

CSE370 : Database Systems

Assignment 02 | Fall 2024

ID : <22299480> | Name : Mihir Das

No 1 Query (as Plain Text)	SELECT first_name, last_name, email, phone_number, hire_date, department_id FROM Employee WHERE hire_date = (SELECT MAX(hire_date) FROM Employee);
No 1 SS (of Query & Output in Shell)	<pre>MariaDB [Company_22299480]> CREATE TABLE Employee (-> employee_id CHAR(10), -> first_name VARCHAR(20), -> last_name VARCHAR(20), -> email VARCHAR(60), -> phone_number CHAR(14), -> hire_date DATE, -> job_id CHAR(10), -> salary INT, -> commission_pct DECIMAL(5,3), -> manager_id CHAR(10), -> department_id CHAR(10) ->); Query OK, 0 rows affected (0.026 sec)</pre>

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MariaDB [Company_22299480]> INSERT INTO Employee VALUES
-> ('EMP001', 'John', 'Doe', 'john.doe@gmail.com', '01718479830', '2023-01-15', 'JOB001', 22000, 0.060, 'MNG001', 'DPT001'),
-> ('EMP002', 'Ross', 'Taylor', 'ross.taylor@gmail.com', '01718479846', '2023-02-20', 'JOB002', 30000, 0.045, 'MNG002', 'DPT002'),
-> ('EMP003', 'Tedd', 'Moseby', 'tedd.moseby@gmail.com', '01718479835', '2023-03-10', 'JOB003', 15000, 0.070, 'MNG003', 'DPT007'),
-> ('EMP004', 'Will', 'Smith', 'will.smith@gmail.com', '01718479867', '2023-04-05', 'JOB004', 8000, 0.030, 'MNG004', 'DPT004'),
-> ('EMP005', 'Charlie', 'Puth', 'charlie.puth@gmail.com', '01718479823', '2023-05-01', 'JOB005', 20000, 0.090, 'MNG005', 'DPT005'),
-> ('EMP006', 'Billy', 'Maximoff', 'billy.maximoff@gmail.com', '01718479833', '2023-01-15', 'JOB006', 48000, 0.065, 'MNG006', 'DPT006'),
-> ('EMP007', 'Tom', 'Holland', 'tom.holland@gmail.com', '01718479854', '2023-02-08', 'JOB007', 18000, 0.090, 'MNG007', 'DPT007'),
-> ('EMP008', 'Andrew', 'Davis', 'andrew.davis@gmail.com', '01718479816', '2023-03-15', 'JOB008', 34000, 0.045, 'MNG007', 'DPT004'),
-> ('EMP009', 'Ronn', 'Carlson', 'ronn.carlson@gmail.com', '01718479852', '2023-04-14', 'JOB009', 16000, 0.080, 'MNG009', 'DPT007'),
-> ('EMP010', 'Milly', 'Brown', 'milly.brown@gmail.com', '01718479844', '2023-05-26', 'JOB010', 2000, 0.025, 'MNG0010', 'DPT0001'),
-> ('EMP011', 'Timmy', 'Harris', 'timmy.harris@gmail.com', '01718479855', '2023-01-23', 'JOB011', 48000, 0.062, 'MNG0011', 'DPT007'),
-> ('EMP012', 'Bob', 'Ross', 'bob.ross@gmail.com', '01718479897', '2023-02-19', 'JOB012', 26000, 0.085, 'MNG0012', 'DPT0012'),
-> ('EMP013', 'Rodd', 'Tucker', 'rodd.tucker@gmail.com', '01718479876', '2023-03-13', 'JOB013', 12000, 0.036, 'MNG0010', 'DPT007'),
-> ('EMP014', 'Elon', 'Musk', 'elon.musk@gmail.com', '01718479858', '2023-04-09', 'JOB014', 21000, 0.055, 'MNG007', 'DPT003'),
-> ('EMP015', 'Reed', 'Richard', 'reed.richard@gmail.com', '01718479842', '2023-05-11', 'JOB015', 32000, 0.065, 'MNG0012', 'DPT007');
Query OK, 15 rows affected (0.009 sec)
Records: 15 Duplicates: 0 Warnings: 0

```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
EMP001	John	Doe	john.doe@gmail.com	01718479830	2023-01-15	JOB001	22000	0.060	MNG001	DPT001
EMP002	Ross	Taylor	ross.taylor@gmail.com	01718479846	2023-02-20	JOB002	30000	0.045	MNG002	DPT002
EMP003	Tedd	Moseby	tedd.moseby@gmail.com	01718479835	2023-03-10	JOB003	15000	0.070	MNG003	DPT007
EMP004	Will	Smith	will.smith@gmail.com	01718479867	2023-04-05	JOB004	8000	0.030	MNG004	DPT004
EMP005	Charlie	Puth	charlie.puth@gmail.com	01718479823	2023-05-01	JOB005	20000	0.090	MNG005	DPT005
EMP006	Billy	Maximoff	billy.maximoff@gmail.com	01718479833	2023-01-15	JOB006	48000	0.065	MNG006	DPT006
EMP007	Tom	Holland	tom.holland@gmail.com	01718479854	2023-02-08	JOB007	18000	0.090	MNG007	DPT007
EMP008	Andrew	Davis	andrew.davis@gmail.com	01718479816	2023-03-15	JOB008	34000	0.045	MNG007	DPT004
EMP009	Ronn	Carlson	ronn.carlson@gmail.com	01718479852	2023-04-14	JOB009	16000	0.080	MNG009	DPT007
EMP010	Milly	Brown	milly.brown@gmail.com	01718479844	2023-05-26	JOB010	2000	0.025	MNG0010	DPT0001
EMP011	Timmy	Harris	timmy.harris@gmail.com	01718479855	2023-01-23	JOB011	48000	0.062	MNG0011	DPT007
EMP012	Bob	Ross	bob.ross@gmail.com	01718479897	2023-02-19	JOB012	26000	0.085	MNG0012	DPT0012
EMP013	Rodd	Tucker	rodd.tucker@gmail.com	01718479876	2023-03-13	JOB013	12000	0.036	MNG0010	DPT007
EMP014	Elon	Musk	elon.musk@gmail.com	01718479858	2023-04-09	JOB014	21000	0.055	MNG007	DPT003
EMP015	Reed	Richard	reed.richard@gmail.com	01718479842	2023-05-11	JOB015	32000	0.065	MNG0012	DPT007

```

MariaDB [Company_22299480]> SELECT first_name, last_name, email, phone_number, hire_date, department_id
-> FROM Employee
-> WHERE hire_date = (SELECT MAX(hire_date) FROM Employee);
+-----+-----+-----+-----+-----+-----+
| first_name | last_name | email | phone_number | hire_date | department_id |
+-----+-----+-----+-----+-----+-----+
| Milly | Brown | milly.brown@gmail.com | 01718479844 | 2023-05-26 | DPT0001 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)

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No 2 Query (as Plain Text)	SELECT first_name, last_name, employee_id, phone_number, salary, department_id FROM Employee AS e1 WHERE salary = (SELECT MIN(salary) FROM Employee AS e2 GROUP BY department_id);																																																																		
No 2 SS (of Query & Output in Shell)	<pre>MariaDB [Company_22299480]> SELECT first_name, last_name, employee_id, phone_number, salary, department_id -> FROM Employee AS e1 -> WHERE salary = ANY (-> SELECT MIN(salary) -> FROM Employee AS e2 -> GROUP BY department_id ->);</pre> <table><tr><th>first_name</th><th>last_name</th><th>employee_id</th><th>phone_number</th><th>salary</th><th>department_id</th></tr><tr><td>John</td><td>Doe</td><td>EMP001</td><td>01718479830</td><td>22000</td><td>DPT001</td></tr><tr><td>Ross</td><td>Taylor</td><td>EMP002</td><td>01718479846</td><td>30000</td><td>DPT002</td></tr><tr><td>Will</td><td>Smith</td><td>EMP004</td><td>01718479867</td><td>8000</td><td>DPT004</td></tr><tr><td>Charlie</td><td>Puth</td><td>EMP005</td><td>01718479823</td><td>20000</td><td>DPT005</td></tr><tr><td>Billy</td><td>Maximoff</td><td>EMP006</td><td>01718479833</td><td>48000</td><td>DPT006</td></tr><tr><td>Milly</td><td>Brown</td><td>EMP0010</td><td>01718479844</td><td>2000</td><td>DPT0001</td></tr><tr><td>Timmy</td><td>Harris</td><td>EMP0011</td><td>01718479855</td><td>48000</td><td>DPT007</td></tr><tr><td>Bob</td><td>Ross</td><td>EMP0012</td><td>01718479897</td><td>26000</td><td>DPT0012</td></tr><tr><td>Rodd</td><td>Tucker</td><td>EMP0013</td><td>01718479876</td><td>12000</td><td>DPT007</td></tr><tr><td>Elon</td><td>Musk</td><td>EMP0014</td><td>01718479858</td><td>21000</td><td>DPT003</td></tr></table> <pre>10 rows in set (0.000 sec)</pre>	first_name	last_name	employee_id	phone_number	salary	department_id	John	Doe	EMP001	01718479830	22000	DPT001	Ross	Taylor	EMP002	01718479846	30000	DPT002	Will	Smith	EMP004	01718479867	8000	DPT004	Charlie	Puth	EMP005	01718479823	20000	DPT005	Billy	Maximoff	EMP006	01718479833	48000	DPT006	Milly	Brown	EMP0010	01718479844	2000	DPT0001	Timmy	Harris	EMP0011	01718479855	48000	DPT007	Bob	Ross	EMP0012	01718479897	26000	DPT0012	Rodd	Tucker	EMP0013	01718479876	12000	DPT007	Elon	Musk	EMP0014	01718479858	21000	DPT003
first_name	last_name	employee_id	phone_number	salary	department_id																																																														
John	Doe	EMP001	01718479830	22000	DPT001																																																														
Ross	Taylor	EMP002	01718479846	30000	DPT002																																																														
Will	Smith	EMP004	01718479867	8000	DPT004																																																														
Charlie	Puth	EMP005	01718479823	20000	DPT005																																																														
Billy	Maximoff	EMP006	01718479833	48000	DPT006																																																														
Milly	Brown	EMP0010	01718479844	2000	DPT0001																																																														
Timmy	Harris	EMP0011	01718479855	48000	DPT007																																																														
Bob	Ross	EMP0012	01718479897	26000	DPT0012																																																														
Rodd	Tucker	EMP0013	01718479876	12000	DPT007																																																														
Elon	Musk	EMP0014	01718479858	21000	DPT003																																																														
No 3 Query	SELECT first_name, last_name, employee_id, commission_pct, department_id																																																																		

(as Plain Text)	FROM Employee WHERE department_id = 'DPT007' AND commission_pct < ALL (SELECT commission_pct FROM Employee WHERE department_id = 'DPT005');																														
No 3 SS (of Query & Output in Shell)	<pre>MariaDB [Company_22299480]> SELECT first_name, last_name, employee_id, commission_pct, department_id -> FROM Employee -> WHERE department_id = 'DPT007' -> AND commission_pct < ALL (-> SELECT commission_pct -> FROM Employee -> WHERE department_id = 'DPT005' ->);</pre> <table><tr><th>first_name</th><th>last_name</th><th>employee_id</th><th>commission_pct</th><th>department_id</th></tr><tr><td>Tedd</td><td>Moseby</td><td>EMP003</td><td>0.070</td><td>DPT007</td></tr><tr><td>Ronn</td><td>Carlson</td><td>EMP009</td><td>0.080</td><td>DPT007</td></tr><tr><td>Timmy</td><td>Harris</td><td>EMP0011</td><td>0.062</td><td>DPT007</td></tr><tr><td>Rodd</td><td>Tucker</td><td>EMP0013</td><td>0.036</td><td>DPT007</td></tr><tr><td>Reed</td><td>Richard</td><td>EMP0015</td><td>0.065</td><td>DPT007</td></tr></table> <pre>5 rows in set (0.000 sec)</pre>	first_name	last_name	employee_id	commission_pct	department_id	Tedd	Moseby	EMP003	0.070	DPT007	Ronn	Carlson	EMP009	0.080	DPT007	Timmy	Harris	EMP0011	0.062	DPT007	Rodd	Tucker	EMP0013	0.036	DPT007	Reed	Richard	EMP0015	0.065	DPT007
first_name	last_name	employee_id	commission_pct	department_id																											
Tedd	Moseby	EMP003	0.070	DPT007																											
Ronn	Carlson	EMP009	0.080	DPT007																											
Timmy	Harris	EMP0011	0.062	DPT007																											
Rodd	Tucker	EMP0013	0.036	DPT007																											
Reed	Richard	EMP0015	0.065	DPT007																											
No 4 Query (as Plain Text)	SELECT department_id, COUNT(*) AS total_employee_count FROM Employee GROUP BY department_id HAVING MAX(salary) <= 30000;																														

No 4 SS
(of Query & Output
in Shell)

```
MariaDB [Company_22299480]> SELECT department_id, COUNT(*) AS total_employee_count
-> FROM Employee
-> GROUP BY department_id
-> HAVING MAX(salary) <= 30000;

+-----+-----+
| department_id | total_employee_count |
+-----+-----+
| DPT0001       | 1                    |
| DPT001        | 1                    |
| DPT0012       | 1                    |
| DPT002        | 1                    |
| DPT003        | 1                    |
| DPT005        | 1                    |
+-----+-----+
6 rows in set (0.009 sec)
```

No 5 Query
(as Plain Text)

```
SELECT department_id, job_id, commission_pct
FROM Employee e1
WHERE e1.commission_pct < ANY (
  SELECT MAX(e2.commission_pct)
  FROM Employee AS e2
  WHERE e1.department_id = e2.department_id
  AND e2.job_id != e1.job_id
);
```

No 5 SS
(of Query & Output
in Shell)

```
MariaDB [Company_22299480]> SELECT department_id, job_id, commission_pct  
-> FROM Employee e1  
-> WHERE e1.commission_pct < ANY (  
->     SELECT MAX(e2.commission_pct)  
->     FROM Employee AS e2  
->     WHERE e1.department_id = e2.department_id  
->     AND e2.job_id != e1.job_id  
-> );
```

department_id	job_id	commission_pct
DPT007	JOB003	0.070
DPT004	JOB004	0.030
DPT007	JOB009	0.080
DPT007	JOB0011	0.062
DPT007	JOB0013	0.036
DPT007	JOB0015	0.065

6 rows in set (0.001 sec)

No 6 Query
(as Plain Text)

```
SELECT manager_id  
FROM Employee  
GROUP BY manager_id  
HAVING MIN(salary) >= 3500;
```

No 6 SS
(of Query & Output
in Shell)

```
MariaDB [Company_22299480]> SELECT manager_id
-> FROM Employee
-> GROUP BY manager_id
-> HAVING MIN(salary) >= 3500;

+-----+
| manager_id |
+-----+
| MNG001     |
| MNG0011    |
| MNG0012    |
| MNG002     |
| MNG003     |
| MNG004     |
| MNG005     |
| MNG006     |
| MNG007     |
| MNG009     |
+-----+
10 rows in set (0.000 sec)
```

No 7 Query
(as Plain Text)

```
SELECT first_name, last_name, employee_id, email, salary, department_id, commission_pct
FROM Employee AS e1
HAVING commission_pct = ANY (
  SELECT MIN(commission_pct)
  FROM Employee AS e2
  WHERE e1.manager_id = e2.manager_id
);
```

No 7 SS
(of Query & Output
in Shell)

```
MariaDB [Company_22299480]> SELECT first_name, last_name, employee_id, email, salary, department_id, commission_pct  
-> FROM Employee AS e1  
-> HAVING commission_pct = ANY (  
->     SELECT MIN(commission_pct)  
->     FROM Employee AS e2  
->     WHERE e1.manager_id = e2.manager_id  
-> );
```

first_name	last_name	employee_id	email	salary	department_id	commission_pct
John	Doe	EMP001	john.doe@gmail.com	22000	DPT001	0.060
Ross	Taylor	EMP002	ross.taylor@gmail.com	30000	DPT002	0.045
Tedd	Moseby	EMP003	tedd.moseby@gmail.com	15000	DPT007	0.070
Will	Smith	EMP004	will.smith@gmail.com	8000	DPT004	0.030
Charlie	Puth	EMP005	charlie.puth@gmail.com	20000	DPT005	0.090
Billy	Maximoff	EMP006	billy.maximoff@gmail.com	48000	DPT006	0.065
Andrew	Davis	EMP008	andrew.davis@gmail.com	34000	DPT004	0.045
Ronn	Carlson	EMP009	ronn.carlson@gmail.com	16000	DPT007	0.080
Milly	Brown	EMP0010	milly.brown@gmail.com	2000	DPT0001	0.025
Timmy	Harris	EMP0011	timmy.harris@gmail.com	48000	DPT007	0.062
Reed	Richard	EMP0015	reed.richard@gmail.com	32000	DPT007	0.065

11 rows in set (0.000 sec)