

ADS Experiment 4

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Objective

The objective of this experiment is to explore and perform various operations on tablespaces, users, and quotas in an Oracle database.

Implementation

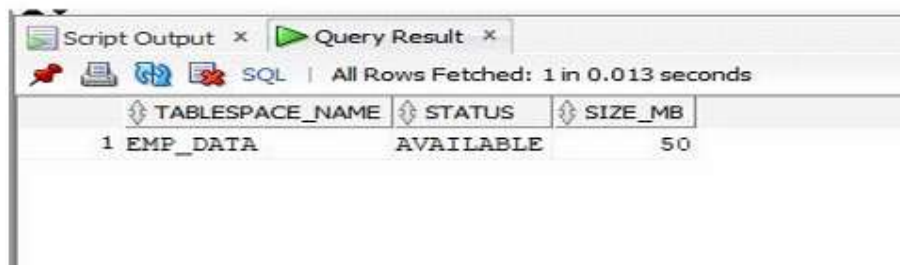
Q1: Create and Query a Tablespace

a) Create a tablespace `emp_data`:

```
CREATE TABLESPACE emp_data DATAFILE 'C:\ads\exp4.dbf' SIZE 20M;
```

b) Query the tablespace status and size:

```
SELECT tablespace_name, status, bytes / 1024 / 1024 AS size_mb  
FROM dba_data_files  
WHERE tablespace_name = 'EMP_DATA';
```



The screenshot shows a SQL Developer window with a 'Query Result' tab. The query has been executed successfully, and the results are displayed in a table. The table has three columns: TABLESPACE_NAME, STATUS, and SIZE_MB. There is one row of data showing 'EMP_DATA' with a status of 'AVAILABLE' and a size of 50 MB. The status bar at the top indicates 'All Rows Fetched: 1 in 0.013 seconds'.

	TABLESPACE_NAME	STATUS	SIZE_MB
1	EMP_DATA	AVAILABLE	50

Q2: Resize the Tablespace

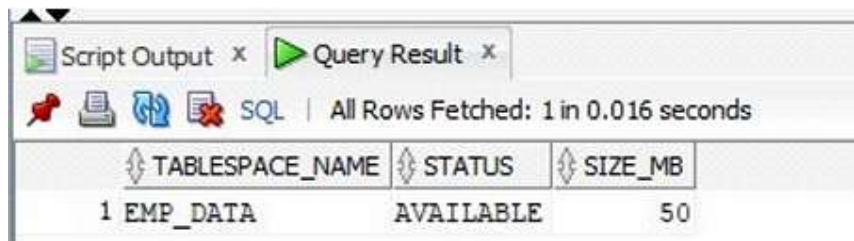
a) Resize the datafile to 50M:

```
ALTER DATABASE DATAFILE 'C:\ads\exp4.dbf' RESIZE 50M;
```

b) Query the updated size:

```
SELECT tablespace_name, status, bytes / 1024 / 1024 AS size_mb  
FROM dba_data_files
```

```
WHERE tablespace_name = 'EMP_DATA';
```



The screenshot shows a SQL Developer window with a 'Query Result' tab. It displays a single row of data for the 'EMP_DATA' tablespace. The status is 'AVAILABLE' and the size is 50 MB. The window also shows 'Script Output' and 'Query Result' tabs, and a status bar indicating 'All Rows Fetched: 1 in 0.016 seconds'.

	TABLESPACE_NAME	STATUS	SIZE_MB
1	EMP_DATA	AVAILABLE	50

Q3: Create a Temporary Tablespace

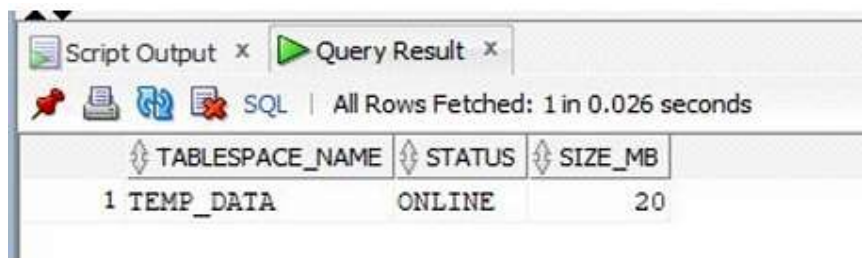
a) Create a temporary tablespace `temp_data`:

```
CREATE TEMPORARY TABLESPACE temp_data TEMPFILE  
'C:\ads\temp_exp4.dbf' SIZE 20M;
```

b) Set it as the default temporary tablespace and query:

```
ALTER DATABASE DEFAULT TEMPORARY TABLESPACE temp_data;
```

```
SELECT tablespace_name, status, bytes / 1024 / 1024 AS size_mb  
FROM dba_temp_files  
WHERE tablespace_name = 'TEMP_DATA';
```



The screenshot shows a SQL Developer window with a 'Query Result' tab. It displays a single row of data for the 'TEMP_DATA' tablespace. The status is 'ONLINE' and the size is 20 MB. The window also shows 'Script Output' and 'Query Result' tabs, and a status bar indicating 'All Rows Fetched: 1 in 0.026 seconds'.

	TABLESPACE_NAME	STATUS	SIZE_MB
1	TEMP_DATA	ONLINE	20

Q4: Create an Undo Tablespace

a) Create an undo tablespace `undo_data`:

```
CREATE UNDO TABLESPACE undo_data DATAFILE 'C:\ads\undo_exp4.dbf'  
SIZE 20M;
```

b) Query the undo tablespace status:

```
SELECT tablespace_name, status, bytes / 1024 / 1024 AS size_mb  
FROM dba_data_files  
WHERE tablespace_name = 'UNDO_DATA';
```

Script Output x Query Result x		
SQL All Rows Fetched: 1 in 0.009 seconds		
TABLESPACE_NAME	STATUS	SIZE_MB
1 UNDO_DATA	AVAILABLE	20

Q5: Create a User and Assign Quota

a) Enable Oracle script:

```
ALTER SESSION SET "_ORACLE_SCRIPT" = TRUE;
```

b) Create user HR_USER with a quota on emp_data:

```
CREATE USER HR_USER IDENTIFIED BY HR_USER
DEFAULT TABLESPACE EMP_DATA
QUOTA 10M ON EMP_DATA;
```

c) Grant privileges:

```
GRANT CREATE SESSION, CREATE TABLE TO HR_USER;
```

d) Verify user quotas:

```
SELECT USERNAME, TABLESPACE_NAME, MAX_BYTES, BYTES AS USED_DATA
FROM DBA_TS_QUOTAS
WHERE USERNAME = 'HR_USER';
```

	USERNAME	TABLESPACE_NAME	MAX_BYTES	USED_DATA
1	HR_USER	EMP_DATA	10485760	0

Q6: Create a Table and Insert Data

a) Connect to the user:

```
CONNECT HR_USER/HR_USER;
```

b) Create a table **employee** in the **emp_data** tablespace:

```
CREATE TABLE employee (  
    emp_id INT,  
    emp_name VARCHAR(20),  
    emp_address VARCHAR(20)  
) TABLESPACE EMP_DATA;
```

c) Insert data into the table:

```
INSERT INTO employee VALUES (1, 'Ram', 'Kolhapur');  
INSERT INTO employee VALUES (2, 'Sham', 'Kolhapur');  
INSERT INTO employee VALUES (3, 'Parth', 'Kolhapur');  
INSERT INTO employee VALUES (4, 'Kedar', 'Sangli');  
INSERT INTO employee VALUES (5, 'Akash', 'Satara');
```

d) Query the user quota usage and free space:

```
SELECT USERNAME, TABLESPACE_NAME, MAX_BYTES, BYTES AS USED_DATA  
FROM DBA_TS_QUOTAS  
WHERE USERNAME = 'HR_USER';
```

	USERNAME	TABLESPACE_NAME	MAX_BYTES	USED_DATA
1	HR_USER	EMP_DATA	10485760	0

```
SELECT TABLESPACE_NAME, SUM(bytes) / 1024 / 1024 AS free_space_mb  
FROM dba_free_space  
WHERE TABLESPACE_NAME = 'EMP_DATA'  
GROUP BY TABLESPACE_NAME;
```


	TABLESPACE_NAME	FREE_SPACE_MB
1	EMP_DATA	48.9375

Q7: Manage Tablespace Availability and User Quotas

a) Take the tablespace offline:

```
ALTER TABLESPACE emp_data OFFLINE;
```

```
SELECT tablespace_name, status  
FROM dba_tablespaces  
WHERE tablespace_name = 'EMP_DATA';
```



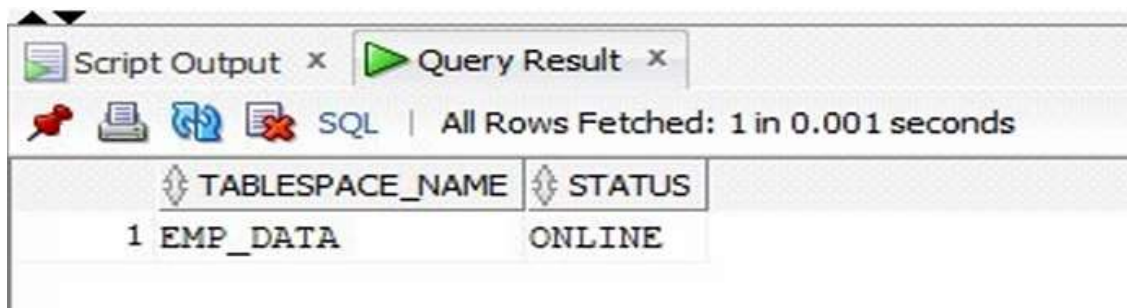
The screenshot shows the 'Query Result' window in SQL Developer. The title bar includes 'Script Output' and 'Query Result'. Below the title bar, there are icons for a pin, printer, refresh, and a red X, followed by 'SQL' and 'All Rows Fetched: 1 in 0.017 seconds'. The query result is displayed in a table with two columns: 'TABLESPACE_NAME' and 'STATUS'. The first row shows '1 EMP_DATA' and 'OFFLINE'.

	TABLESPACE_NAME	STATUS
1	EMP_DATA	OFFLINE

b) Bring the tablespace back online:

```
ALTER TABLESPACE emp_data ONLINE;
```

```
SELECT tablespace_name, status  
FROM dba_tablespaces  
WHERE tablespace_name = 'EMP_DATA';
```



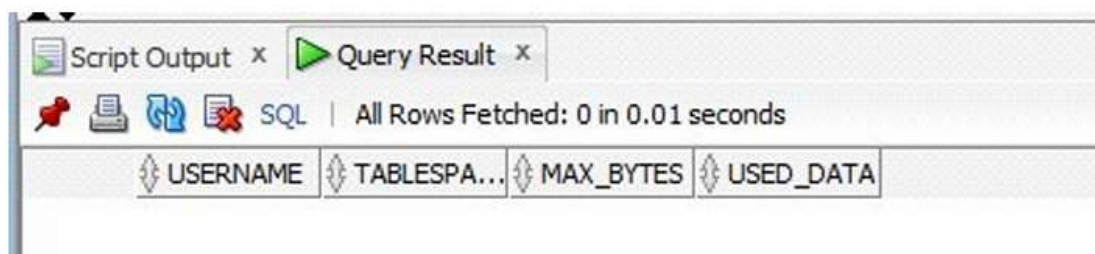
The screenshot shows the 'Query Result' window in SQL Developer. The title bar includes 'Script Output' and 'Query Result'. Below the title bar, there are icons for a pin, printer, refresh, and a red X, followed by 'SQL' and 'All Rows Fetched: 1 in 0.001 seconds'. The query result is displayed in a table with two columns: 'TABLESPACE_NAME' and 'STATUS'. The first row shows '1 EMP_DATA' and 'ONLINE'.

	TABLESPACE_NAME	STATUS
1	EMP_DATA	ONLINE

c) Remove the quota for HR_USER and verify:

```
ALTER USER hr_user QUOTA 0 ON emp_data;
```

```
SELECT USERNAME, TABLESPACE_NAME, MAX_BYTES, BYTES AS USED_DATA  
FROM DBA_TS_QUOTAS  
WHERE USERNAME = 'HR_USER';
```



The screenshot shows the 'Query Result' window in SQL Developer. The title bar includes 'Script Output' and 'Query Result'. Below the title bar, there are icons for a pin, printer, refresh, and a red X, followed by 'SQL' and 'All Rows Fetched: 0 in 0.01 seconds'. The query result is displayed in a table with four columns: 'USERNAME', 'TABLESPACE_NAME', 'MAX_BYTES', and 'USED_DATA'. No data is shown as all rows were fetched as 0.

USERNAME	TABLESPACE_NAME	MAX_BYTES	USED_DATA
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