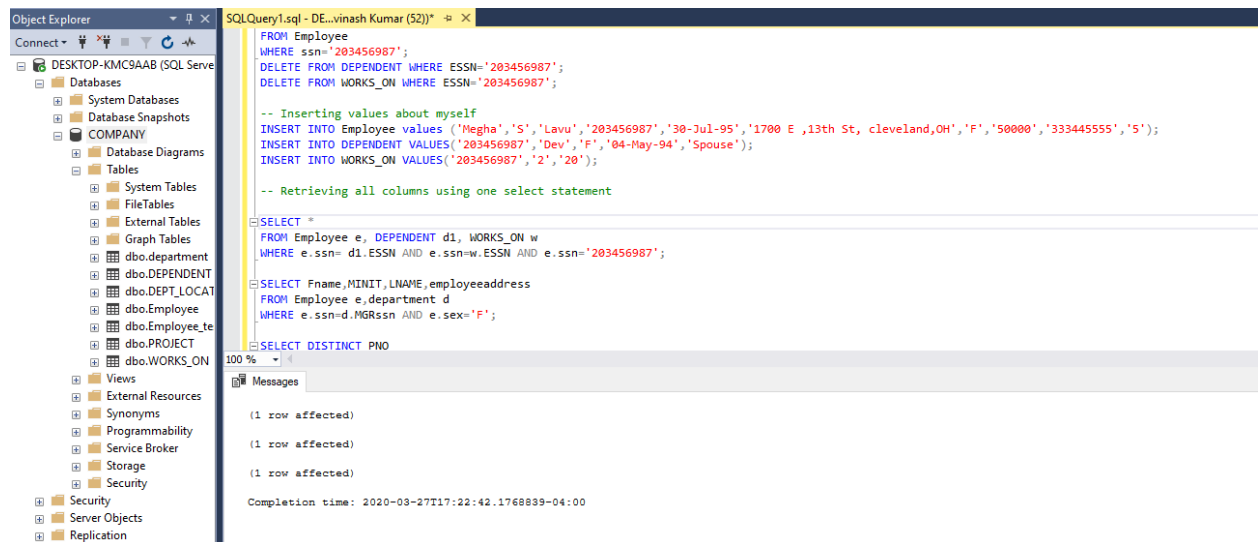
Answer:

-- Inserting values about myself

```
INSERT INTO Employee values ('Megha','S','Lavu','203456987','30-Jul-95','1700 E ,13th  
St, cleveland,OH','F','50000','333445555','5');
```

```
INSERT INTO DEPENDENT VALUES('203456987','Dev','F','04-May-94','Spouse');
```

```
INSERT INTO WORKS_ON VALUES('203456987','2','20');
```



-- Retrieving all columns using one select statement

```
SELECT *  
FROM Employee e, DEPENDENT d1, WORKS_ON w  
WHERE e.ssn= d1.ESSN AND e.ssn=w.ESSN AND e.ssn='203456987';
```

## SS CHUNG LAB ASSIGNMENT 3

The screenshot shows the SQL Server Enterprise Manager interface. The left pane displays the Object Explorer with the database structure. The right pane shows a query window with the following SQL code:

```

FROM Employee
WHERE ssn='203456987';
DELETE FROM DEPENDENT WHERE ESSN='203456987';
DELETE FROM WORKS_ON WHERE ESSN='203456987';

-- Inserting values about myself
INSERT INTO Employee values ('Megha','S','Lavu','203456987','30-Jul-95','1700 E ,13th St, cleveland,OH','F','50000','333445555','5');
INSERT INTO DEPENDENT VALUES('203456987','Dev','F','04-May-94','Spouse');
INSERT INTO WORKS_ON VALUES('203456987','2','20');

-- Retrieving all columns using one select statement
SELECT *
FROM Employee e, DEPENDENT d1, WORKS_ON w
WHERE e.ssn= d1.ESSN AND e.ssn=w.ESSN AND e.ssn='203456987';

SELECT Fname,MINIT,LNAME,employeeaddress
FROM Employee e,department d
WHERE e.ssn=d.MGRssn AND e.sex='F';

SELECT DISTINCT PNO

```

The Results pane shows a single row of data:

Fname	MINIT	LNAME	ssn	bdate	employeeaddress	sex	employeesalary	superssn	DNO	ESSN	DEPENDENT_NAME	SEX	BOATE	RELATIONSHIP	ESSN	PNO	NHoi	
1	Megha	S	Lavu	203456987	1995-07-30	1700 E, 13th St, cleveland, OH	F	50000	333445555	5	203456987	Dev	F	1994-05-04	Spouse	203456987	2	20

## 2. Write SQL Select statements to retrieve data in the followings:

**Q1: Retrieve the name and address of all the female managers.**

**Answer:**

--Q1 ALL FEMALE Managers Name and Address

SELECT Fname, MINIT, LNAME, employeeaddress

FROM Employee e, department d

WHERE e.ssn=d.MGRssn AND e.sex='F';

The screenshot shows the SQL Server Enterprise Manager interface. The left pane displays the Object Explorer with the database structure. The right pane shows a query window with the following SQL code:

```

FROM Employee
WHERE ssn='203456987';
DELETE FROM DEPENDENT WHERE ESSN='203456987';
DELETE FROM WORKS_ON WHERE ESSN='203456987';

-- Inserting values about myself
INSERT INTO Employee values ('Megha','S','Lavu','203456987','30-Jul-95','1700 E ,13th St, clev
INSERT INTO DEPENDENT VALUES('203456987','Dev','F','04-May-94','Spouse');
INSERT INTO WORKS_ON VALUES('203456987','2','20');

-- Retrieving all columns using one select statement
SELECT *
FROM Employee e, DEPENDENT d1, WORKS_ON w
WHERE e.ssn= d1.ESSN AND e.ssn=w.ESSN AND e.ssn='203456987';

--Q1 ALL FEMALE Managers Name and Address
SELECT Fname,MINIT,LNAME,employeeaddress
FROM Employee e,department d
WHERE e.ssn=d.MGRssn AND e.sex='F';

```

The Results pane shows a single row of data:

Fname	MINIT	LNAME	employeeaddress
1	Jennifer	S	Wallace 291 Berry,Bellarie,TX

**Q2: Make a list of all project numbers for projects that involve an employee whose last name is 'Smith', either as a worker or as a manager of the department that controls the project.**

**Answer:**

--Q2 Project numbers whose Last name is smith and works either as a worker or manager

SELECT DISTINCT PNO

FROM Employee e, WORKS\_ON w

WHERE e.LNAME='Smith' AND e.ssn= w.ESSN --as a worker

UNION

SELECT DISTINCT PNO

FROM Employee e, department d, PROJECT p, WORKS\_ON w

WHERE e.LNAME='Smith' AND e.ssn= d.MGRssn AND d.Dnumber=p.DNUM; -- as a

Manager

The screenshot shows the SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure for 'DESKTOP-KMC9AAB (SQL Serve)'. The main window shows a SQL query titled 'SQLQuery1.sql - DE...vinash Kumar (52)\*'. The query is as follows:

```
-- Retrieving all columns using one select statement
SELECT *
FROM Employee e, DEPENDENT d1, WORKS_ON w
WHERE e.ssn= d1.ESSN AND e.ssn=w.ESSN AND e.ssn='203456987';

--Q1 ALL FEMALE Managers Name and Address
SELECT Fname,MINIT,LNAME,employeeaddress
FROM Employee e,department d
WHERE e.ssn=d.MGRssn AND e.sex='F';

--Q2 Project numbers whose Last name is smith and works either as a worker or manager
SELECT DISTINCT PNO
FROM Employee e, WORKS_ON w
WHERE e.LNAME='Smith' AND e.ssn= w.ESSN --as a worker
UNION
SELECT DISTINCT PNO
FROM Employee e, department d,PROJECT p,WORKS_ON w
WHERE e.LNAME='Smith' AND e.ssn= d.MGRssn AND d.Dnumber=p.DNUM; -- as a Manager
```

The Results pane at the bottom shows the output of the query:

PNO
1
2

**Q3: Retrieve the name and address and his/her department name of the highest ranked employee who does not report to anybody in the company.**

**Answer:**

--Q3 highest ranked person who doesn't have supervisor  
**SELECT** Fname,MINIT,LNAME,employeeaddress,Dname  
**FROM** Employee e,department d  
**where** e.DNO=d.Dnumber **AND** (e.superssn **IS NULL**) ;

The screenshot shows the SQL Server Enterprise Manager interface. On the left, the Object Explorer displays the database structure for 'DESKTOP-KMC9AAB (SQL Server)'. The 'COMPANY' database is expanded, showing tables like 'dbo.department', 'dbo.Employee', and 'dbo.WORKS\_ON'. The main window displays a SQL query in 'SQLQuery1.sql'. The query is as follows:

```
--Q2 Project numbers whose Last name is smith and works either as a worker or manager
SELECT DISTINCT PNO
FROM Employee e, WORKS_ON w
WHERE e.LNAME='Smith' AND e.ssn= w.ESSN --as a worker
UNION
SELECT DISTINCT PNO
FROM Employee e, department d,PROJECT p,WORKS_ON w
WHERE e.LNAME='Smith' AND e.ssn= d.MGRssn AND d.Dnumber=p.DNUM; -- as a Manager

--Q3 highest ranked person who doesn't have supervisor
SELECT Fname,MINIT,LNAME,employeeaddress,Dname
FROM Employee e,department d
where e.DNO=d.Dnumber AND (e.superssn IS NULL) ;

SELECT DISTINCT e.Fname,e.LNAME, s.Fname, s.LNAME
FROM Employee e,department d,Employee s
where (e.superssn IS NULL);
UNION
```

Below the query, the 'Results' tab shows the output of the query. The results are as follows:

	Fname	MINIT	LNAME	employeeaddress	Dname
1	James	E	Borg	450 Stone,Houston, TX	Headquarters

**Q4: For each department, list all the employees who are working in the department with the employee's first and last name and first and last name of his or her immediate supervisor. List the result in the order of each department number and department name. Extra points: Include all the employees who do not have any supervisor as well in the list.**

**Answer:**

--Q4

```
SELECT d.Dnumber, d.DName, e.Fname, e.LNAME, s.Fname, s.LNAME
FROM EMPLOYEE e LEFT OUTER JOIN EMPLOYEE s ON s.SSN = e.Superssn, department d
WHERE d.DNumber= e.DNO
ORDER BY d.DNUMBER, d.DName;
```

The screenshot shows the SQL Server Enterprise Manager interface. On the left, the Object Explorer displays the database structure for 'DESKTOP-KMC9AAB (SQL Serve)'. The main window shows a SQL query in the 'SQLQuery1.sql' file. The query is as follows:

```
SELECT Fname,MINIT,LNAME,employeeaddress,Dname
FROM Employee e,department d
where e.DNO=d.Dnumber AND (e.superssn IS NULL) ;

SELECT d.Dnumber,d.DName,e.Fname,e.LNAME, s.Fname, s.LNAME
from Employee e,Employee s,department d
WHERE e.superssn=s.ssn AND e.DNO=d.Dnumber
ORDER BY d.Dnumber, d.DName;

--Q4
SELECT d.Dnumber, d.DName, e.Fname, e.LNAME, s.Fname, s.LNAME
FROM EMPLOYEE e LEFT OUTER JOIN EMPLOYEE s ON s.SSN = e.Superssn, department d
WHERE d.DNumber= e.DNO
ORDER BY d.DNUMBER, d.DName;

-- ALL Managers who doesn't have dependents

SELECT DISTINCT Fname,MINIT,LNAME
FROM Employee e, department d, DEPENDENT d1
```

The 'Results' tab shows the output of the query, displaying a table with 7 columns: Dnumber, DName, Fname, LNAME, Fname, and LNAME. The results are as follows:

	Dnumber	DName	Fname	LNAME	Fname	LNAME
1	1	Headquarters	James	Borg	NULL	NULL
2	4	Administration	Jennifer	Wallace	James	Borg
3	4	Administration	Ahmad	Jabbar	Jennifer	Wallace
4	4	Administration	Alicia	Zelaya	Jennifer	Wallace
5	5	Research	John	Smith	Jennifer	Wallace
6	5	Research	Megha	Lavu	Franklin	Wong
7	5	Research	Franklin	Wong	James	Borg
8	5	Research	Joyce	English	Franklin	Wong
9	5	Research	Ramesh	Narayan	Franklin	Wong

**Q5: List the name of managers who have no dependents.**

**Answer:**

-- ALL Managers who doesn't have dependents

```
SELECT DISTINCT Fname,MINIT,LNAME
FROM Employee e, department d, DEPENDENT d1
WHERE e.ssn=d.MGRssn
EXCEPT
SELECT DISTINCT Fname,MINIT,LNAME
FROM Employee e, department d, DEPENDENT d1
WHERE e.ssn=d1.ESSN
```

The screenshot shows the SQL Server Enterprise Manager interface. On the left, the Object Explorer displays the database structure for 'DESKTOP-KMC9AAB (SQL Server)'. The 'COMPANY' database is expanded, showing 'Tables' including 'dbo.department', 'dbo.DEPENDENT', 'dbo.DEPT\_LOCAT', 'dbo.Employee', 'dbo.Employee\_te', 'dbo.PROJECT', and 'dbo.WORKS\_ON'. The main window displays a SQL query in 'SQLQuery1.sql'. The query is as follows:

```
-- ALL Managers who doesn't have dependents
SELECT DISTINCT Fname,MINIT,LNAME
FROM Employee e, department d, DEPENDENT d1
WHERE e.ssn=d.MGRssn
EXCEPT
SELECT DISTINCT Fname,MINIT,LNAME
FROM Employee e, department d, DEPENDENT d1
WHERE e.ssn=d1.ESSN
```

Below the query editor, the 'Results' tab shows the output of the query. The results are displayed in a table with the following data:

	Fname	MINIT	LNAME
1	James	E	Borg