

Company Database Schema

Here is the schema of a company database, please implement it on any RDBMS you like and then try to create the following requests (queries):

Employee:

Fname	Lname	SSN	BDATE	Address	Gender	Salary	Superssn	Dno
Ahmed	Ali	112233	1/1/1965	15 Ali Fahmy St. Giza	M	1300	223344	10
Kamel	Mohamed	223344	15/10/1970	38 Mohy el dien abo el Ezz St.Cairo	M	1800	321654	10
Hanaa	Sobhy	123456	18/3/1973	38 Abdel Khalik Tharwat St. Downtown.Cairo	F	800	223344	10
Amr	Omran	321654	14/9/1963	44 Hilopolis.Cairo	M	2500	null	null
Noha	Mohamed	968574	1/2/1975	55 Orabi St. El Mohandiseen .Cairo	F	1600	321654	20
Edward	Hanna	512463	19/8/1972	18 Abaas El 3akaad St. Nasr City.Cairo	M	1500	321654	30
Mariam	Adel	669955	12/6/1982	269 El-Haram st. Giza	F	750	512463	20
Maged	Raoof	521634	6/4/1980	18 Kholosi st.Shobra.Cairo	M	1000	968574	30

Department

Dname	DNumber	MGRSSN	MGRStartdate
DP1	10	223344	1/1/2005
DP2	20	968574	1/3/2006
DP3	30	512463	1/6/2006

Works for

ESSN	Pno	Hours
223344	100	10
223344	200	10
223344	300	10
112233	100	40
968574	400	15
968574	700	15
968574	300	10
669955	400	20
223344	500	10
669955	700	7
669955	300	10
512463	500	10
512463	600	25
521634	500	10
521634	600	20
521634	300	6
521634	400	4

Project

Pname	Pnumber	Plocation	City	Dnum
AL Solimaniah	100	Cairo_Alex Road	Alex	10
Al Rabwah	200	6 th of October City	Giza	10
Al Rawdah	300	Zaied City	Giza	10
Al Rowad	400	Cairo_Faiyom Road	Giza	20
Al Rehab	500	Nasr City	Cairo	30
Pitcho american	600	Maady	Cairo	30
Ebad El Rahman	700	Ring Road	Cairo	20

Dependent

ESSN	Dependent_name	Gender	Bdate
123456	Hala Saied Ali	F	18/10/1970
223344	Ahmed Kamel Shawki	M	27/3/1998
223344	Mona Adel Mohamed	F	25/4/1975
321654	Ramy Amr Omran	M	26/1/1990
321654	Omar Amr Omran	M	30/3/1993
321654	Sanaa Gawish	F	16/5/1973
512463	Sara Edward	F	15/9/2001
512463	Nora Ghaly	F	22/6/1976

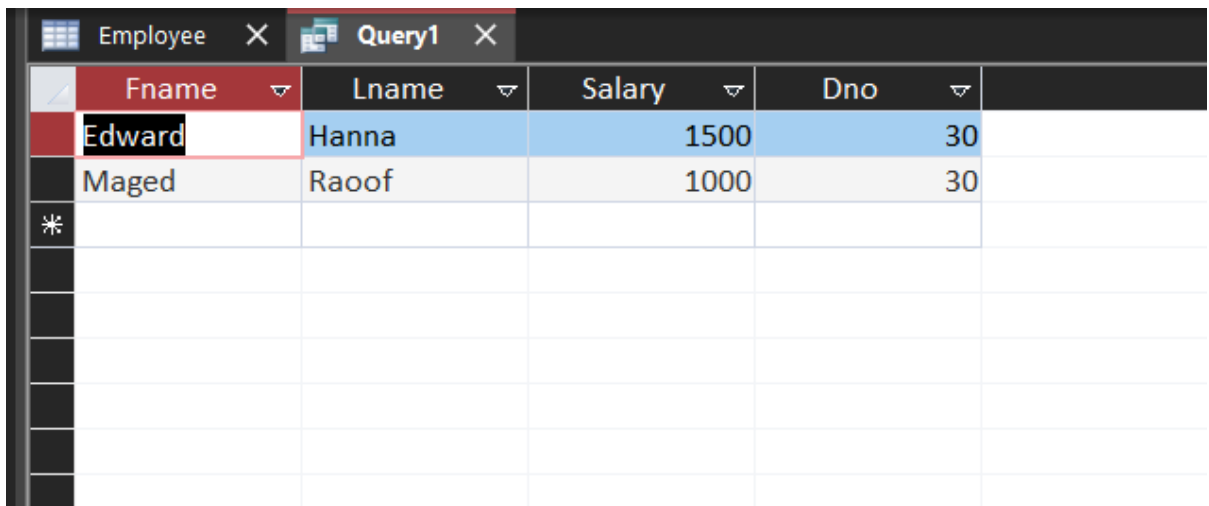
Queries:

1. Display the employee **First name**, **last name**, **Salary** and **Department number** in **department 30** whose **salary from 1000 to 2000 LE monthly**

```
SELECT Fname, Lname, Salary, Dno
```

```
FROM Employee
```

```
WHERE Dno = 30 AND Salary BETWEEN 1000 AND 2000;
```

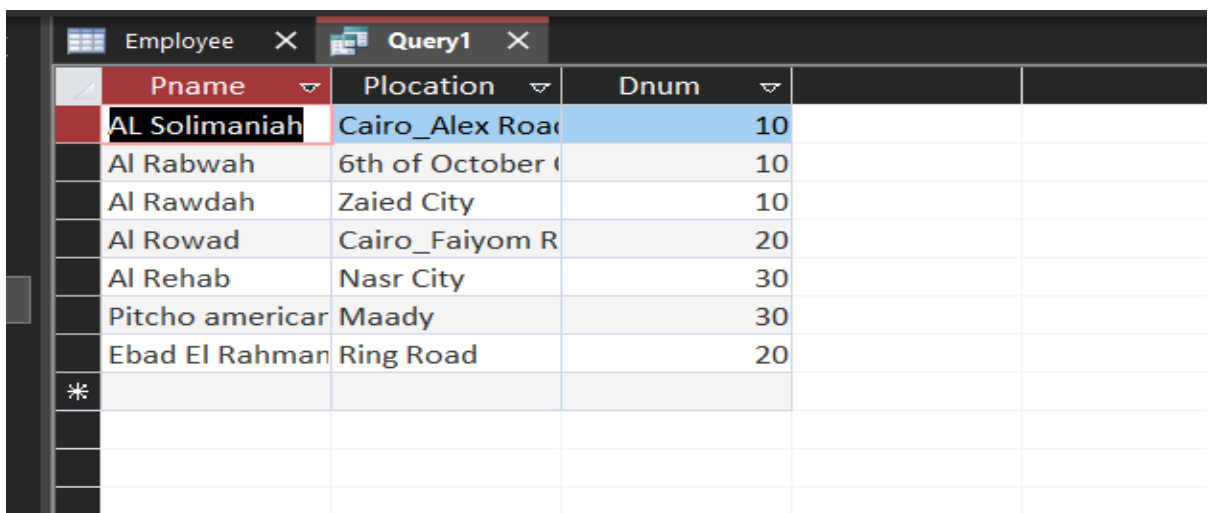


Fname	Lname	Salary	Dno
Edward	Hanna	1500	30
Maged	Raoof	1000	30

2. Display all the **projects names**, **locations** and the **department number which is managed by it**.

```
SELECT Pname, Plocation, Dnum
```

```
FROM Project;
```



Pname	Plocation	Dnum
AL Solimaniah	Cairo_Alex Road	10
Al Rabwah	6th of October City	10
Al Rawdah	Zaied City	10
Al Rowad	Cairo_Faiyom Road	20
Al Rehab	Nasr City	30
Pitcho american	Maady	30
Ebad El Rahman	Ring Road	20

3. If you know that the company policy is to pay an annual commission for each employee which specific percent equals 10% of his/her annual salary .

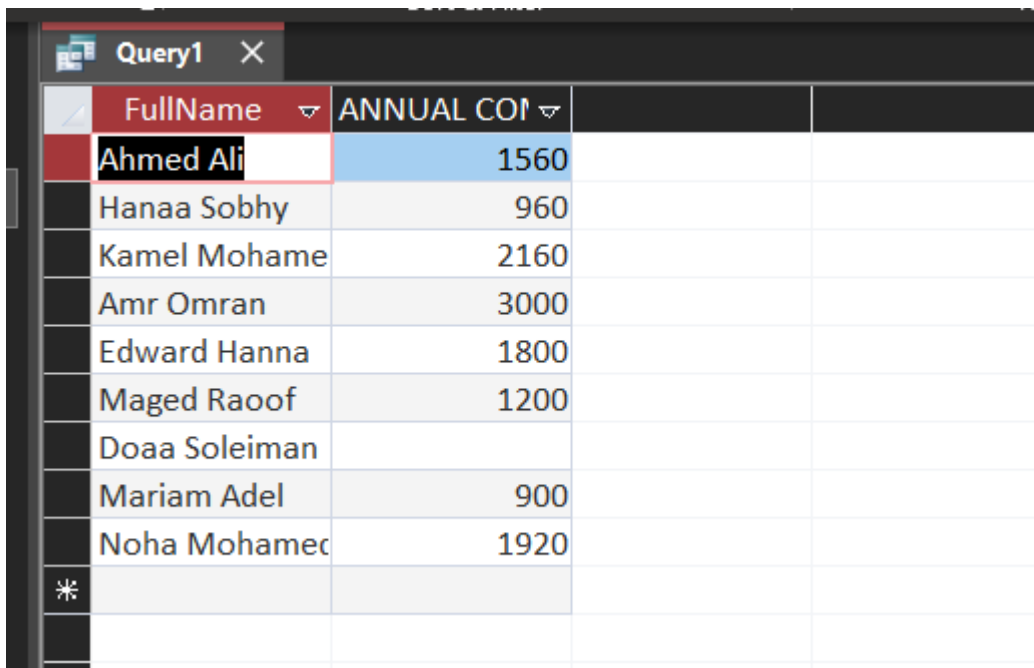
Display each **employee full name** and his **annual commission** in an **ANNUAL COMM** column (alias).

SELECT

Fname & " " & Lname AS FullName,

Salary * 12 * 0.1 AS [ANNUAL COMM]

FROM Employee;



The screenshot shows a window titled 'Query1' displaying the results of the SQL query. The table has two columns: 'FullName' and 'ANNUAL COMM'. The data is as follows:

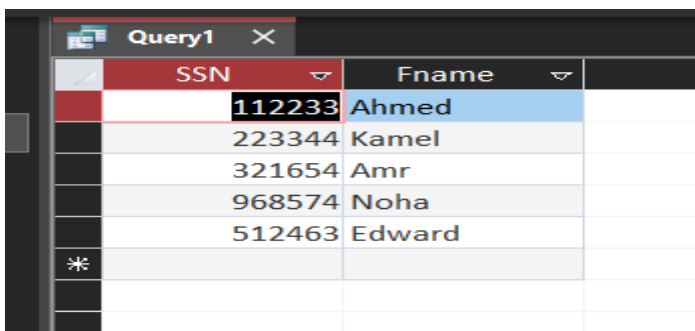
FullName	ANNUAL COMM
Ahmed Ali	1560
Hanaa Sobhy	960
Kamel Mohame	2160
Amr Omran	3000
Edward Hanna	1800
Maged Raoof	1200
Doaa Soleiman	
Mariam Adel	900
Noha Mohamec	1920

4. Display the **employees Id**, **fname** who earns more than 1000 LE.

SELECT SSN, Fname

FROM Employee

WHERE Salary > 1000;

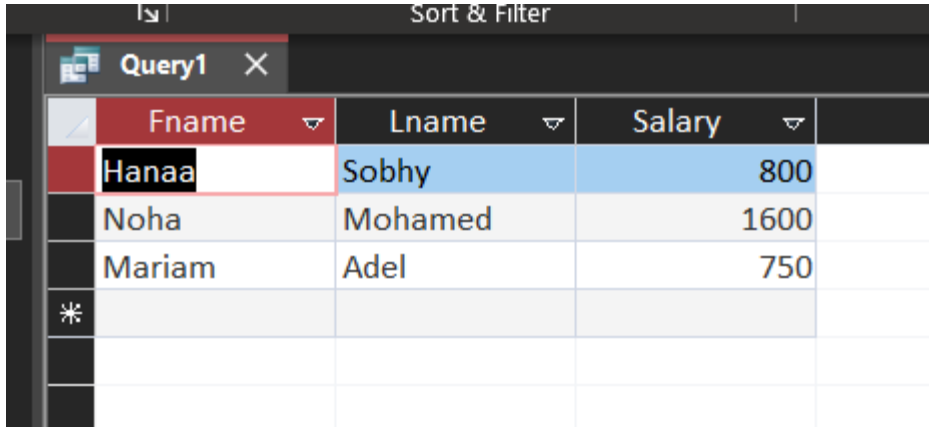


The screenshot shows a window titled 'Query1' displaying the results of the SQL query. The table has two columns: 'SSN' and 'Fname'. The data is as follows:

SSN	Fname
112233	Ahmed
223344	Kamel
321654	Amr
968574	Noha
512463	Edward

5. Display the **names** and **salaries** of **the female employees**

```
SELECT Fname, Lname, Salary
FROM Employee
WHERE Gender = 'F';
```

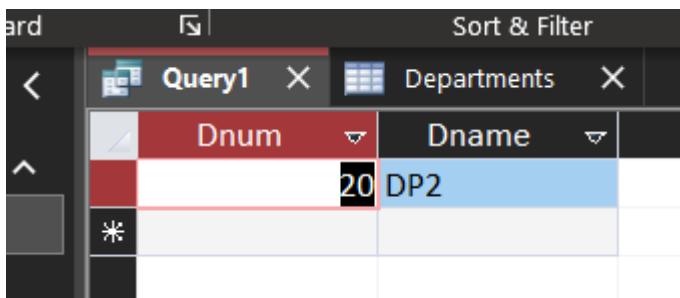


The screenshot shows a query window titled 'Query1' with a 'Sort & Filter' tab. The result set is a table with three columns: 'Fname', 'Lname', and 'Salary'. The data rows are:

Fname	Lname	Salary
Hanaa	Sobhy	800
Noha	Mohamed	1600
Mariam	Adel	750

6. Display each **department id**, **name** which **managed by a manager with id equals 968574.**

```
SELECT Dnum, Dname
FROM Departments
WHERE MGRSSN = 968574;
```

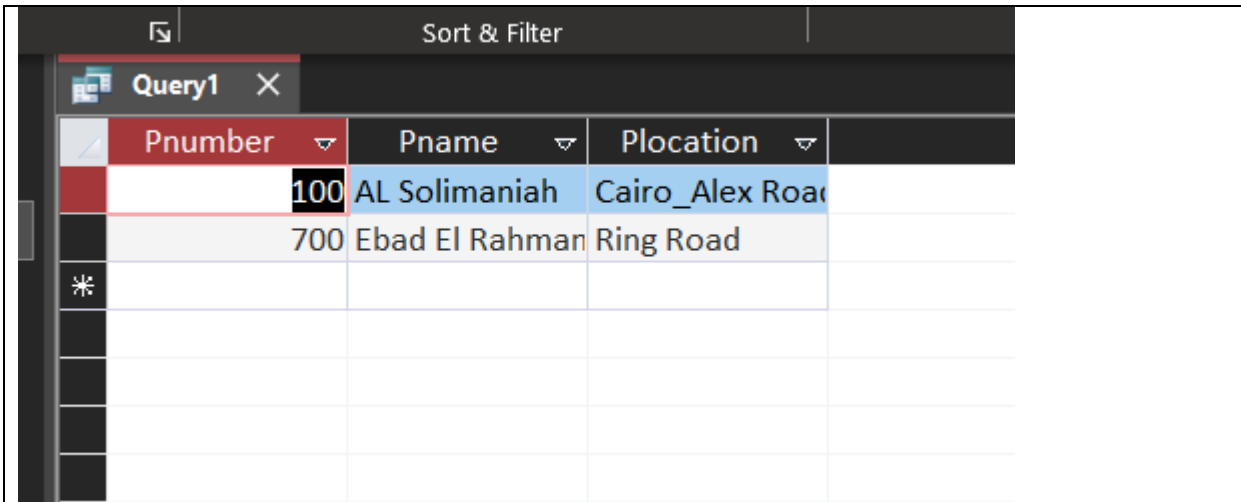


The screenshot shows a query window titled 'Query1' with a 'Sort & Filter' tab. The result set is a table with two columns: 'Dnum' and 'Dname'. The data row is:

Dnum	Dname
20	DP2

7. Display the **project id**, **name** and **location** of the projects which **controlled with department 10 or 20, and location of the projects in Cairo or Alex city**

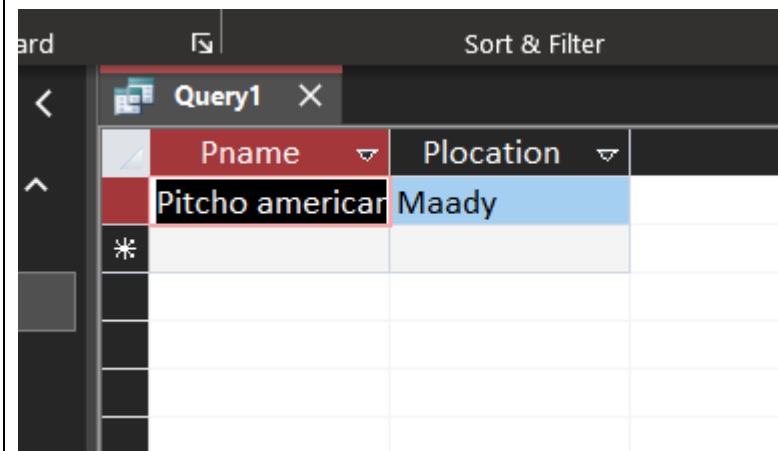
```
SELECT Pnumber, Pname, Plocation
FROM Project
WHERE
Dnum IN (10, 20)
AND City IN ('Cairo', 'Alex');
```



Pnumber	Pname	Plocation
100	AL Solimaniah	Cairo_Alex Road
700	Ebad El Rahman	Ring Road

8. Display the **Projects name, locations of the projects with a project name starts with "p" letter.**

```
SELECT Pname, Plocation
FROM Project
WHERE Pname LIKE "P*";
```



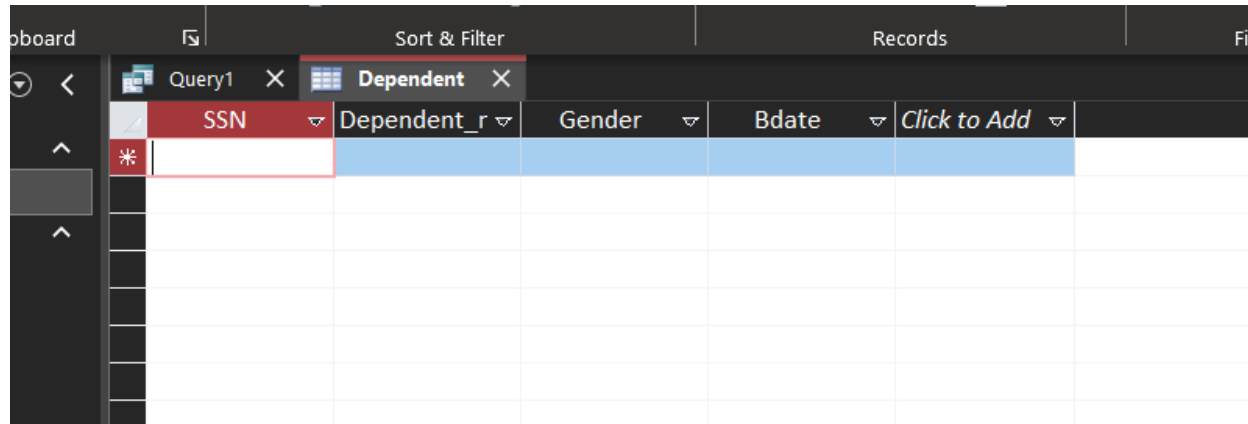
Pname	Plocation
Pitcho american	Maady

Data Definition Language:

Create the **dependent** table and create the relationship with **employee** table
Then Insert 3 rows only

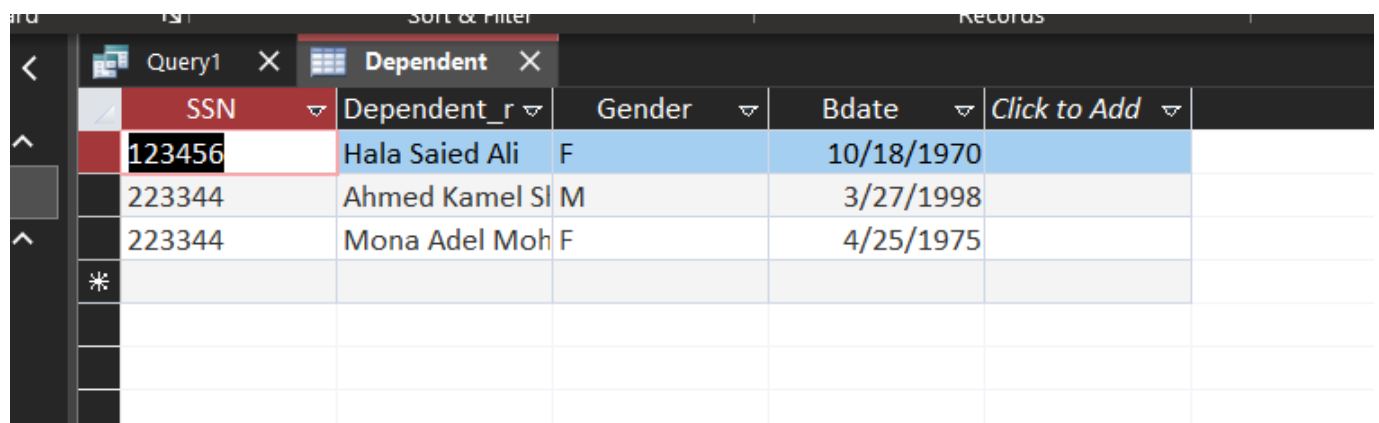
a. CREATE TABLE Dependent (
SSN TEXT(9),

```
Dependent_name TEXT(50),
Gender TEXT(1),
Bdate DATE,
PRIMARY KEY (SSN, Dependent_name)
);
```



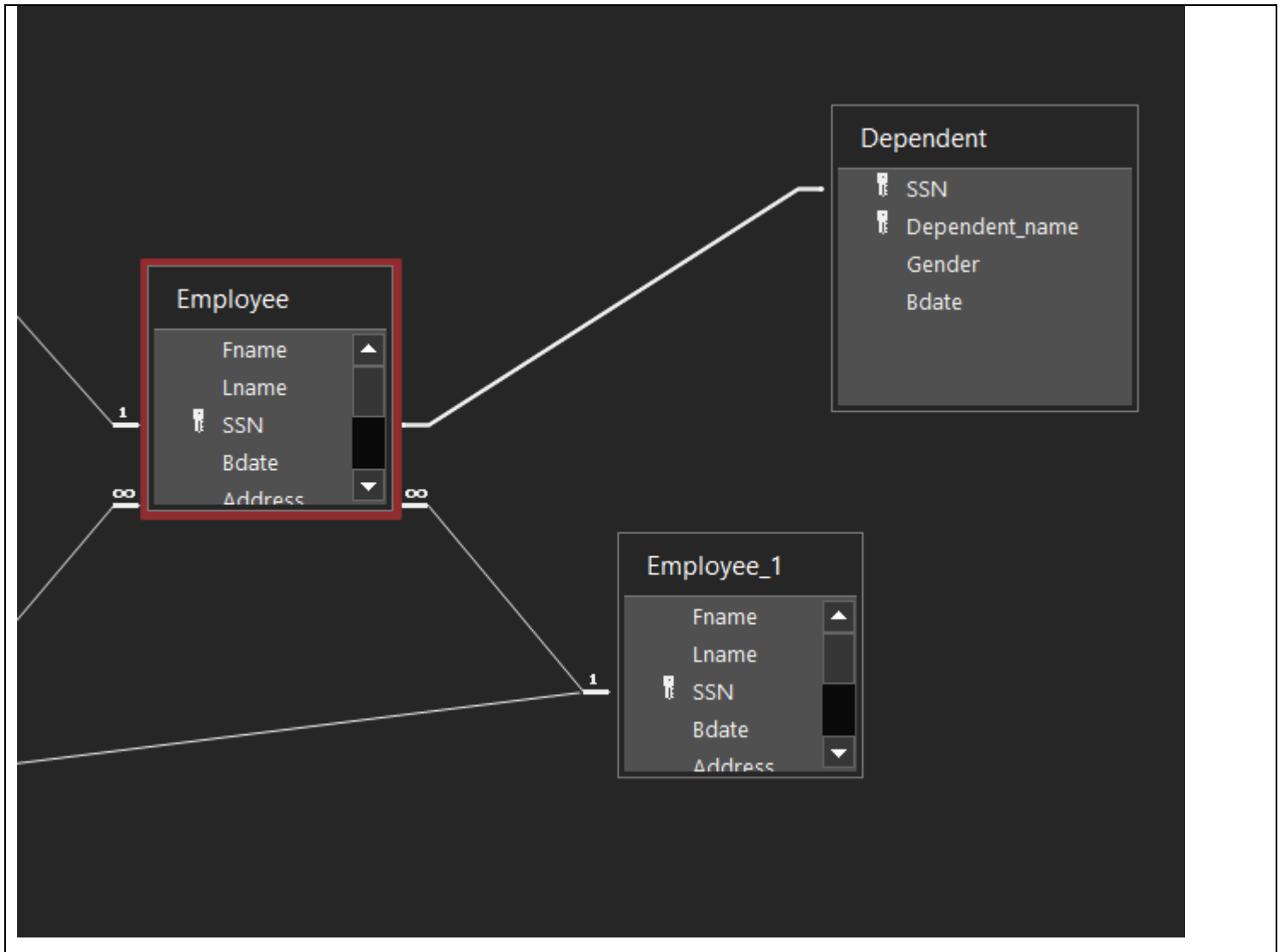
SSN	Dependent_name	Gender	Bdate	Click to Add
*				

- b. INSERT INTO Dependent (SSN, Dependent_name, Gender, Bdate)
VALUES ('123456', 'Hala Saied Ali', 'F', #10/18/1970#);
INSERT INTO Dependent (SSN, Dependent_name, Gender, Bdate)
VALUES ('223344', 'Ahmed Kamel Shawki', 'M', #3/27/1998#);
INSERT INTO Dependent (SSN, Dependent_name, Gender, Bdate)
VALUES ('223344', 'Mona Adel Mohamed', 'F', #4/25/1975#);



SSN	Dependent_name	Gender	Bdate	Click to Add
123456	Hala Saied Ali	F	10/18/1970	
223344	Ahmed Kamel Shawki	M	3/27/1998	
223344	Mona Adel Mohamed	F	4/25/1975	
*				

- c. **define the relationship:**
Open "**Database Tools**" and click "**Relationships**"
In the **Relationships window**, drag the SSN field from the Employee table to the SSN field in the Dependent table.



Data Manipulating Language:

1. Insert new employee with **your personal data**, you will be in **department number 30**, your **SSN = 666666** & **Superssn = 112233**.

INSERT INTO Employee (Fname, Lname, SSN, BDATE, Address, Gender, Salary, Superssn, Dno)
VALUES ('Abdallah', 'Ramadan', '666666', #1/12/1999#, '8 El sahaba st. sidi gaber', 'M', 2000, '112233', 30);

Fname	Lname	SSN	Bdate	Address	gender	Salary	Superssn	Dno	Click to Add
Ahmed	Ali	112233	1/1/1965	15 Ali fahmy St.	M	1300	223344	10	
Hanaa	Sobhy	123456	3/18/1973	38 Abdel Khalik	F	800	223344	10	
Kamel	Mohamed	223344	10/15/1970	38 Mohy el dien	M	1800	321654	10	
Amr	Omran	321654	9/14/1963	44 Hilopolis.Cai	M	2500			
Edward	Hanna	512463	8/19/1972	18 Abaas El 3ak	M	1500	321654	30	
Maged	Raof	521634	6/4/1980	18 Kholosi st.Sh	M	1000	968574	30	
Abdallah	Ramadan	666666	1/12/1999	8 El sahaba st. s	M	2000	112233	30	
Mariam	Adel	669955	12/6/1982	269 El-Haram st	F	750	512463	20	
Noha	Mohamed	968574	1/2/1975	55 Orabi St. El N	F	1600	321654	20	

2. Insert another employee with **personal data your friend** as new employee in **department number 30** , **SSN = 555555**, but **don't enter any value for salary or manager number to him**.

INSERT INTO Employee (Fname, Lname, SSN, BDATE, Address, Gender, Dno)
VALUES ('Adham',' Samer', '555555', #10/3/2001#, 'Acid Compound, Green Plaza, Sidi Gaber', 'M', 30);

Fname	Lname	SSN	Bdate	Address	gender	Salary	Superssn	Dno	Click to Add
Ahmed	Ali	112233	1/1/1965	15 Ali fahmy St.	M	1300	223344	10	
Hanaa	Sobhy	123456	3/18/1973	38 Abdel Khalik	F	800	223344	10	
Kamel	Mohamed	223344	10/15/1970	38 Mohy el dien	M	1800	321654	10	
Amr	Omran	321654	9/14/1963	44 Hilopolis.Cai	M	2500			
Edward	Hanna	512463	8/19/1972	18 Abaas El 3ak	M	1500	321654	30	
Maged	Raof	521634	6/4/1980	18 Kholosi st.Sh	M	1000	968574	30	
Adham	Samer	555555	10/3/2001	Acid Compound	M			30	
Abdallah	Ramadan	666666	1/12/1999	8 El sahaba st. s	M	2000	112233	30	
Mariam	Adel	669955	12/6/1982	269 El-Haram st	F	750	512463	20	
Noha	Mohamed	968574	1/2/1975	55 Orabi St. El N	F	1600	321654	20	

3. In the **department** table insert new department called "**DEPT IT**", with **id 100**, **MgrSSN = 112233** as a manager for this department. The **start date for this manager is '08/12/2006'**

```
INSERT INTO Departments (Dname, Dnum, MGRSSN, [MGRStart Date])
VALUES ('DEPT IT', 100, '112233', #12/8/2006#);
```

	Dname ▼	Dnum ▼	MGRSSN ▼	MGRStart Da ▼	Click to Add ▼	
+	DP1	10	223344	1/1/2005		
+	DP2	20	968574	1/3/2006		
+	DP3	30	512463	1/6/2006		
+	DEPT IT	100	112233	12/8/2006		
*						

4. Do what is required if you know that: **Mrs. Noha Mohamed moved to be the manager of the new department (id = 100)**, and they give her position to your friend

Steps:

- Your friend will be the manager of **Dept 20** (her previous department)
- Update her record in your database to be a manager of **department 100**
- Update your friend data, add yourself as a supervisor for him (supervised by you)**

- UPDATE Departments
SET MGRSSN = '555555'
WHERE Dnum = 20;

	Dname	Dnum	MGRSSN	MGRStart Da	Click to Add
+	DP1	10	223344	1/1/2005	
+	DP2	20	555555	1/3/2006	
+	DP3	30	512463	1/6/2006	
+	DEPT IT	100	112233	12/8/2006	
*					

b. UPDATE Departments

SET MGRSSN = '968574'

WHERE Dnum = 100;

	Dname	Dnum	MGRSSN	MGRStart Da	Click to Add
+	DP1	10	223344	1/1/2005	
+	DP2	20	555555	1/3/2006	
+	DP3	30	512463	1/6/2006	
+	DEPT IT	100	968574	12/8/2006	
*					

c. UPDATE Employee

SET Superssn = 666666

WHERE SSN = 555555;

	Fname	Lname	SSN	Bdate	Address	gender	Salary	Superssn	Dno	Click to Add
+	Ahmed	Ali	112233	1/1/1965	15 Ali fahmy St.	M	1300	223344	10	
+	Hanaa	Sobhy	123456	3/18/1973	38 Abdel Khalik	F	800	223344	10	
+	Kamel	Mohamed	223344	10/15/1970	38 Mohy el dien	M	1800	321654	10	
+	Amr	Omran	321654	9/14/1963	44 Hilopolis, Cai	M	2500			
+	Edward	Hanna	512463	8/19/1972	18 Abaas El 3ak	M	1500	321654	30	
+	Maged	Raouf	521634	6/4/1980	18 Kholosi st. Sh	M	1000	968574	30	
+	Adham	Samer	555555	10/3/2001	Acid Compound	M		666666	30	
+	Abdallah	Ramadan	666666	1/12/1999	8 El sahaba st. s	M	2000	112233	30	
+	Mariam	Adel	669955	12/6/1982	269 El-Haram st	F	750	512463	20	
+	Noha	Mohamed	968574	1/2/1975	55 Orabi St. El N	F	1600	321654	20	
*										

5. Unfortunately, the company ended the contract with **Mr.Kamel Mohamed** so **try to delete his data from your database**, in case you need, you can be temporary in his position.

Upgrade your salary by **20 percent** of its last value.

- UPDATE Employee
- SET Superssn = 666666
- WHERE Superssn = 223344;

	Fname	Lname	SSN	Bdate	Address	gender	Salary	Superssn	Dno	Click to Add
+	Ahmed	Ali	112233	1/1/1965	15 Ali fahmy St.	M	1300	666666	10	
+	Hanaa	Sobhy	123456	3/18/1973	38 Abdel Khalik	F	800	666666	10	
+	Kamel	Mohamed	223344	10/15/1970	38 Mohy el dien	M	1800	321654	10	
+	Amr	Omran	321654	9/14/1963	44 Hilopolis.Cai	M	2500			
+	Edward	Hanna	512463	8/19/1972	18 Abaas El 3ak	M	1500	321654	30	
+	Maged	Raouf	521634	6/4/1980	18 Kholosi st.Sh	M	1000	968574	30	
+	Adham	Samer	555555	10/3/2001	Acid Compound	M		666666	30	
+	Abdallah	Ramadan	666666	1/12/1999	8 El sahaba st. s	M	2000	112233	30	
+	Mariam	Adel	669955	12/6/1982	269 El-Haram st	F	750	512463	20	
+	Noha	Mohamed	968574	1/2/1975	55 Orabi St. El N	F	1600	321654	20	
*										

Then

UPDATE Dependent

SET SSN = '666666'

WHERE SSN = '223344';

	SSN	Dependent_name	Gender	Bdate	Click to Add
+	123456	Hala Saied Ali	F	10/18/1970	
+	666666	Ahmed Kamel Shawki	M	3/27/1998	
+	666666	Mona Adel Mohamed	F	4/25/1975	
*					

Then

UPDATE Works_for

SET ESSn = 666666

WHERE ESSn = 223344;

	ESSn	Pno	Hours	Click to Add
+	112233	100	40	
+	666666	100	10	
+	666666	200	10	
+	666666	300	10	
+	666666	500	10	
+	512463	500	10	

Then

UPDATE Departments

SET MGRSSN = 666666

WHERE MGRSSN = 223344;

Query1		Employee	Departments			
	Dname	Dnum	MGRSSN	MGRStart Da	Click to Add	
+	DP1	10	666666	1/1/2005		
+	DP2	20	555555	1/3/2006		
+	DP3	30	512463	1/6/2006		
+	DEPT IT	100	968574	12/8/2006		
*						

Then

DELETE FROM Employee

WHERE SSN = 223344;

Query1 X Employee X										
	Fname	Lname	SSN	Bdate	Address	gender	Salary	Superssn	Dno	Click to Add
	Ahmed	Ali	112233	1/1/1965	15 Ali fahmy St.	M	1300	666666	10	
	Hanaa	Sobhy	123456	3/18/1973	38 Abdel Khalik	F	800	666666	10	
	#Deleted	#Deleted	#Deleted	#Deleted	#Deleted	#Deleted	#Deleted	#Deleted	#Deleted	
	Amr	Omran	321654	9/14/1963	44 Hilopolis.Cai	M	2500			
	Edward	Hanna	512463	8/19/1972	18 Abaas El 3ak	M	1500	321654	30	
	Maged	RaooF	521634	6/4/1980	18 Kholosi st.Sh	M	1000	968574	30	
	Adham	Samer	555555	10/3/2001	Acid Compound M			666666	30	
	Abdallah	Ramadan	666666	1/12/1999	8 El sahaba st. s	M	2000	112233	30	
	Mariam	Adel	669955	12/6/1982	269 El-Haram st	F	750	512463	20	
	Noha	Mohamed	968574	1/2/1975	55 Orabi St. El N	F	1600	321654	20	

And then the whole row got deleted automatically

d. UPDATE Employee

SET Salary = Salary * 1.2

WHERE SSN = 666666;

Query1 X Employee X										
	Fname	Lname	SSN	Bdate	Address	gender	Salary	Superssn	Dno	Click to Add
	Ahmed	Ali	112233	1/1/1965	15 Ali fahmy St.	M	1300	666666	10	
	Hanaa	Sobhy	123456	3/18/1973	38 Abdel Khalik	F	800	666666	10	
	Amr	Omran	321654	9/14/1963	44 Hilopolis.Cai	M	2500			
	Edward	Hanna	512463	8/19/1972	18 Abaas El 3ak	M	1500	321654	30	
	Maged	RaooF	521634	6/4/1980	18 Kholosi st.Sh	M	1000	968574	30	
	Adham	Samer	555555	10/3/2001	Acid Compound	M		666666	30	
	Abdallah	Ramadan	666666	1/12/1999	8 El sahaba st. s	M	2400	112233	30	
	Mariam	Adel	669955	12/6/1982	269 El-Haram st	F	750	512463	20	
	Noha	Mohamed	968574	1/2/1975	55 Orabi St. El N	F	1600	321654	20	