

Advanced Database - TP 2

Advanced SQL

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Answer 1:

1. Gets the 2 persons per department, who have arrived the latest in the company.

The screenshot shows the Oracle SQL Developer interface. In the top tab bar, there are three tabs: DIP.sql, DIP1.sql, and DIP. The DIP tab is active. Below the tabs is a toolbar with various icons. The main area has two tabs: Worksheet and Query Builder. The Worksheet tab is active, displaying the following SQL code:

```
SELECT DEPTNO, EMPNO, HIREDATE
FROM (
    SELECT DEPTNO, EMPNO, HIREDATE,
           ROW_NUMBER() OVER (PARTITION BY DEPTNO ORDER BY HIREDATE DESC) AS row_num
    FROM EMP
)
WHERE row_num <= 2;
```

Below the code, the Query Result tab is active, showing the results of the query:

| DEPTNO | EMPNO | HIREDATE |
|--------|-------|----------------|
| 1 | 10 | 7934 23-JAN-82 |
| 2 | 10 | 7839 17-NOV-81 |
| 3 | 20 | 7876 12-JAN-83 |
| 4 | 20 | 7788 09-DEC-82 |
| 5 | 30 | 7900 03-DEC-81 |
| 6 | 30 | 7654 28-SEP-81 |

The results show six rows, each representing an employee from a specific department, ordered by hire date in descending order within their department. The WHERE clause ensures that only the top two employees from each department are selected.

Answer 2:

2. Show your analytical Skill and Invents an interesting query using Windows Functions (i.e.: a SELECT query on EMP table): The query should include the usage of “ROWS BETWEEN 1 PRECEDING AND 1 FOLLOWING”.

Answer 3:

Execute this script (create 3 tables and load random data inside):

The screenshot shows the Oracle SQL Developer interface with the following details:

- Top Bar:** Shows tabs for DIP.sql, DIP1.sql, and DIP, along with various tool icons.
- Toolbar:** Includes icons for Run, Stop, Refresh, Save, and others.
- Worksheet Tab:** Active tab labeled "Worksheet".
- Query Builder:** Shows two DML statements:
 - `CREATE TABLE EMP_MEDIUM_TABLE (EMPNO NUMBER(10), MANAGER_ID NUMBER(10), DEPTID VARCHAR2(10), GENDER VARCHAR2(2) not null, NAME VARCHAR2(1000));`
 - `INSERT INTO EMP_MEDIUM_TABLE SELECT LEVEL, TRUNC(DBMS_RANDOM.VALUE (1, 100), 0)` with annotations: `empl_id`, `manager_id`.
- Bottom Navigation:** Buttons for Query Result, Script Output, and other options.
- Status Bar:** Task completed in 5.676 seconds.
- Output Area:** Displays the results of the executed DML statements:
 - Table PROJECT_MEDIUM_TABLE created.
 - 50,000 rows inserted.
 - Table PROJECT_EMP_MEDIUM_TABLE created.
 - 50,000 rows inserted.

Answer 4:

The goal of this question is to check the response time of query in the time that we ran the query we can see that the response time is 0.023.

The screenshot shows the DBeaver interface with the following details:

- Top Bar:** Shows three tabs: DIP.sql, DIP1.sql, and DIP.
- Toolbar:** Includes icons for Run, Stop, Refresh, Save, Import, Export, Paste, and Font Size.
- Worksheet Tab:** Active tab, showing "Query Builder".
- Query Builder Content:** A SQL query: `SELECT gender, count(*) from EMP_MEDIUM_TABLE where MANAGER_ID = 7 group by gender;`
- Script Output Tab:** Active tab, showing the results of the query. The results table has two columns: GENDER and COUNT(*). The data is:

| GENDER | COUNT(*) |
|--------|----------|
| 1 M | 248 |
| 2 F | 236 |
- Message:** All Rows Fetched: 2 in 0.023 seconds

But second time that we ran the query we can see that the response time is much faster than the previous time because the data saved in cache of the system and the response time is much faster.

The screenshot shows the Oracle SQL Developer interface. In the top window (Worksheet), a query is being run:

```
SELECT gender, count(*) from EMP_MEDIUM_TABLE where MANAGER_ID = 7 group by gender;
```

In the bottom window (Query Result), the results are displayed in a table:

| GENDER | COUNT(*) |
|--------|----------|
| 1 M | 248 |
| 2 F | 236 |

Timing information: All Rows Fetched: 2 in 0.003 seconds.

Answer 5:

The screenshot shows the Oracle SQL Developer interface. In the top window (Worksheet), an EXPLAIN PLAN query is being run:

```
EXPLAIN PLAN FOR SELECT gender, count(*) from EMP_MEDIUM_TABLE where MANAGER_ID = 7 group by gender;  
SELECT * FROM PLAN_TABLE;
```

In the bottom window (Script Output), the results are displayed:

```
Explained.
```

The explained query

```

EXPLAIN PLAN FOR SELECT gender, count(*) from EMP_MEDIUM_TABLE where MANAGER_ID = 7 group by gender;
SELECT * FROM PLAN_TABLE;

```

Script Output | Query Result | All Rows Fetched: 9 in 0.008 seconds

| STATEMENT_ID | PLAN_ID | TIMESTAMP | REMARKS | OPERATION | OPTIONS | OBJECT_NODE | OBJECT_OWNER | OBJECT_NAME | OBJECT_ALIAS |
|--------------|-------------------|-----------|---------|------------------|-----------------|-------------|--------------|--------------------|--------------|
| 1 (null) | 114-MAR-23 (null) | | | SELECT STATEMENT | (null) | (null) | (null) | "EMP_MEDIUM_TABLE" | (null) |
| 2 (null) | 114-MAR-23 (null) | | | HASH | GROUP BY (null) | (null) | (null) | (null) | (null) |
| 3 (null) | 114-MAR-23 (null) | | | TABLE ACCESS | FULL | (null) | DIP | "EMP_MEDIUM_TABLE" | "SEL\$1" |
| 4 (null) | 214-MAR-23 (null) | | | SELECT STATEMENT | (null) | (null) | (null) | (null) | (null) |
| 5 (null) | 214-MAR-23 (null) | | | HASH | GROUP BY (null) | (null) | (null) | (null) | (null) |
| 6 (null) | 214-MAR-23 (null) | | | TABLE ACCESS | FULL | (null) | DIP | "EMP_MEDIUM_TABLE" | "SEL\$2" |
| 7 (null) | 314-MAR-23 (null) | | | SELECT STATEMENT | (null) | (null) | (null) | (null) | (null) |
| 8 (null) | 314-MAR-23 (null) | | | HASH | GROUP BY (null) | (null) | (null) | (null) | (null) |
| 9 (null) | 314-MAR-23 (null) | | | TABLE ACCESS | FULL | (null) | DIP | "EMP_MEDIUM_TABLE" | "SEL\$3" |

3.2

Using the following query we created an index for the columns of Manager_id and Gender on the table EMP_MEDIUM_TABLE.

```

CREATE INDEX MANAGER_ID_GENDER_INDEX ON EMP_MEDIUM_TABLE(MANAGER_ID, GENDER);

```

Script Output | Query Result | Task completed in 0.122 seconds

Explained.

Index MANAGER_ID_GENDER_INDEX created.

Using the following query we delete the created index.

```
DIP.sql x DIP1.sql x DIP x
Worksheet Query Builder
DROP INDEX MANAGER_ID_GENDER_INDEX;

Script Output x
Task completed in 0.084 seconds

Index MANAGER_ID_GENDER_INDEX dropped.
```

Using following query we created the index again.

```
DIP.sql x DIP1.sql x DIP x
Worksheet Query Builder
CREATE INDEX MANAGER_ID_INDEX ON EMP_MEDIUM_TABLE(MANAGER_ID);

Script Output x
Task completed in 0.075 seconds

Index MANAGER_ID_INDEX created.
```

If you use SqlPlus as a client (the display is easier with Sqlplus for Autrace). Run this:

```
C:\WINDOWS\system32\cmd.exe - sqlplus DIP/DIP
Microsoft Windows [Version 10.0.19045.2486]
(c) Microsoft Corporation. All rights reserved.

D:\Users\Hacker>sqlplus DIP/DIP

SQL*Plus: Release 21.0.0.0.0 - Production on Tue Mar 14 13:49:54 2023
Version 21.3.0.0.0

Copyright (c) 1982, 2021, Oracle. All rights reserved.

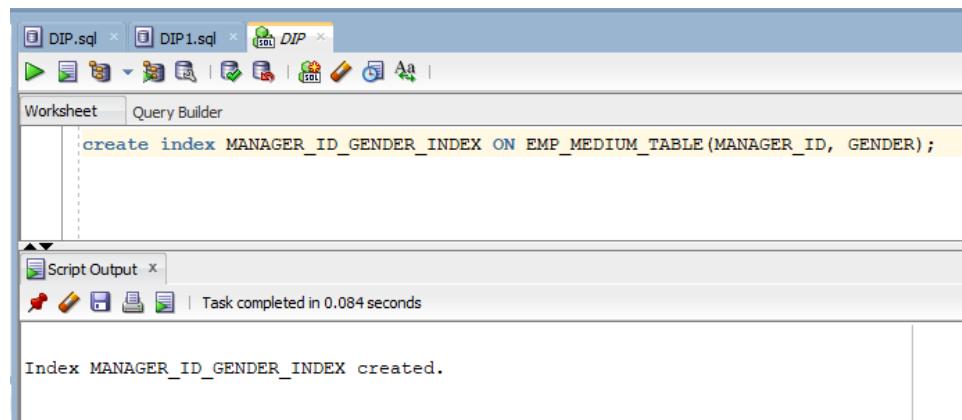
Last Successful login time: Tue Mar 14 2023 11:50:06 +01:00

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL> set autotrace traceonly timing on;
SQL>
```

4.

Add a **covering index** on both columns fetched:



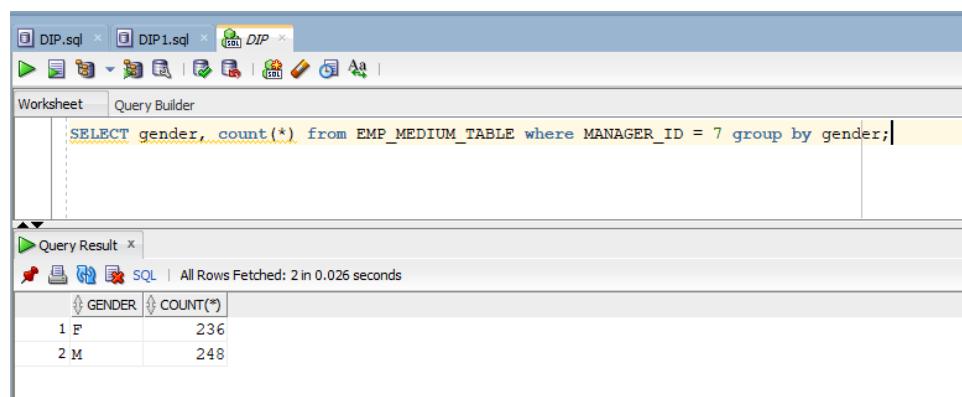
The screenshot shows the SQL Developer interface. In the top tab bar, there are three tabs: DIP.sql, DIP1.sql, and DIP. The DIP tab is active and shows a SQL editor window with the following code:

```
create index MANAGER_ID_GENDER_INDEX ON EMP_MEDIUM_TABLE(MANAGER_ID, GENDER);
```

Below the editor is a "Script Output" window showing the result of the execution:

```
Index MANAGER_ID_GENDER_INDEX created.
```

5.



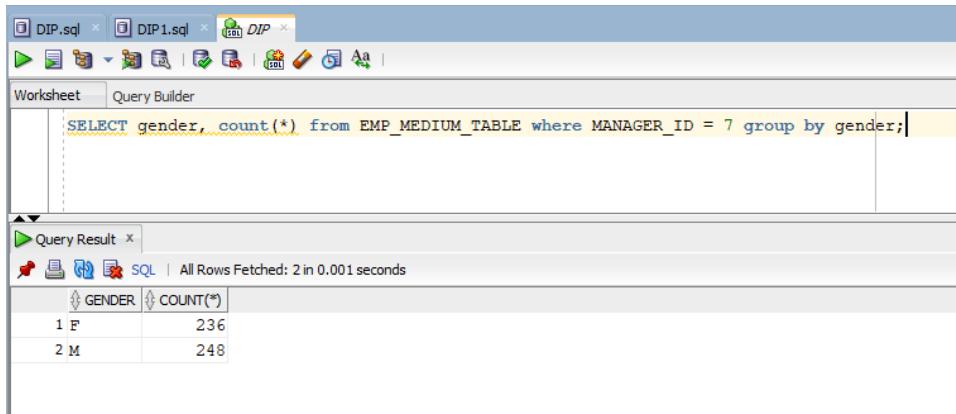
The screenshot shows the SQL Developer interface again. The DIP tab is active, and the SQL editor contains the following query:

```
SELECT gender, count(*) from EMP_MEDIUM_TABLE where MANAGER_ID = 7 group by gender;
```

Below the editor is a "Query Result" window displaying the output of the query:

| GENDER | COUNT(*) |
|--------|----------|
| 1 F | 236 |
| 2 M | 248 |

RESPONSE TIME IS 0.026



```
SELECT gender, count(*) from EMP_MEDIUM_TABLE where MANAGER_ID = 7 group by gender;
```

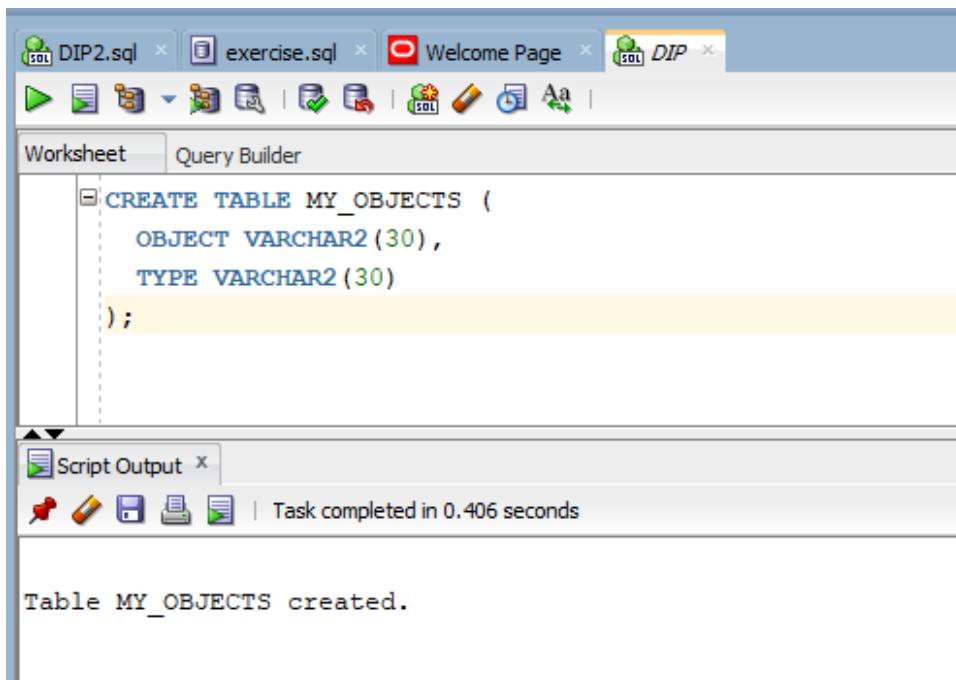
| GENDER | COUNT(*) |
|--------|----------|
| 1 F | 236 |
| 2 M | 248 |

SECOND TIME WHEN I RUN THE CODE THE REONSE TIME IS 0.001 IT MEAN MUCH MORE LESS THAN THE FIRST RESPONSE TIME BECUASE OUR QUERY SAVED IN THE CACHE AND IT WHY IN SECOND TIME THE RESPONSE TIME IS MUCH MORE FASTER.

Exercice 3. Data Dictionary

This script creates a table with two columns, OBJECT and TYPE, and then uses the INSERT INTO statement to populate the table with data from the USER_OBJECTS view. The OBJECT_NAME and OBJECT_TYPE columns from USER_OBJECTS are mapped to the OBJECT and TYPE columns in MY_OBJECTS, respectively.

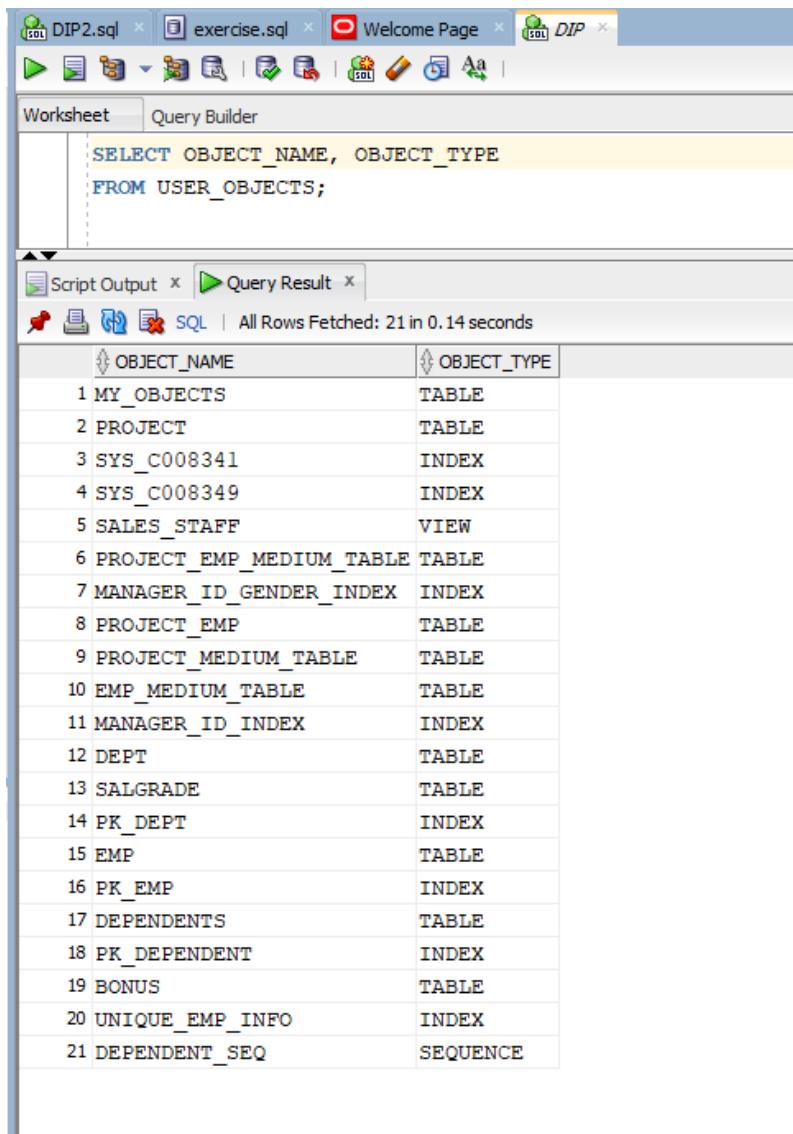
You can modify this script to include only the views that you are interested in, and to filter the results based on your criteria. For example, to show only tables and their associated constraints, you can modify the script as follows:



```
CREATE TABLE MY_OBJECTS (
    OBJECT VARCHAR2(30),
    TYPE VARCHAR2(30)
);
```

Table MY_OBJECTS created.

This modified script creates a table with two columns, OBJECT and TYPE, and then uses the INSERT INTO statement to populate the table with data from two views: USER_TABLES (for tables) and USER_CONSTRAINTS (for constraints). The SELECT statement for each view selects the relevant columns and adds a string literal for the type column. The UNION ALL operator combines the results from both queries into a single result set.



The screenshot shows the SSMS interface with a query window open. The query window contains the following SQL code:

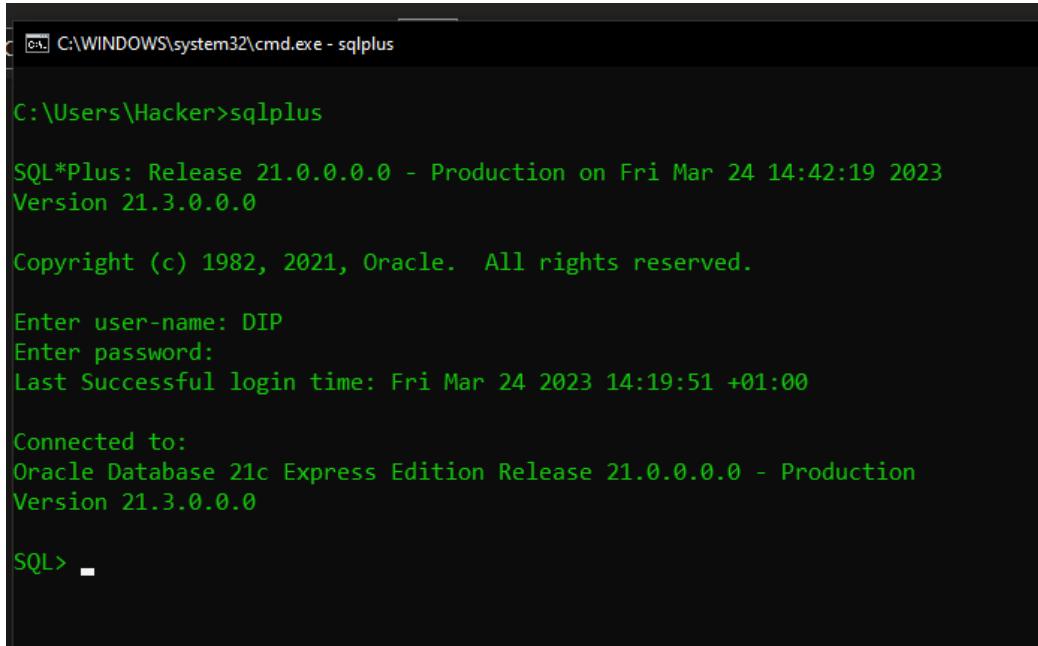
```
SELECT OBJECT_NAME, OBJECT_TYPE
FROM USER_OBJECTS;
```

The results pane displays a table with 21 rows, showing object names and their types. The table has two columns: OBJECT_NAME and OBJECT_TYPE. The data is as follows:

| OBJECT_NAME | OBJECT_TYPE |
|----------------------------|-------------|
| 1 MY_OBJECTS | TABLE |
| 2 PROJECT | TABLE |
| 3 SYS_C008341 | INDEX |
| 4 SYS_C008349 | INDEX |
| 5 SALES_STAFF | VIEW |
| 6 PROJECT_EMP_MEDIUM_TABLE | TABLE |
| 7 MANAGER_ID_GENDER_INDEX | INDEX |
| 8 PROJECT_EMP | TABLE |
| 9 PROJECT_MEDIUM_TABLE | TABLE |
| 10 EMP_MEDIUM_TABLE | TABLE |
| 11 MANAGER_ID_INDEX | INDEX |
| 12 DEPT | TABLE |
| 13 SALGRADE | TABLE |
| 14 PK_DEPT | INDEX |
| 15 EMP | TABLE |
| 16 PK_EMP | INDEX |
| 17 DEPENDENTS | TABLE |
| 18 PK_DEPENDENT | INDEX |
| 19 BONUS | TABLE |
| 20 UNIQUE_EMP_INFO | INDEX |
| 21 DEPENDENT_SEQ | SEQUENCE |

Exercice 4. Use SqlPlus

I use windows system and instead of Docker I use Oracle Express So Based on that when I installed Oracle Express by default it has the SQL plus and using the following syntax I can login to my existing users,



The screenshot shows a Windows Command Prompt window with the title bar "C:\WINDOWS\system32\cmd.exe - sqlplus". The command "sqlplus" is entered at the prompt. The output shows the SQL*Plus version (Release 21.0.0.0.0 - Production), copyright information (Copyright (c) 1982, 2021, Oracle. All rights reserved.), and connection details (Connected to: Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production). The user is prompted to enter a user-name and password, and the last successful login time is displayed.

```
C:\WINDOWS\system32\cmd.exe - sqlplus
C:\Users\Hacker>sqlplus
SQL*Plus: Release 21.0.0.0.0 - Production on Fri Mar 24 14:42:19 2023
Version 21.3.0.0.0

Copyright (c) 1982, 2021, Oracle. All rights reserved.

Enter user-name: DIP
Enter password:
Last Successful login time: Fri Mar 24 2023 14:19:51 +01:00

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL> -
```

2

Listing All employees using the sql plus it has the same syntax as Sql Developer no different just sql plus is CLI interface and the sql developer is GUI interface.

```

SQL> SELECT * FROM EMP;
      EMPNO ENAME      EFIRST     JOB          MGR HIREDATE      SAL
----- -----  -----  -----  -----  -----  -----
      COMM TEL          DEPTNO MOBILE_NUM
----- -----  -----  -----  -----  -----  -----
      7369 SMITH      JOHN      CLERK      7902 17-DEC-80      800
      0149545243
      7499 ALLEN      BOB       SALESMAN    7698 20-FEB-81     1600
      300 0149547243
      7521 WARD       PETER     SALESMAN    7698 22-FEB-81     1250
      500 0149545247
      7566 JONES      JOHN      MANAGER    7839 02-APR-81     2975
      0149545456
      7654 MARTIN     JOE       SALESMAN    7698 28-SEP-81     1250
      1400 0149545784
      7698 BLAKE      BOB       MANAGER    7839 01-MAY-81     2850
      0149545254
      7782 CLARK      JOHN      MANAGER    7839 09-JUN-81     2450
      0149545245
      7788 SCOTT      GUY       ANALYST    7566 09-DEC-82     3000
      0149545249
      7839 KING       GUY       PRESIDENT  3563 17-NOV-81     5000
      0149545241
      7844 TURNER     PETER     SALESMAN    7698 08-SEP-81     1500
      0 0149548243
      7876 ADAMS      JOSEPH    CLERK      7788 12-JAN-83     1100
      0149565243
      7900 JAMES      ALAN      CLERK      7698 03-DEC-81      950
      0149545564
      7902 FORD       MARIA     ANALYST    7566 03-DEC-81     3000
      0149785243
      7934 MILLER     ALICE     CLERK      7782 23-JAN-82     1300
      0199545243
14 rows selected.

```

Exercice 5. Transaction Part 1 – Beginner

First Client

```
C:\ C:\WINDOWS\system32\cmd.exe - sqlplus

C:\Users\Hacker>sqlplus

SQL*Plus: Release 21.0.0.0.0 - Production on Fri Mar 24 14:50:41 2023
Version 21.3.0.0.0

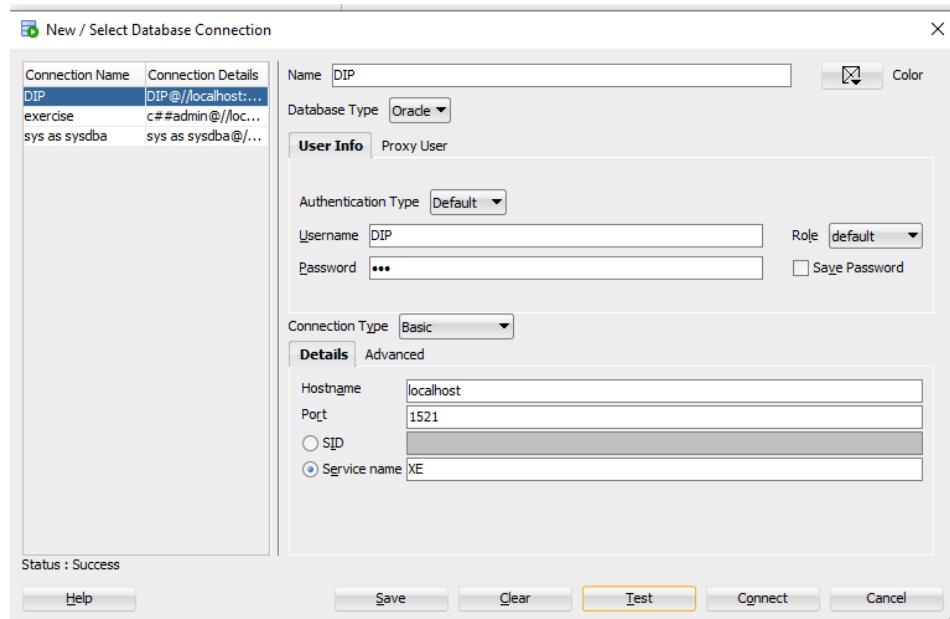
Copyright (c) 1982, 2021, Oracle. All rights reserved.

Enter user-name: DIP
Enter password:
Last Successful login time: Fri Mar 24 2023 14:42:23 +01:00

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL> s-
```

Second client



Answer 1

```
SQL>
SQL> set autocommit off;
SQL> -
```

2

```
SQL> UPDATE EMP SET SAL = 5000 WHERE EMPNO = 7369;
```

```
1 row updated.
```

```
SQL> -
```

3

```
C:\Windows\System32\cmd.exe - sqlplus
SQL> SELECT * FROM EMP;
-----+-----+-----+-----+-----+
EMPNO|ENAME |EFIRST|JOB   |MGR   |HIREDATE|SAL
-----+-----+-----+-----+-----+
    7369|SMITH |JOHN  |CLERK|  7902|17-DEC-80| 5000
          |0149545243|        |20 0645818841|      |
    7499|ALLEN |BOB   |SALESMAN|  7698|20-FEB-81| 1600
          |300 0149547243|        |30 0645818851|      |
    7521|WARD  |PETER |SALESMAN|  7698|22-FEB-81| 1250
          |500 0149545247|        |30 0645814841|      |
-----+-----+-----+-----+-----+
EMPNO|ENAME |EFIRST|JOB   |MGR   |HIREDATE|SAL
-----+-----+-----+-----+-----+
    7566|JONES |JOHN  |MANAGER|  7839|02-APR-81| 2975
          |0149545456|        |20 0635818841|      |
    7654|MARTIN|JOE   |SALESMAN|  7698|28-SEP-81| 1250
          |1400 0149545784|        |30 0645818811|      |
    7698|BLAKE  |BOB   |MANAGER|  7839|01-MAY-81| 2850
          |0149545254|        |30 0645812241|      |
-----+-----+-----+-----+-----+
EMPNO|ENAME |EFIRST|JOB   |MGR   |HIREDATE|SAL
-----+-----+-----+-----+-----+
    7782|CLARK  |JOHN  |MANAGER|  7839|09-JUN-81| 2450
          |0149545245|        |10 0645877841|      |
    7788|SCOTT  |GUY   |ANALYST|  7566|09-DEC-82| 3000
          |0149545249|        |20 0645988841|      |
    7839|KING   |GUY   |PRESIDENT| 3563|17-NOV-81| 5000
          |0149545241|        |10 0645528841|      |
-----+-----+-----+-----+-----+
EMPNO|ENAME |EFIRST|JOB   |MGR   |HIREDATE|SAL
-----+-----+-----+-----+-----+
    7844|TURNER |PETER |SALESMAN|  7698|08-SEP-81| 1500
          |0 0149548243|        |30 0619818841|      |
    7876|ADAMS  |JOSEPH|CLERK |  7788|12-JAN-83| 1100
          |0149565243|        |20 0645810241|      |
    7900|JAMES  |ALAN  |CLERK |  7698|03-DEC-81| 950
          |0149545564|        |30 0645818800|      |
-----+-----+-----+-----+-----+
EMPNO|ENAME |EFIRST|JOB   |MGR   |HIREDATE|SAL
-----+-----+-----+-----+-----+
    7982|FORD   |MARIA  |ANALYST|  7566|03-DEC-81| 3000
          |0149785243|        |20 0645658841|      |
    7934|MILLER |ALICE  |CLERK |  7782|23-JAN-82| 1300
          |0199545243|        |10 0645818541|      |
-----+-----+-----+-----+-----+
```

```
14 rows selected.
```

YES

| | EMPNO | ENAME | EFIRST | JOB | MGR | HIREDATE | SAL | COMM | TEL | DEPTNO | MOBILE_NUM |
|----|-------|--------|--------|-----------|------|-----------|------|--------|------------|--------|------------|
| 1 | 7369 | SMITH | JOHN | CLERK | 7902 | 17-DEC-80 | 800 | (null) | 0149545243 | 20 | 0645818841 |
| 2 | 7499 | ALLEN | BOB | SALESMAN | 7698 | 20-FEB-81 | 1600 | 300 | 0149547243 | 30 | 0645818851 |
| 3 | 7521 | WARD | PETER | SALESMAN | 7698 | 22-FEB-81 | 1250 | 500 | 0149545247 | 30 | 0645814841 |
| 4 | 7566 | JONES | JOHN | MANAGER | 7839 | 02-APR-81 | 2975 | (null) | 0149545456 | 20 | 0635818841 |
| 5 | 7654 | MARTIN | JOE | SALESMAN | 7698 | 28-SEP-81 | 1250 | 1400 | 0149545784 | 30 | 0645818811 |
| 6 | 7698 | BLAKE | BOB | MANAGER | 7839 | 01-MAY-81 | 2850 | (null) | 0149545254 | 30 | 0645812241 |
| 7 | 7782 | CLARK | JOHN | MANAGER | 7839 | 09-JUN-81 | 2450 | (null) | 0149545245 | 10 | 0645877841 |
| 8 | 7788 | SCOTT | GUY | ANALYST | 7566 | 09-DEC-82 | 3000 | (null) | 0149545249 | 20 | 0645988841 |
| 9 | 7839 | KING | GUY | PRESIDENT | 3563 | 17-NOV-81 | 5000 | (null) | 0149545241 | 10 | 0645528841 |
| 10 | 7844 | TURNER | PETER | SALESMAN | 7698 | 08-SEP-81 | 1500 | 0 | 0149548243 | 30 | 0619818841 |
| 11 | 7876 | ADAMS | JOSEPH | CLERK | 7788 | 12-JAN-83 | 1100 | (null) | 0149565243 | 20 | 0645810241 |
| 12 | 7900 | JAMES | ALAN | CLERK | 7698 | 03-DEC-81 | 950 | (null) | 0149545564 | 30 | 0645818800 |
| 13 | 7902 | FORD | MARIA | ANALYST | 7566 | 03-DEC-81 | 3000 | (null) | 0149785243 | 20 | 0645658841 |
| 14 | 7934 | MILLER | ALICE | CLERK | 7782 | 23-JAN-82 | 1300 | (null) | 0199545243 | 10 | 0645818541 |

No In the second client we can't see the updated salary because we turned off the auto commit so we need to commit it manually.

```
SQL> commit;

Commit complete.

SQL> -
```

After successful commit we can see the updated salary

The screenshot shows the Oracle SQL Developer interface. In the top navigation bar, tabs for 'DIP2.sql', 'exercise.sql', 'Welcome Page', and 'DIP' are visible. Below the tabs, there are icons for running queries, saving, and navigating. The main area has two tabs: 'Worksheet' and 'Query Builder'. The 'Worksheet' tab is active, displaying the SQL command 'SELECT * FROM EMP;'. Below the command, the results are shown in a table with 14 rows. The columns are labeled: EMPNO, ENAME, EFIRST, JOB, MGR, HIREDATE, SAL, COMM, TEL, DEPTNO, and MOBILE_NUM. The data includes various employee details such as John Smith (EMPNO 7369), Bob Allen (EMPNO 7499), and many others.

| | EMPNO | ENAME | EFIRST | JOB | MGR | HIREDATE | SAL | COMM | TEL | DEPTNO | MOBILE_NUM |
|----|-------|--------|--------|-----------|------|-----------|------|--------|------------|--------|------------|
| 1 | 7369 | SMITH | JOHN | CLERK | 7902 | 17-DEC-80 | 5000 | (null) | 0149545243 | 20 | 0645818841 |
| 2 | 7499 | ALLEN | BOB | SALESMAN | 7698 | 20-FEB-81 | 1600 | 300 | 0149547243 | 30 | 0645818851 |
| 3 | 7521 | WARD | PETER | SALESMAN | 7698 | 22-FEB-81 | 1250 | 500 | 0149545247 | 30 | 0645814841 |
| 4 | 7566 | JONES | JOHN | MANAGER | 7839 | 02-APR-81 | 2975 | (null) | 0149545456 | 20 | 0635818841 |
| 5 | 7654 | MARTIN | JOE | SALESMAN | 7698 | 28-SEP-81 | 1250 | 1400 | 0149545784 | 30 | 0645818811 |
| 6 | 7698 | BLAKE | BOB | MANAGER | 7839 | 01-MAY-81 | 2850 | (null) | 0149545254 | 30 | 0645812241 |
| 7 | 7782 | CLARK | JOHN | MANAGER | 7839 | 09-JUN-81 | 2450 | (null) | 0149545245 | 10 | 0645877841 |
| 8 | 7788 | SCOTT | GUY | ANALYST | 7566 | 09-DEC-81 | 3000 | (null) | 0149545249 | 20 | 0645988841 |
| 9 | 7839 | KING | GUY | PRESIDENT | 3563 | 17-NOV-81 | 5000 | (null) | 0149545241 | 10 | 0645528841 |
| 10 | 7844 | TURNER | PETER | SALESMAN | 7698 | 08-SEP-81 | 1500 | 0 | 0149548243 | 30 | 0619818841 |
| 11 | 7876 | ADAMS | JOSEPH | CLERK | 7788 | 12-JAN-83 | 1100 | (null) | 0149565243 | 20 | 0645810241 |
| 12 | 7900 | JAMES | ALAN | CLERK | 7698 | 03-DEC-81 | 950 | (null) | 0149545564 | 30 | 0645818800 |
| 13 | 7902 | FORD | MARIA | ANALYST | 7566 | 03-DEC-81 | 3000 | (null) | 0149785243 | 20 | 0645658841 |
| 14 | 7934 | MILLER | ALICE | CLERK | 7782 | 23-JAN-82 | 1300 | (null) | 0199545243 | 10 | 0645818541 |

Exercice 6. Transaction Part 2 && GRANT rights – Advanced

0

The screenshot shows the Oracle SQL Developer interface. In the top navigation bar, tabs for 'DIP2.sql', 'exercise.sql', 'Welcome Page', and 'DIP' are visible. Below the tabs, there are icons for running queries, saving, and navigating. The main area has two tabs: 'Worksheet' and 'Query Builder'. The 'Worksheet' tab is active, displaying the SQL command 'CREATE USER user2 IDENTIFIED BY mypass;'. Below the command, the results are shown in a table with 14 rows. The columns are labeled: EMPNO, ENAME, EFIRST, JOB, MGR, HIREDATE, SAL, COMM, TEL, DEPTNO, and MOBILE_NUM. The data includes various employee details such as John Smith (EMPNO 7369), Bob Allen (EMPNO 7499), and many others.

| | EMPNO | ENAME | EFIRST | JOB | MGR | HIREDATE | SAL | COMM | TEL | DEPTNO | MOBILE_NUM |
|----|-------|--------|--------|-----------|------|-----------|------|--------|------------|--------|------------|
| 1 | 7369 | SMITH | JOHN | CLERK | 7902 | 17-DEC-80 | 5000 | (null) | 0149545243 | 20 | 0645818841 |
| 2 | 7499 | ALLEN | BOB | SALESMAN | 7698 | 20-FEB-81 | 1600 | 300 | 0149547243 | 30 | 0645818851 |
| 3 | 7521 | WARD | PETER | SALESMAN | 7698 | 22-FEB-81 | 1250 | 500 | 0149545247 | 30 | 0645814841 |
| 4 | 7566 | JONES | JOHN | MANAGER | 7839 | 02-APR-81 | 2975 | (null) | 0149545456 | 20 | 0635818841 |
| 5 | 7654 | MARTIN | JOE | SALESMAN | 7698 | 28-SEP-81 | 1250 | 1400 | 0149545784 | 30 | 0645818811 |
| 6 | 7698 | BLAKE | BOB | MANAGER | 7839 | 01-MAY-81 | 2850 | (null) | 0149545254 | 30 | 0645812241 |
| 7 | 7782 | CLARK | JOHN | MANAGER | 7839 | 09-JUN-81 | 2450 | (null) | 0149545245 | 10 | 0645877841 |
| 8 | 7788 | SCOTT | GUY | ANALYST | 7566 | 09-DEC-81 | 3000 | (null) | 0149545249 | 20 | 0645988841 |
| 9 | 7839 | KING | GUY | PRESIDENT | 3563 | 17-NOV-81 | 5000 | (null) | 0149545241 | 10 | 0645528841 |
| 10 | 7844 | TURNER | PETER | SALESMAN | 7698 | 08-SEP-81 | 1500 | 0 | 0149548243 | 30 | 0619818841 |
| 11 | 7876 | ADAMS | JOSEPH | CLERK | 7788 | 12-JAN-83 | 1100 | (null) | 0149565243 | 20 | 0645810241 |
| 12 | 7900 | JAMES | ALAN | CLERK | 7698 | 03-DEC-81 | 950 | (null) | 0149545564 | 30 | 0645818800 |
| 13 | 7902 | FORD | MARIA | ANALYST | 7566 | 03-DEC-81 | 3000 | (null) | 0149785243 | 20 | 0645658841 |
| 14 | 7934 | MILLER | ALICE | CLERK | 7782 | 23-JAN-82 | 1300 | (null) | 0199545243 | 10 | 0645818541 |

1

DIP is user one

The screenshot shows the Oracle SQL Developer interface. In the top navigation bar, there are tabs for 'DIP2.sql', 'exercise.sql', 'Welcome Page', 'DIP', and 'sys as sysdba'. The 'Worksheet' tab is selected, and the query builder contains the SQL statement: 'SELECT * FROM DIP.EMP;'. Below the query, the results are displayed in a grid format:

| | EMPNO | ENAME | EFIRST | JOB | MGR | HIREDATE | SAL | COMM | TEL | DEPTNO | MOBILE_NUM |
|----|-------|--------|--------|-----------|------|-----------|------|--------|------------|--------|------------|
| 1 | 7369 | SMITH | JOHN | CLERK | 7902 | 17-DEC-80 | 5000 | (null) | 0149545243 | 20 | 0645818841 |
| 2 | 7499 | ALLEN | BOB | SALESMAN | 7698 | 20-FEB-81 | 1600 | 300 | 0149547243 | 30 | 0645818851 |
| 3 | 7521 | WARD | PETER | SALESMAN | 7698 | 22-FEB-81 | 1250 | 500 | 0149545247 | 30 | 0645814841 |
| 4 | 7566 | JONES | JOHN | MANAGER | 7839 | 02-APR-81 | 2975 | (null) | 0149545456 | 20 | 0635818841 |
| 5 | 7654 | MARTIN | JOE | SALESMAN | 7698 | 28-SEP-81 | 1250 | 1400 | 0149545784 | 30 | 0645818811 |
| 6 | 7698 | BLAKE | BOB | MANAGER | 7839 | 01-MAY-81 | 2850 | (null) | 0149545254 | 30 | 0645812241 |
| 7 | 7782 | CLARK | JOHN | MANAGER | 7839 | 09-JUN-81 | 2450 | (null) | 0149545245 | 10 | 0645877841 |
| 8 | 7788 | SCOTT | GUY | ANALYST | 7566 | 09-DEC-82 | 3000 | (null) | 0149545249 | 20 | 0645988841 |
| 9 | 7839 | KING | GUY | PRESIDENT | 3563 | 17-NOV-81 | 5000 | (null) | 0149545241 | 10 | 0645528841 |
| 10 | 7844 | TURNER | PETER | SALESMAN | 7698 | 08-SEP-81 | 1500 | 001 | 0149548243 | 30 | 0619818841 |
| 11 | 7876 | ADAMS | JOSEPH | CLERK | 7788 | 12-JAN-83 | 1100 | (null) | 0149565243 | 20 | 0645810241 |
| 12 | 7900 | JAMES | ALAN | CLERK | 7698 | 03-DEC-81 | 950 | (null) | 0149545564 | 30 | 0645818800 |
| 13 | 7902 | FORD | MARIA | ANALYST | 7566 | 03-DEC-81 | 3000 | (null) | 0149785243 | 20 | 0645658841 |
| 14 | 7934 | MILLER | ALICE | CLERK | 7782 | 23-JAN-82 | 1300 | (null) | 0199545243 | 10 | 0645818541 |

3

The screenshot shows the Oracle SQL Developer interface. In the top navigation bar, there are tabs for 'DIP2.sql', 'exercise.sql', 'Welcome Page', 'DIP', and 'sys as sysdba'. The 'Worksheet' tab is selected, and the query builder contains the following GRANT statements:

```
GRANT SELECT ON DIP.EMP TO user2;
GRANT SELECT ON DIP.DEPT TO user2;
```

In the bottom right corner of the worksheet area, it says 'Task completed in 0.106 seconds'.

The 'Script Output' tab is also visible, showing the output of the grants:

```
Grant succeeded.

Grant succeeded.
```

4

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for DIP2.sql, exercise.sql, Welcome Page, DIP, and sys as sysdba. The main area is titled 'Worksheet' and contains the SQL command: `UPDATE DIP.EMP SET COMM = 700 WHERE EMPNO = '7499';`. Below this is the 'Script Output' window which displays the message: `1 row updated.`

5

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for DIP2.sql, exercise.sql, Welcome Page, DIP, and sys as sysdba. The main area is titled 'Worksheet' and contains the SQL command: `SELECT * FROM DIP.EMP WHERE COMM = 700;`. Below this is the 'Query Result' window which displays the following data:

| | EMPNO | ENAME | EFIRST | JOB | MGR | HIREDATE | SAL | COMM | TEL | DEPTNO | MOBILE_NUM |
|---|-------|-------|--------|----------|------|-----------|------|------|------------|--------|------------|
| 1 | 7499 | ALLEN | BOB | SALESMAN | 7698 | 20-FEB-81 | 1600 | 700 | 0149547243 | 30 | 0645818851 |

After changing the data we commit the database in order to the U2 be able to see also the changes

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for DIP2.sql, exercise.sql, Welcome Page, DIP, and sys as sysdba. The main area is titled 'Worksheet' and contains the SQL command: `COMMIT;`. Below this is the 'Script Output' window which displays the message: `Commit complete.`

6

A

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for DIP2.sql, exercise.sql, Welcome Page, DIP, and sys as sysdba. The main area is a Worksheet tab showing the following SQL code:

```
UPDATE DIP.EMP SET COMM = 750 WHERE EMPNO = '7369';
```

Below the worksheet is a Script Output window showing the result:

```
1 row updated.
```

B

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for DIP2.sql, exercise.sql, Welcome Page, DIP, and sys as sysdba. The main area is a Worksheet tab showing the following SQL code:

```
UPDATE DIP.EMP SET COMM = 725 WHERE EMPNO = '7566';
```

Below the worksheet is a Script Output window showing the result:

```
1 row updated.
```

C

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for DIP2.sql, exercise.sql, Welcome Page, DIP, and sys as sysdba. The main area is a Worksheet tab showing the following SQL code:

```
UPDATE DIP.EMP SET COMM = 770 WHERE EMPNO = '7566';
```

Below the worksheet is a Script Output window showing the result:

```
1 row updated.
```

D

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for 'DIP2.sql', 'exercise.sql', 'Welcome Page', 'DIP', and 'sys as sysdba'. The main area is titled 'Worksheet' and contains the SQL command: `UPDATE DIP.EMP SET COMM = 780 WHERE EMPNO = '7369';`. Below the worksheet is a 'Script Output' window showing the result: `1 row updated.`

7

The screenshot shows the Oracle SQL Developer interface. The top menu bar has tabs for 'DIP2.sql', 'exercise.sql', 'Welcome Page', 'DIP', and 'sys as sysdba'. The main area is titled 'Worksheet' and contains two SQL commands: `REVOKE SELECT ON DIP.EMP FROM user2;` and `REVOKE SELECT ON DIP.DEPT FROM user2;`. Below the worksheet is a 'Script Output' window showing the results: `Revoke succeeded.` and `Revoke succeeded.`

Privilege has been removed

The screenshot shows the Oracle SQL Developer interface. The top navigation bar has tabs for 'DIP2.sql', 'exercise.sql', 'Welcome Page', 'DIP', and 'sys as sysdba'. The main area has two tabs: 'Worksheet' and 'Query Builder'. The 'Worksheet' tab contains the following SQL query:

```
SELECT * FROM USER_TAB_PRIVS WHERE GRANTEE = 'user2';
```

The 'Query Result' tab shows the results of the query. The results table has the following columns:

| GRANTEE | OWNER | TABLE_N... | GRANTOR | PRIVILEGE | GRANTABLE | HIERARCHY | COMMON | TYPE | INHERITED |
|---------|-------|------------|---------|-----------|-----------|-----------|--------|------|-----------|
| | | | | | | | | | |

Below the table, a status message reads: 'All Rows Fetched: 0 in 1.365 seconds'.