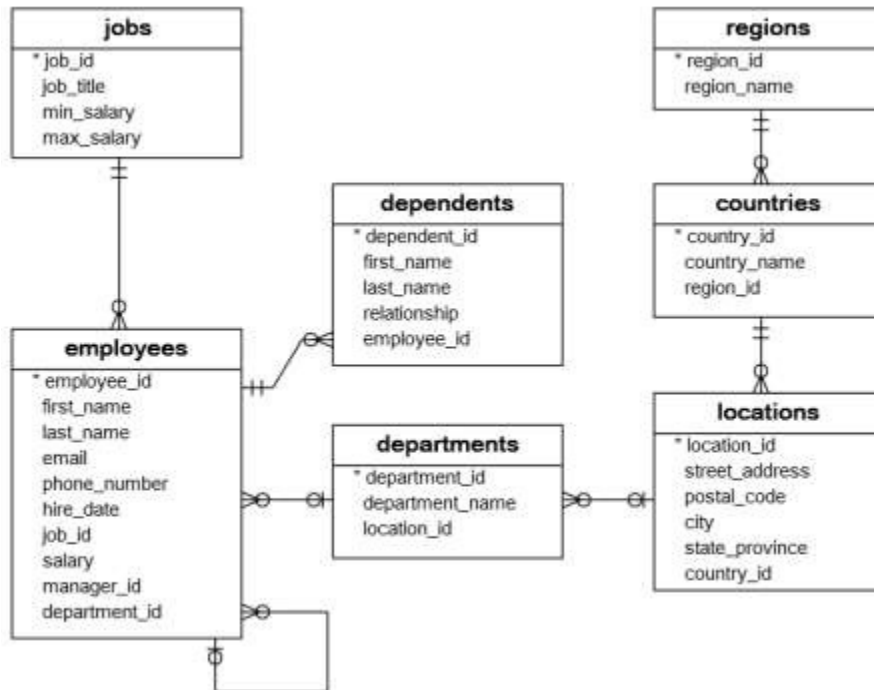


EXERCISE 1

Date: 13/02/2024



The company database has seven tables:

1. The employees table stores the data of employees.
2. The jobs table stores the job data including job title and salary range.
3. The departments table stores department data.
4. The dependents table stores the employee's dependents.
5. The locations table stores the location of the departments of the company.
6. The countries table stores the data of countries where the company is doing business.
7. The regions table stores the data of regions such as Asia, Europe, America, and the Middle East and Africa. The countries are grouped into regions.

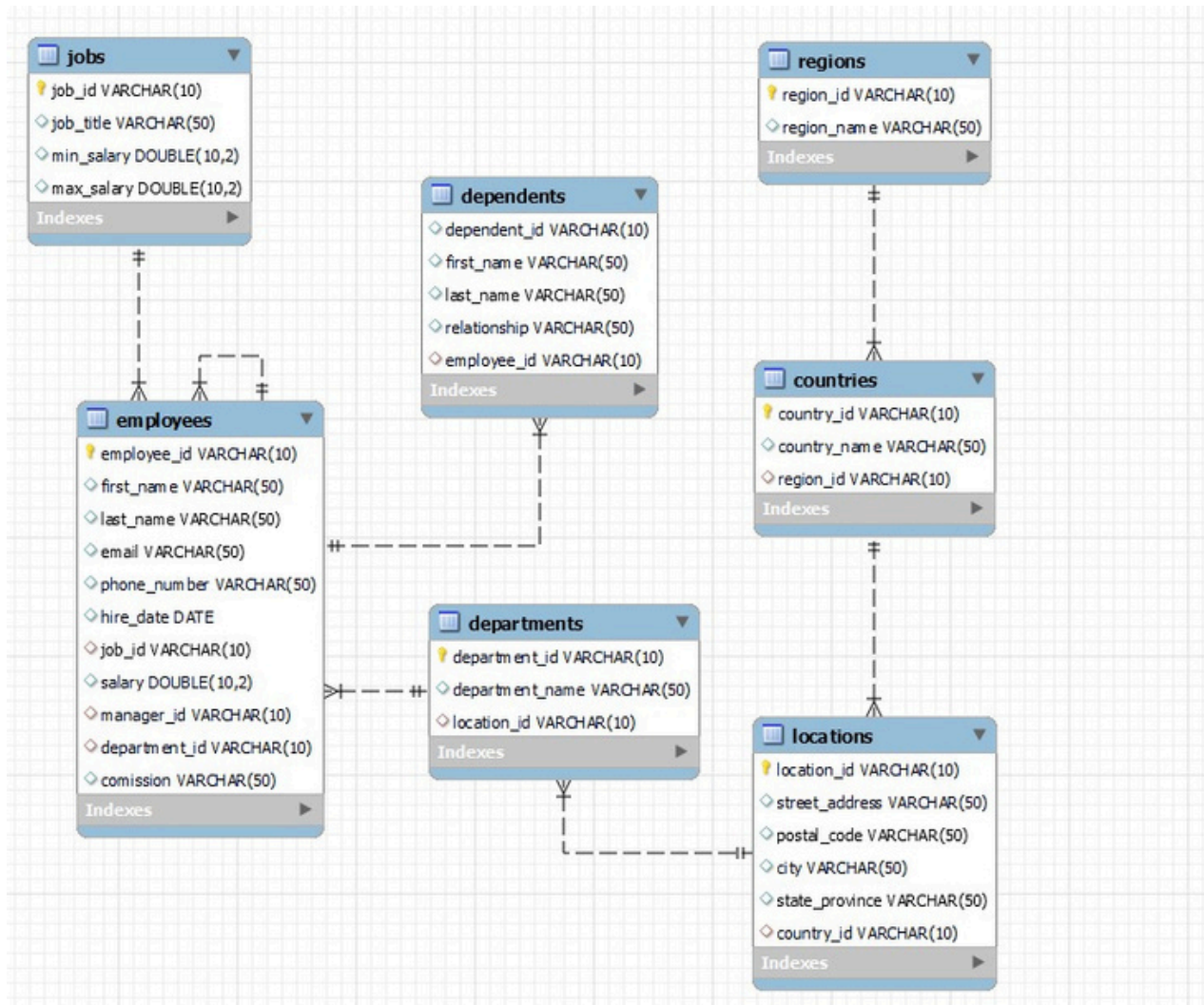
I . WRITE QUERIES IN MYSQL TO DO THE FOLLOWING: -

DDL COMMANDS

1. Design and create database which consists of above seven tables.
2. Rename Departments table to Dept.
3. Modify Column Salary from int to smallint
4. Add Commission column to the Employees table.

DML COMMANDS

5. Enter appropriate queries to insert values in table.

R Diagram:-Table structure of jobs:-

	Field	Type	Null	Key	Default	Extra
►	job_id	varchar(10)	NO	PRI	NULL	
	job_title	varchar(50)	YES		NULL	
	min_salary	double(10,2)	YES		NULL	
	max_salary	double(10,2)	YES		NULL	

Table structure of regions:-

	Field	Type	Null	Key	Default	Extra
►	region_id	varchar(10)	NO	PRI	NULL	
	region_name	varchar(50)	YES		NULL	

SQL QUERIES: -

1. Design and create database which consists of above seven tables.

create database company;

use company;

create table jobs (job_id varchar(10) primary key, job_title varchar(50), min_salary double(10,2), max_salary double(10,2));

create table regions(region_id varchar(10) primary key, region_name varchar(50));

create table countries(country_id varchar(10) primary key, country_name varchar(50), region_id varchar(10), foreign key (region_id) references regions(region_id));

create table locations(location_id varchar(10) primary key, street_address varchar(50), postal_code varchar(50), city varchar(50), state_province varchar(50), country_id varchar(10), foreign key (country_id) references countries(country_id));

create table departments(department_id varchar(10) primary key, department_name varchar(50), location_id varchar(10), foreign key (location_id) references locations(location_id));

create table employees(employee_id varchar(10) primary key, first_name varchar(50), last_name varchar(50), email varchar(50), phone_number varchar(50), hire_date date, job_id varchar(10), salary double(10,2), manager_id varchar(10), department_id varchar(10), foreign key (department_id) references departments(department_id), foreign key (job_id) references jobs (job_id), foreign key (manager_id) references employees(employee_id));

create table dependents(dependent_id varchar(10), first_name varchar(50), last_name varchar(50), relationship varchar(50), employee_id varchar(10), foreign key (employee_id) references employees(employee_id));

2. Rename department to dept.

alter table departments rename dept;

3. Modify column salary from int to smallint.

alter table employees modify column salary SMALLINT;

4. Add commission to employees table.

alter table employees add commission varchar(50);

Table structure of countries:-

	Field	Type	Null	Key	Default	Extra
▶	country_id	varchar(10)	NO	PRI	NULL	
	country_name	varchar(50)	YES		NULL	
	region_id	varchar(10)	YES	MUL	NULL	

Table structure of locations:-

	Field	Type	Null	Key	Default	Extra
▶	location_id	varchar(10)	NO	PRI	NULL	
	street_address	varchar(50)	YES		NULL	
	postal_code	varchar(50)	YES		NULL	
	city	varchar(50)	YES		NULL	
	state_province	varchar(50)	YES		NULL	
	country_id	varchar(10)	YES	MUL	NULL	

Table structure of departments:-

	Field	Type	Null	Key	Default	Extra
▶	department_id	varchar(10)	NO	PRI	NULL	
	department_name	varchar(50)	YES		NULL	
	location_id	varchar(10)	YES	MUL	NULL	

Table structure of employees:-

	Field	Type	Null	Key	Default	Extra
▶	employee_id	varchar(10)	NO	PRI	NULL	
	first_name	varchar(50)	YES		NULL	
	last_name	varchar(50)	YES		NULL	
	email	varchar(50)	YES		NULL	
	phone_number	varchar(50)	YES		NULL	
	hire_date	date	YES		NULL	
	job_id	varchar(10)	YES	MUL	NULL	
	salary	double(10,2)	YES		NULL	
	manager_id	varchar(10)	YES	MUL	NULL	
	department_id	varchar(10)	YES	MUL	NULL	
	comission	varchar(50)	YES		NULL	

Table structure of dependents:-

	Field	Type	Null	Key	Default	Extra
▶	dependent_id	varchar(10)	YES		NULL	
	first_name	varchar(50)	YES		NULL	
	last_name	varchar(50)	YES		NULL	
	relationship	varchar(50)	YES		NULL	
	employee_id	varchar(10)	YES	MUL	NULL	

5. Enter following queries to insert values to tables.

Data for regions:-

```
INSERT INTO regions(region_id,region_name) VALUES ('1','Europe'), ('2','Americas'), ('3','Asia'), ('4','Middle East and Africa');
```

Data for countries:-

```
INSERT INTO countries (country_id,country_name,region_id) VALUES ('AR','Argentina','2'), ('AU','Australia','3'), ('BE','Belgium','1'), ('BR','Brazil','2'), ('CA','Canada','2'), ('CH','Switzerland','1'), ('CN','China','3'), ('DE','Germany','1'), ('DK','Denmark','1'), ('EG','Egypt','4'), ('FR','France','1'), ('HK','HongKong','3'), ('IL','Israel','4'), ('IN','India','3'), ('IT','Italy','1'), ('JP','Japan','3'), ('KW','Kuwait','4'), ('MX','Mexico','2'), ('NG','Nigeria','4'), ('NL','Netherlands','1'), ('SG','Singapore','3'), ('UK','United Kingdom','1'), ('US','United States of America','2'), ('ZM','Zambia','4'), ('ZW','Zimbabwe','4');
```

Data for locations:-

```
INSERT INTO locations(location_id,street_address,postal_code,city,state_province,country_id) VALUES ('1400','2014 Jabberwocky Rd','26192','Southlake','Texas','US'), ('1500','2011 Interiors Blvd','99236','South San Francisco','California','US'), ('1700','2004 Charade Rd','98199','Seattle','Washington','US'), ('1800','147 Spadina Ave','M5V 2L7','Toronto','Ontario','CA'), ('2400','8204 Arthur St',NULL,'London',NULL,'UK'), ('2500','Magdalen Centre, The Oxford Science Park','OX99ZB','Oxford','Oxford','UK'), ('2700','Schwanthalerstr. 7031','80925','Munich','Bavaria','DE');
```

Data for jobs:-

```
INSERT INTO jobs(job_id,job_title,min_salary,max_salary) VALUES ('1','Public Accountant',4200.00,9000.00), ('2','Accounting Manager',8200.00,16000.00), ('3','Administration Assistant',3000.00,6000.00), ('4','President',20000.00,40000.00), ('5','Administration Vice President',15000.00,30000.00), ('6','Accountant',4200.00,9000.00), ('7','Finance Manager',8200.00,16000.00), ('8','Human Resources Representative',4000.00,9000.00), ('9','Programmer',4000.00,10000.00), ('10','Marketing Manager',9000.00,15000.00), ('11','Marketing Representative',4000.00,9000.00), ('12','Public Relations Representative',4500.00,10500.00), ('13','Purchasing Clerk',2500.00,5500.00), ('14','Purchasing Manager',8000.00,15000.00), ('15','Sales Manager',10000.00,20000.00), ('16','Sales Representative',6000.00,12000.00), ('17','Shipping Clerk',2500.00,5500.00), ('18','Stock Clerk',2000.00,5000.00), ('19','Stock Manager',5500.00,8500.00);
```

Table: regions

region_id	region_name
1	Europe
2	Americas
3	Asia
4	Middle East and Africa

Table: countries

country_id	country_name	region_id
AR	Argentina	2
AU	Australia	3
BE	Belgium	1
BR	Brazil	2
CA	Canada	2
CH	Switzerland	1
CN	China	3
DE	Germany	1
DK	Denmark	1
EG	Egypt	4
FR	France	1
HK	HongKong	3
IL	Israel	4
IN	India	3
IT	Italy	1
JP	Japan	3
KW	Kuwait	4
MX	Mexico	2
NG	Nigeria	4
NL	Netherlands	1
SG	Singapore	3
UK	United Kingdom	1
US	United States...	2
ZM	Zambia	4
ZW	Zimbabwe	4

Table: locations

location_id	street_address	postal_code	city	state_province	country_id
1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US
1500	2011 Interiors Blvd	99236	South San Francisco	California	US
1700	2004 Charade Rd	98199	Seattle	Washington	US
1800	147 Spadina Ave	M5V 2L7	Toronto	Ontario	CA
2400	8204 Arthur St	NULL	London	NULL	UK
2500	Magdalen Centre, The Oxford Science Park	OX99ZB	Oxford	Oxford	UK
2700	Schwanthalerstr. 7031	80925	Munich	Bavaria	DE

```
INSERT INTO departments(department_id,department_name,location_id) VALUES  
(1,'Administration','1700'), (2,'Marketing','1800'), (3,'Purchasing','1700'), (4,'Human Resources',  
'2400'), (5,'Shipping','1500'), (6,'IT','1400'), (7,'Public Relations','2700'), (8,'Sales','2500'),  
(9,'Executive','1700'), (10,'Finance','1700'), (11,'Accounting','1700');
```

Data for employees:-

```
INSERT INTO employeesINSERT INTO employees(employee_id,first_name,last_name,email,phone_number,hire_date,  
job_id, salary,manager_id,department_id) VALUES (100,'Steven','King',  
'steven.king@sqltuttorial.org','515.123.4567','1987-06-17',4,24000.00,NULL,9),  
(101,'Neena','Kochhar','neena.kochhar@sqltuttorial.org','515.123.4568','1989-09-21', 5,17000.00,  
100,9), (102,'Lex','DeHaan','lex.de haan@sqltuttorial.org','515.123.4569','1993-01-13',5,17000.00,  
100,9), (103,'Alexander','Hunold','alexander.hunold@sqltuttorial.org','590.423.4567','1990-01-  
03',9,9000.00,102,6), (104,'Bruce','Ernst','bruce.ernst@sqltuttorial.org','590.423.4568','1991-05-  
21',9,6000.00,103,6), (105,'David','Austin','david.austin@sqltuttorial.org','590.423.4569','1997-06-  
25',9,4800.00,103,6), (106,'Valli','Pataballa','valli.pataballa@sqltuttorial.org','590.423.4560','1998-  
02-05',9,4800.00,103,6), (107,'Diana','Lorentz','diana.lorentz@sqltuttorial.org','590.423.5567','1999-  
02-07',9,4200.00,103,6), (108,'Nancy','Greenberg','nancy.greenberg@sqltuttorial.org',  
'515.124.4569','1994-08-17',7,12000.00,101,10), (109,'Daniel','Faviet',  
'daniel.faviet@sqltuttorial.org','515.124.4169','1994-08-16',6,9000.00,108,10),  
(110,'John','Chen','john.chen@sqltuttorial.org','515.124.4269','1997-09-28',6,8200.00,108,10),  
(111,'Ismael','Sciarra','ismael.sciarra@sqltuttorial.org','515.124.4369','1997-09-30',6,7700.00,  
108,10), (112,'Jose Manuel','Urman','josemanuel.urman@sqltuttorial.org','515.124.4469','1998-03-  
07',6,7800.00,108,10), (113,'Luis','Popp','luis.popp@sqltuttorial.org','515.124.4567','1999-12-  
07',6,6900.00,108,10), (114,'Den','Raphaely','den.raphaely@sqltuttorial.org','515.127.4561','1994-12-  
07',14,11000.00,100,3), (115,'Alexander','Khoo','alexander.khoo@sqltuttorial.org','515.127.4562',  
'1995-05-18',13,3100.00,114,3), (116,'Shelli','Baida','shelli.baida@sqltuttorial.org','515.127.4563',  
'1997-12-24',13,2900.00,114,3), (117,'Sigal','Tobias','sigal.tobias@sqltuttorial.org','515.127.4564',  
'1997-07-24',13,2800.00,114,3), (118,'Guy','Himuro','guy.himuro@sqltuttorial.org','515.127.4565',  
'1998-11-15',13,2600.00,114,3), (119,'Karen','Colmenares','karen.colmenares@sqltuttorial.org',  
'515.127.4566','1999-08-10',13,2500.00,114,3), (120,'Matthew','Weiss',  
'matthew.weiss@sqltuttorial.org','650.123.1234','1996-07-18',19,8000.00,100,5), (121,'Adam','Fripp',  
'adam.fripp@sqltuttorial.org','650.123.2234','1997-04-10',19,8200.00,100,5), (122,'Payam',  
'Kaufling','payam.kaufling@sqltuttorial.org','650.123.3234','1995-05-01',19,7900.00,100,5),  
(123,'Shanta','Vollman','shanta.vollman@sqltuttorial.org','650.123.4234','1997-10-10',19,6500.00,
```


Table: jobs

job_id	job_title	min_salary	max_salary
1	Public Accountant	4200.00	9000.00
10	Marketing Manager	9000.00	15000.00
11	Marketing Representative	4000.00	9000.00
12	Public Relations Representative	4500.00	10500.00
13	Purchasing Clerk	2500.00	5500.00
14	Purchasing Manager	8000.00	15000.00
15	Sales Manager	10000.00	20000.00
16	Sales Representative	6000.00	12000.00
17	Shipping Clerk	2500.00	5500.00
18	Stock Clerk	2000.00	5000.00
19	Stock Manager	5500.00	8500.00
2	Accounting Manager	8200.00	16000.00
3	Administration Assistant	3000.00	6000.00
4	President	20000.00	40000.00
5	Administration Vice President	15000.00	30000.00
6	Accountant	4200.00	9000.00
7	Finance Manager	8200.00	16000.00
8	Human Resources Representa...	4000.00	9000.00
9	Programmer	4000.00	10000.00

Table: dependents

dependent_id	first_name	last_name	relationship	employee_id
1	Penelope	Gietz	Child	206
2	Nick	Higgins	Child	205
3	Ed	Whalen	Child	200
4	Jennifer	King	Child	100
5	Johnny	Kochhar	Child	101
6	Bette	De Haan	Child	102
7	Grace	Faviet	Child	109
8	Matthew	Chen	Child	110
9	Joe	Sciarra	Child	111
10	Christian	Urman	Child	112
11	Zero	Popp	Child	113
12	Karl	Greenberg	Child	108
13	Uma	Mavris	Child	203
14	Vivien	Hunold	Child	103
15	Cuba	Ernst	Child	104
16	Fred	Austin	Child	105
17	Helen	Pataballa	Child	106
18	Dan	Lorentz	Child	107
19	Bob	Hartstein	Child	201
20	Lucille	Fay	Child	202
21	Kirsten	Baer	Child	204
22	Elvis	Khoo	Child	115
23	Sandra	Baida	Child	116
24	Cameron	Tobias	Child	117
25	Kevin	Himuro	Child	118
26	Rip	Colmenares	Child	119
27	Julia	Raphaely	Child	114
28	Woody	Russell	Child	145
29	Alec	Partners	Child	146
30	Sandra	Taylor	Child	176

100,5), (126,'Irene','Mikkilineni','irene.mikkilineni@sqltutorial.org','650.124.1224','1998-09-28',18,2700.00,120,5), (145,'John','Russell','john.russell@sqltutorial.org',NULL,'1996-10-01',15,14000.00,100,8), (146,'Karen','Partners','karen.partners@sqltutorial.org',NULL,'1997-01-05',15,13500.00,100,8), (176,'Jonathon','Taylor','jonathon.taylor@sqltutorial.org',NULL,'1998-03-24',16,8600.00,100,8), (177,'Jack','Livingston','jack.livingston@sqltutorial.org',NULL,'1998-04-23',16,8400.00,100,8), (178,'Kimberely','Grant','kimberely.grant@sqltutorial.org',NULL,'1999-05-24',16,7000.00,100,8), (179,'Charles','Johnson','charles.johnson@sqltutorial.org',NULL,'2000-01-04',16,6200.00,100,8), (192,'Sarah','Bell','sarah.bell@sqltutorial.org','650.501.1876','1996-02-04',17,4000.00,123,5), (193,'Britney','Everett','britney.everett@sqltutorial.org','650.501.2876','1997-03-03',17,3900.00,123,5), (200,'Jennifer','Whalen','jennifer.whelen@sqltutorial.org','515.123.4444','1987-09-17',3,4400.00,101,1), (201,'Michael','Hartstein','michael.hartstein@sqltutorial.org','515.123.5555','1996-02-17',10,13000.00,100,2), (202,'Pat','Fay','pat.fay@sqltutorial.org','603.123.6666','1997-08-17',11,6000.00,201,2), (203,'Susan','Mavris','susan.mavris@sqltutorial.org','515.123.7777','1994-06-07',8,6500.00,101,4), (204,'Hermann','Baer','hermann.baer@sqltutorial.org','515.123.8888','1994-06-07',12,10000.00,101,7), (205,'Shelley','Higgins','shelley.higgins@sqltutorial.org','515.123.8080','1994-06-07',2,12000.00,101,11), (206,'William','Gietz','william.gietz@sqltutorial.org','515.123.8181','1994-06-07',1,8300.00,205,11);

Data for dependents:-

INSERT INTO dependents(dependent_i,first_name,last_name,relationship,employee_id) VALUES (1,'Penelope','Gietz','Child',206), (2,'Nick','Higgins','Child',205), (3,'Ed','Whalen','Child',200), (4,'Jennifer','King','Child',100), (5,'Johnny','Kochhar','Child',101), (6,'Bette','De Haan','Child',102), (7,'Grace','Faviet','Child',109), (8,'Matthew','Chen','Child',110), (9,'Joe','Sciarra','Child',111), (10,'Christian','Urman','Child',112), (11,'Zero','Popp','Child',113), (12,'Karl','Greenberg','Child',108), (13,'Uma','Mavris','Child',203), (14,'Vivien','Hunold','Child',103), (15,'Cuba','Ernst','Child',104), (16,'Fred','Austin','Child',105), (17,'Helen','Pataballa','Child',106), (18,'Dan','Lorentz','Child',107), (19,'Bob','Hartstein','Child',201), (20,'Lucille','Fay','Child',202), (21,'Kirsten','Baer','Child',204), (22,'Elvis','Khoo','Child',115), (23,'Sandra','Baida','Child',116), (24,'Cameron','Tobias','Child',117), (25,'Kevin','Himuro','Child',118), (26,'Rip','Colmenares','Child',119), (27,'Julia','Raphaely','Child',114), (28,'Woody','Russell','Child',145), (29,'Alec','Partners','Child',146), (30,'Sandra','Taylor','Child',176);

Table: departments

department_id	department_name	location_id
1	Administration	1700
10	Finance	1700
11	Accounting	1700
2	Marketing	1800
3	Purchasing	1700
4	Human Resources	2400
5	Shipping	1500
6	IT	1400
7	Public Relations	2700
8	Sales	2500
9	Executive	1700

Table: employees

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	manager_id	department_id	comission
100	Steven	King	steven.king@sqltutorial.org	515.123.4567	1987-06-17	4	24000.00	NULL	9	NULL
101	Neena	Kochhar	neena.kochhar@sqltutorial.org	515.123.4568	1989-09-21	5	17000.00	100	9	NULL
102	Lex	DeHaan	lex.de.haan@sqltutorial.org	515.123.4569	1993-01-13	5	17000.00	100	9	NULL
103	Alexander	Hunold	alexander.hunold@sqltutorial.org	590.423.4567	1990-01-03	9	9000.00	102	6	NULL
104	Bruce	Ernst	bruce.ernst@sqltutorial.org	590.423.4568	1991-05-21	9	6000.00	103	6	NULL
105	David	Austin	david.austin@sqltutorial.org	590.423.4569	1997-06-25	9	4800.00	103	6	NULL
106	Valli	Pataballa	valli.pataballa@sqltutorial.org	590.423.4560	1998-02-05	9	4800.00	103	6	NULL
107	Diana	Lorentz	diana.lorentz@sqltutorial.org	590.423.5567	1999-02-07	9	4200.00	103	6	NULL
108	Nancy	Greenberg	nancy.greenberg@sqltutorial.org	515.124.4569	1994-08-17	7	12000.00	101	10	NULL
109	Daniel	Faviet	daniel.faviet@sqltutorial.org	515.124.4169	1994-08-16	6	9000.00	108	10	NULL
110	John	Chen	john.chen@sqltutorial.org	515.124.4269	1997-09-28	6	8200.00	108	10	NULL
111	Ismael	Sciarra	ismael.sciarra@sqltutorial.org	515.124.4369	1997-09-30	6	7700.00	108	10	NULL
112	Jose Manuel	Urman	josemanuel.urman@sqltutorial.org	515.124.4469	1998-03-07	6	7800.00	108	10	NULL
113	Luis	Popp	luis.popp@sqltutorial.org	515.124.4567	1999-12-07	6	6900.00	108	10	NULL
114	Den	Raphaely	den.raphaely@sqltutorial.org	515.127.4561	1994-12-07	14	11000.00	100	3	NULL
115	Alexander	Khoo	alexander.khoo@sqltutorial.org	515.127.4562	1995-05-18	13	3100.00	114	3	NULL
116	Shelli	Baida	shelli.baida@sqltutorial.org	515.127.4563	1997-12-24	13	2900.00	114	3	NULL
117	Sigal	Tobias	sigal.tobias@sqltutorial.org	515.127.4564	1997-07-24	13	2800.00	114	3	NULL
118	Guy	Himuro	guy.himuro@sqltutorial.org	515.127.4565	1998-11-15	13	2600.00	114	3	NULL
119	Karen	Colmenares	karen.colmenares@sqltutorial.org	515.127.4566	1999-08-10	13	2500.00	114	3	NULL
120	Matthew	Weiss	matthew.weiss@sqltutorial.org	650.123.1234	1996-07-18	19	8000.00	100	5	NULL
121	Adam	Fripp	adam.fripp@sqltutorial.org	650.123.2234	1997-04-10	19	8200.00	100	5	NULL
122	Payam	Kaufing	payam.kaufing@sqltutorial.org	650.123.3234	1995-05-01	19	7900.00	100	5	NULL
123	Shanta	Vollman	shanta.vollman@sqltutorial.org	650.123.4234	1997-10-10	19	6500.00	100	5	NULL
126	Irene	Mikkilineni	irene.mikkilineni@sqltutorial.org	650.124.1224	1998-09-28	18	2700.00	120	5	NULL
145	John	Russell	john.russell@sqltutorial.org	NULL	1996-10-01	15	14000.00	100	8	NULL
146	Karen	Partners	karen.partners@sqltutorial.org	NULL	1997-01-05	15	13500.00	100	8	NULL
176	Jonathon	Taylor	jonathon.taylor@sqltutorial.org	NULL	1998-03-24	16	8600.00	100	8	NULL
177	Jack	Livingston	jack.livingston@sqltutorial.org	NULL	1998-04-23	16	8400.00	100	8	NULL
178	Kimberely	Grant	kimberely.grant@sqltutorial.org	NULL	1999-05-24	16	7000.00	100	8	NULL
179	Charles	Johnson	charles.johnson@sqltutorial.org	NULL	2000-01-04	16	6200.00	100	8	NULL
192	Sarah	Bell	sarah.bell@sqltutorial.org	650.501.1876	1996-02-04	17	4000.00	123	5	NULL
193	Britney	Everett	britney.everett@sqltutorial.org	650.501.2876	1997-03-03	17	3900.00	123	5	NULL
200	Jennifer	Whalen	jennifer.whelen@sqltutorial.org	515.123.4444	1987-09-17	3	4400.00	101	1	NULL
201	Michael	Hartstein	michael.hartstein@sqltutorial.org	515.123.5555	1996-02-17	10	13000.00	100	2	NULL
202	Pat	Fay	pat.fay@sqltutorial.org	603.123.6666	1997-08-17	11	6000.00	201	2	NULL