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```
1  --Creating a new database called employees_data
2  CREATE DATABASE employees_data;
3
4  -- Create the Employees table
5  CREATE TABLE Employees (
6      employee_id TINYINT PRIMARY KEY,
7      first_name NVARCHAR(50),
8      last_name NVARCHAR(50),
9      email NVARCHAR(50),
10     phone_number NVARCHAR(50),
11     hire_date DATE,
12     job_id NVARCHAR(50),
13     salary SMALLINT,
14     commission_pct DECIMAL(5,2) NULL,
15     manager_id TINYINT NULL,
16     department_id TINYINT
17 );
18
19 -- Create the Jobs table
20 CREATE TABLE Jobs (
21     Job_id NVARCHAR(50) PRIMARY KEY,
22     Job_title NVARCHAR(50)
23 );
24
25 --Retrieving the top 100 records from the employees table
26 SELECT TOP 100 * FROM Employees_data;
27
28 --Retrieving the top 100 records from the jobs table
29 SELECT TOP 100 * FROM Jobs_data;
30
31 --Retrieving the total number of employees
```

```
40  --Retrieving the oldest and newest employees
41  SELECT * FROM Employees_Data
42  WHERE hire_date = (SELECT MIN(hire_date) FROM Employees_Data)
43  |    OR hire_date = (SELECT MAX(hire_date) FROM Employees_Data);
44
45  --Retrieving the oldest and newest employee in each department
46  WITH employee_cte AS (
47  |    SELECT department_ID, hire_date, ROW_NUMBER() OVER (PARTITION BY department_id ORDER BY hire_date) AS row_num FROM Employees_Data)
48  |    SELECT department_id, hire_date FROM employee_cte WHERE row_num = 1 OR row_num = (SELECT MAX(row_num) FROM employee_cte);
49
50  --Retreiving the total number of information technology programmers
51  SELECT COUNT(Employees_Data.Employee_id) AS total_programmers FROM Employees_Data INNER JOIN Jobs_Data
52  ON Employees_Data.job_id = Jobs_Data.job_id WHERE Jobs_Data.job_title = 'Programmer' AND Employees_Data.department_id = 10;
53
54  --Retrieving the year difference between the oldest and newest employee hire dates
55  SELECT DATEDIFF(YEAR,
56  (SELECT MIN(hire_date) FROM Employees_Data),
57  (SELECT MAX(hire_date) FROM Employees_data)) AS year_difference;
58
59  --Rretrieving the employees who earn below average salary
60  SELECT * FROM employees_data WHERE salary < (SELECT AVG(salary) FROM Employees_Data);
61
62  --Updating the email column to lowercase
63  UPDATE Employees_Data SET Email = LOWER(email);
64
65  --Deleting the commission column
66  ALTER TABLE Employees_Data DROP COLUMN Commission_PCT;
67
68  --Retrieving the top 100 records from the employees table
69  SELECT TOP 100 * FROM Employees_data;
```

30

31 --QUESTION 1

32 --Retrieving the total number of employees

33 SELECT COUNT(*) AS total_employees FROM employees_data;

34

Results

Messages

	total_employees	▼
1	50	

35

36 --QUESTION 2

37 --Retrieving the total number of employees in each department

38 `SELECT department_id, COUNT(*) AS total_employees FROM employees_data GROUP BY department_id;`

Results **Messages**

	department_id ▾	total_employees ▾
1	10	1
2	20	2
3	30	6
4	40	1
5	50	23
6	60	5
7	70	1
8	90	3
9	100	6
10	110	2

```
39  --QUESTION 3
40  --Retrieving the three departments with the highest number of employees
41  SELECT TOP 3 department_id, COUNT(*) AS total_employees FROM employees_data GROUP BY department_id ORDER BY total_employees DESC;
42
```

Results Messages

	department_id	total_employees
1	50	23
2	30	6
3	100	6

QUESTION 4

Retrieving the oldest and newest employees

```
SELECT * FROM Employees_Data  
WHERE hire_date = (SELECT MIN(hire_date) FROM Employees_Data)  
OR hire_date = (SELECT MAX(hire_date) FROM Employees_Data);
```

Messages

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY
	Lex	De Haan	ldehaan	515.123.4569	2001-01-13	AD_VP	17000
	Steven	Markle	smarkle	650.124.1434	2008-03-08	ST_CLERK	2200

```

49
50 --QUESTION 5
51 --Retrieving the oldest and newest employee in each department
52 WITH employee_cte AS (
53     SELECT department_ID, hire_date, ROW_NUMBER() OVER (PARTITION BY department_id ORDER BY hire_date) AS row_num FROM Employees_Data)
54     SELECT department_id, hire_date FROM employee_cte WHERE row_num = 1 OR row_num = (SELECT MAX(row_num) FROM employee_cte);
55

```

Results Messages

	department_id	hire_date
1	10	2003-09-17
2	20	2004-02-17
3	30	2002-12-07
4	40	2002-06-07
5	50	2003-05-01
6	50	2008-03-08
7	60	2005-06-25
8	70	2002-06-07
9	90	2001-01-13
10	100	2002-08-16
11	110	2002-06-07

```
55
56 --QUESTION 6
57 --Retreiving the total number of information technology programmers
58 SELECT COUNT(Employees_Data.Employee_id) AS total_programmers FROM Employees_Data INNER JOIN Jobs_Data
59 ON Employees_Data.job_id = Jobs_Data.job_id WHERE Jobs_Data.job_title = 'Programmer' AND Employees_Data.department_id = 10;
60
```

Results Messages

	total_programmers ▾
1	0


```
60
61  --QUESTION 7
62  --Retrieving the year difference between the oldest and newest employee hire dates
63  SELECT DATEDIFF(YEAR,
64  (SELECT MIN(hire_date) FROM Employees_Data),
65  (SELECT MAX(hire_date) FROM Employees_data)) AS year_difference;
66
```

Results Messages

	year_difference
1	7

```

67
68 --QUESTION 8
69 --Retrieving the employees who earn below average salary
70 SELECT * FROM employees_data WHERE salary < (SELECT AVG(salary) FROM Employees_Data);
71

```

Results Messages

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	MANAGER_ID	DEPARTMENT_ID
1	104	Bruce	Ernst	bernst	590.423.4568	2007-05-21	IT_PROG	6000	103	60
2	105	David	Austin	daustin	590.423.4569	2005-06-25	IT_PROG	4800	103	60
3	106	Valli	Pataballa	vpatabal	590.423.4560	2006-02-05	IT_PROG	4800	103	60
4	107	Diana	Lorentz	dlorentz	590.423.5567	2007-02-07	IT_PROG	4200	103	60
5	115	Alexander	Khoo	akhoo	515.127.4562	2003-05-18	PU_CLERK	3100	114	30
6	116	Shelli	Baida	sbaida	515.127.4563	2005-12-24	PU_CLERK	2900	114	30
7	117	Sigal	Tobias	stobias	515.127.4564	2005-07-24	PU_CLERK	2800	114	30
8	118	Guy	Himuro	ghimuro	515.127.4565	2006-11-15	PU_CLERK	2600	114	30
9	119	Karen	Colmenares	kcolmena	515.127.4566	2007-08-10	PU_CLERK	2500	114	30
10	124	Kevin	Mourgos	kmourgos	650.123.5234	2007-11-16	ST_MAN	5800	100	50
11	125	Julia	Nayer	jnayer	650.124.1214	2005-07-16	ST_CLERK	3200	120	50
12	126	Irene	Mikkilineni	imikkili	650.124.1224	2006-09-28	ST_CLERK	2700	120	50
13	127	James	Landry	jlandry	650.124.1334	2007-01-14	ST_CLERK	2400	120	50
14	128	Steven	Markle	smarkle	650.124.1434	2008-03-08	ST_CLERK	2200	120	50
15	129	Laura	Bissot	lbissot	650.124.5234	2005-08-20	ST_CLERK	3300	121	50
16	130	Mozhe	Atkinson	matkinso	650.124.6234	2005-10-30	ST_CLERK	2800	121	50
17	131	James	Marlow	jamrlo	650.124.7234	2005-02-16	ST_CLERK	2500	121	50
18	132	TJ	Olson	tjols	650.124.8234	2007-04-10	ST_CLERK	2100	121	50

```
71
72  --QUESTION 9
73  --Updating the email column to lowercase
74  UPDATE Employees_Data SET Email = LOWER(email);
75
```

Messages

00:01:35	<u>Started executing query at Line 74</u> (50 rows affected) Total execution time: 00:00:00.007
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```
75
76  --QUESTION 10
77  --Deleting the commission column
78  ALTER TABLE Employees_Data DROP COLUMN Commission_PCT;
```

Messages

00:02:28 Started executing query at Line 78
Msg 4924, Level 16, State 1, Line 1
ALTER TABLE DROP COLUMN failed because column 'Commission_PCT' does not exist in table 'employees_data'.
Total execution time: 00:00:00.021

```

80
81 --FINAL RESULT
82 --Retrieving the top 100 records from the employees table
83 SELECT TOP 100 * FROM Employees_data;

```

Results Messages

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	sking	515.123.4567	2003-06-17	AD_PRES	24000	-	90
2	101	Neena	Kochhar	nkochhar	515.123.4568	2005-09-21	AD_VP	17000	100	90
3	102	Lex	De Haan	ldehaan	515.123.4569	2001-01-13	AD_VP	17000	100	90
4	103	Alexander	Hunold	ahunold	590.423.4567	2006-01-03	IT_PROG	9000	102	60
5	104	Bruce	Ernst	bernst	590.423.4568	2007-05-21	IT_PROG	6000	103	60
6	105	David	Austin	daustin	590.423.4569	2005-06-25	IT_PROG	4800	103	60
7	106	Valli	Pataballa	vpatabal	590.423.4560	2006-02-05	IT_PROG	4800	103	60
8	107	Diana	Lorentz	dlorentz	590.423.5567	2007-02-07	IT_PROG	4200	103	60
9	108	Nancy	Greenberg	ngreenbe	515.124.4569	2002-08-17	FI_MGR	12008	101	100
10	109	Daniel	Faviet	dfaviet	515.124.4169	2002-08-16	FI_ACCOUNT	9000	108	100
11	110	John	Chen	jchen	515.124.4269	2005-09-28	FI_ACCOUNT	8200	108	100
12	111	Ismael	Sciarra	isciarra	515.124.4369	2005-09-30	FI_ACCOUNT	7700	108	100
13	112	Jose Manuel	Urman	jmurman	515.124.4469	2006-03-07	FI_ACCOUNT	7800	108	100
14	113	Luis	Popp	lpopp	515.124.4567	2007-12-07	FI_ACCOUNT	6900	108	100
15	114	Den	Raphaely	drapheal	515.127.4561	2002-12-07	PU_MAN	11000	100	30
16	115	Alexander	Khoo	akhoo	515.127.4562	2003-05-18	PU_CLERK	3100	114	30