

## CSE370 : Database Systems

### Assignment 02 | Fall 2024

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<b>No 1 Query</b> <b>(as Plain Text)</b>	SELECT first_name, last_name, email, phone_number, hire_date, department_id FROM Employee WHERE hire_date = (SELECT max(hire_date) FROM Employee);
<b>No 1 SS</b> <b>(of Query &amp; Output in Shell)</b>	<pre>MariaDB [Company_20301484]&gt; 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   +-----+-----+-----+-----+-----+-----+   Noshin       Adib        noshin.adib@gmail.com   9643456123     2024-10-15   DPT002          +-----+-----+-----+-----+-----+-----+ 1 row in set (0.005 sec)</pre>
<b>No 2 Query</b> <b>(as Plain Text)</b>	SELECT first_name, last_name, employee_id, phone_number, salary, department_id FROM Employee E1 WHERE (E1.department_id, E1.salary) IN (SELECT E2.department_id, min(E2.salary) FROM Employee E2 GROUP BY department_id);
<b>No 2 SS</b> <b>(of Query &amp; Output in Shell)</b>	<pre>MariaDB [Company_20301484]&gt; SELECT first_name, last_name, employee_id, phone_number, salary, department_id FROM Employee E1 WHERE (E1.department_id, E1.salary) IN (SELECT E2.department_id, min(E2.salary) FROM Employee E2 GROUP BY department_id); +-----+-----+-----+-----+-----+-----+   first_name   last_name   employee_id   phone_number   salary   department_id   +-----+-----+-----+-----+-----+-----+   Emily        Johnson     EMP002        0123456789     2500     DPT001            Noshin       Adib        EMP004        9643456123     1500     DPT002            Farhan       Sadik       EMP006        5643456789     8000     DPT003            Bradshaw     Layfield    EMP008        0123456789     15000    DPT004            Mahabub      Hossain     EMP009        0123456789     20000    DPT005            Rich         Holland     EMP012        0123456789     20000    DPT006            David        Warner      EMP016        0678556789     1000     DPT007          +-----+-----+-----+-----+-----+-----+ 7 rows in set (0.001 sec)</pre> <p>Activate Windows Go to Settings to activate Windows.</p>
<b>No 3 Query</b> <b>(as Plain Text)</b>	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");

No 3 SS (of Query & Output in Shell)	<pre>MariaDB [Company_20301484]&gt; SELECT first_name, last_name, employee_id, commission_pct, department_id FROM Employee WHERE department_id = "DPT007" AND commission_pct &lt; ALL (SELECT commission_pct FROM Employee WHERE department_id = "DPT005");</pre> <table><thead><tr><th>first_name</th><th>last_name</th><th>employee_id</th><th>commission_pct</th><th>department_id</th></tr></thead><tbody><tr><td>Steve</td><td>Smith</td><td>EMP014</td><td>1.512</td><td>DPT007</td></tr><tr><td>David</td><td>Warner</td><td>EMP016</td><td>1.312</td><td>DPT007</td></tr></tbody></table> <pre>2 rows in set (0.002 sec)</pre>	first_name	last_name	employee_id	commission_pct	department_id	Steve	Smith	EMP014	1.512	DPT007	David	Warner	EMP016	1.312	DPT007												
first_name	last_name	employee_id	commission_pct	department_id																								
Steve	Smith	EMP014	1.512	DPT007																								
David	Warner	EMP016	1.312	DPT007																								
No 4 Query (as Plain Text)	SELECT department_id, COUNT(*) FROM Employee GROUP BY department_id HAVING max(salary) <= 30000;																											
No 4 SS (of Query & Output in Shell)	<pre>MariaDB [Company_20301484]&gt; SELECT department_id, COUNT(*) FROM Employee GROUP BY department_id HAVING max(salary) &lt;= 30000;</pre> <table><thead><tr><th>department_id</th><th>COUNT(*)</th></tr></thead><tbody><tr><td>DPT003</td><td>2</td></tr></tbody></table> <pre>1 row in set (0.001 sec)</pre>	department_id	COUNT(*)	DPT003	2																							
department_id	COUNT(*)																											
DPT003	2																											
No 5 Query (as Plain Text)	SELECT department_id, job_id, commission_pct FROM Employee E1 WHERE EXISTS (SELECT commission_pct FROM Employee E2 WHERE E1.department_id = E2.department_id AND E1.commission_pct < E2.commission_pct);																											
No 5 SS (of Query & Output in Shell)	<pre>MariaDB [Company_20301484]&gt; SELECT department_id, job_id, commission_pct FROM Employee E1 WHERE EXISTS (SELECT commission_pct FROM Employee E2 WHERE E1.department_id = E2.department_id AND E1.commission_pct &lt; E2.commission_pct);</pre> <table><thead><tr><th>department_id</th><th>job_id</th><th>commission_pct</th></tr></thead><tbody><tr><td>DPT001</td><td>JOB002</td><td>1.112</td></tr><tr><td>DPT002</td><td>JOB004</td><td>1.012</td></tr><tr><td>DPT003</td><td>JOB006</td><td>1.612</td></tr><tr><td>DPT005</td><td>JOB009</td><td>2.312</td></tr><tr><td>DPT005</td><td>JOB011</td><td>4.312</td></tr><tr><td>DPT006</td><td>JOB012</td><td>2.312</td></tr><tr><td>DPT007</td><td>JOB016</td><td>1.312</td></tr><tr><td>DPT007</td><td>JOB014</td><td>1.512</td></tr></tbody></table> <pre>8 rows in set (0.001 sec)</pre>	department_id	job_id	commission_pct	DPT001	JOB002	1.112	DPT002	JOB004	1.012	DPT003	JOB006	1.612	DPT005	JOB009	2.312	DPT005	JOB011	4.312	DPT006	JOB012	2.312	DPT007	JOB016	1.312	DPT007	JOB014	1.512
department_id	job_id	commission_pct																										
DPT001	JOB002	1.112																										
DPT002	JOB004	1.012																										
DPT003	JOB006	1.612																										
DPT005	JOB009	2.312																										
DPT005	JOB011	4.312																										
DPT006	JOB012	2.312																										
DPT007	JOB016	1.312																										
DPT007	JOB014	1.512																										

<b>No 6 Query (as Plain Text)</b>	SELECT DISTINCT manager_id FROM Employee E1 WHERE NOT EXISTS (SELECT salary FROM Employee E2 WHERE E1.manager_id = E2.manager_id AND E2.salary < 3500);
<b>No 6 SS (of Query &amp; Output in Shell)</b>	<pre> MariaDB [Company_20301484]&gt; SELECT DISTINCT manager_id FROM Employee E1 WHERE NOT EXISTS (SELECT salary FROM Employee E2 WHERE E1.manager_id = E2.manager_id AND E2.salary &lt; 3500); +-----+   manager_id   +-----+   MNG003         MNG004         MNG005         MNG006       +-----+ 4 rows in set (0.001 sec) </pre>
<b>No 7 Query (as Plain Text)</b>	SELECT first_name, last_name, employee_id, email, salary, department_id, commission_pct FROM Employee E1 WHERE (E1.manager_id, E1.commission_pct) IN (SELECT E2.manager_id, min(E2.commission_pct) FROM Employee E2 GROUP BY manager_id);
<b>No 7 SS (of Query &amp; Output in Shell)</b>	<pre> MariaDB [Company_20301484]&gt; SELECT first_name, last_name, employee_id, email, salary, department_id, commission_pct FROM Employee E1 WHERE (E1.manager_id, E1.commission_pct) IN (SELECT E2.manager_id, min(E2.commission_pct) FROM Employee E2 GROUP BY manager_id); +-----+-----+-----+-----+-----+-----+-----+   first_name   last_name   employee_id   email   salary   department_id   commission_pct   +-----+-----+-----+-----+-----+-----+-----+   Emily        Johnson     EMP002        emily.johnson@gmail.com   2500     DPT001          1.112              Noshin       Adib        EMP004        noshin.adib@gmail.com     1500     DPT002          1.012              Farhan       Sadik       EMP006        farhan.sadik@gmail.com    8000     DPT003          1.612              Chris        Brown       EMP007        chris.brown@gmail.com     35000    DPT004          3.312              Bradshaw     Layfield    EMP008        bradshaw.layfield@gmail.com   15000    DPT004          3.312              Mahabub      Hossain     EMP009        mahabub.hossain@gmail.com   20000    DPT005          2.312              Rich         Holland     EMP012        rich.holland@gmail.com    20000    DPT006          2.312              David        Warner      EMP016        david.warner@gmail.com     1000     DPT007          1.312            +-----+-----+-----+-----+-----+-----+-----+ 8 rows in set (0.002 sec) </pre>
<b>Basic Info Query (as Plain Text)</b>	CREATE DATABASE Company_20301484; USE Company_20301484; 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)
-> );
```

INSERT INTO Employee values

```
-> ('EMP001', 'James', 'Anderson', 'james.anderson@gmail.com', '0123456789', '2021-03-15', 'JOB001', 40000, 05.612,
'MNG001', 'DPT001'),
-> ("EMP002", "Emily", "Johnson", "emily.johnson@gmail.com", "0123456789", "2024-07-15", "JOB002", 2500, 01.112,
"MNG001", "DPT001"),
-> ("EMP003", "Abrar", "Adib", "abrar.adib@gmail.com", "0123456123", "2019-03-15", "JOB003", 50000, 06.312,
"MNG002", "DPT002"),
-> ("EMP004", "Noshin", "Adib", "noshin.adib@gmail.com", "9643456123", "2024-10-15", "JOB004", 1500, 01.012,
"MNG002", "DPT002"),
-> ("EMP005", "Sadikul", "Sadek", "sadikul.sadek@gmail.com", "5643456789", "2022-03-15", "JOB005", 20000, 03.312,
"MNG003", "DPT003"),
-> ("EMP006", "Farhan", "Sadik", "farhan.sadik@gmail.com", "5643456789", "2024-03-15", "JOB006", 8000, 01.612,
"MNG003", "DPT003"),
-> ("EMP007", "Chris", "Brown", "chris.brown@gmail.com", "0123456789", "2022-03-15", "JOB007", 35000, 03.312,
"MNG004", "DPT004"),
-> ("EMP008", "Bradshaw", "Layfield", "bradshaw.layfield@gmail.com", "0123456789", "2023-03-15", "JOB008", 15000,
03.312, "MNG004", "DPT004"),
-> ("EMP009", "Mahabub", "Hossain", "mahabub.hossain@gmail.com", "0123456789", "2023-03-15", "JOB009", 20000,
02.312, "MNG005", "DPT005"),
```

```
-> ("EMP010", "Emily", "Blunt", "emily.blunt@gmail.com", "0123456789", "2020-03-15", "JOB010", 50000, 05.912,
"MNG005", "DPT005"),
-> ("EMP011", "Kevin", "Steam", "kevin.steam@gmail.com", "0123456789", "2021-03-15", "JOB011", 40000, 04.312,
"MNG005", "DPT005"),
-> ("EMP012", "Rich", "Holland", "rich.holland@gmail.com", "0123456789", "2023-03-15", "JOB012", 20000, 02.312,
"MNG006", "DPT006"),
-> ("EMP013", "Erling", "Haaland", "erling.haaland@gmail.com", "0123456789", "2022-03-15", "JOB013", 35000, 03.912,
"MNG006", "DPT006"),
-> ("EMP014", "Steve", "Smith", "steve.smith@gmail.com", "0123456789", "2024-08-05", "JOB014", 2000, 01.512,
"MNG007", "DPT007"),
-> ("EMP015", "Dwayne", "Johnson", "dwayne.johnson@gmail.com", "0129876789", "2020-03-25", "JOB015", 50000,
05.312, "MNG007", "DPT007"),
-> ("EMP016", "David", "Warner", "david.warner@gmail.com", "0678556789", "2024-07-10", "JOB016", 1000, 01.312,
"MNG007", "DPT007");
```

### Basic Info SS (of Query & Output in Shell)

```
MariaDB [Company_20301484]> SELECT * FROM Employee;
```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
EMP001	James	Anderson	james.anderson@gmail.com	0123456789	2021-03-15	JOB001	40000	5.612	MNG001	DPT001
EMP002	Emily	Johnson	emily.johnson@gmail.com	0123456789	2024-07-15	JOB002	2500	1.112	MNG001	DPT001
EMP003	Abrar	Adib	abrar.adib@gmail.com	0123456123	2019-03-15	JOB003	50000	6.312	MNG002	DPT002
EMP004	Noshin	Adib	noshin.adib@gmail.com	9643456123	2024-10-15	JOB004	1500	1.012	MNG002	DPT002
EMP005	Sadikul	Sadek	sadikul.sadek@gmail.com	5643456789	2022-03-15	JOB005	20000	3.312	MNG003	DPT003
EMP006	Farhan	Sadik	farhan.sadik@gmail.com	5643456789	2024-03-15	JOB006	8000	1.612	MNG003	DPT003
EMP007	Chris	Brown	chris.brown@gmail.com	0123456789	2022-03-15	JOB007	35000	3.312	MNG004	DPT004
EMP008	Bradshaw	Layfield	bradshaw.layfield@gmail.com	0123456789	2023-03-15	JOB008	15000	3.312	MNG004	DPT004
EMP009	Mahabub	Hossain	mahabub.hossain@gmail.com	0123456789	2023-03-15	JOB009	20000	2.312	MNG005	DPT005
EMP010	Emily	Blunt	emily.blunt@gmail.com	0123456789	2020-03-15	JOB010	50000	5.912	MNG005	DPT005
EMP011	Kevin	Steam	kevin.steam@gmail.com	0123456789	2021-03-15	JOB011	40000	4.312	MNG005	DPT005
EMP012	Rich	Holland	rich.holland@gmail.com	0123456789	2023-03-15	JOB012	20000	2.312	MNG006	DPT006
EMP013	Erling	Haaland	erling.haaland@gmail.com	0123456789	2022-03-15	JOB013	35000	3.912	MNG006	DPT006
EMP014	Steve	Smith	steve.smith@gmail.com	0123456789	2024-08-05	JOB014	2000	1.512	MNG007	DPT007
EMP015	Dwayne	Johnson	dwayne.johnson@gmail.com	0129876789	2020-03-25	JOB015	50000	5.312	MNG007	DPT007
EMP016	David	Warner	david.warner@gmail.com	0678556789	2024-07-10	JOB016	1000	1.312	MNG007	DPT007

```
16 rows in set (0.001 sec)
```