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

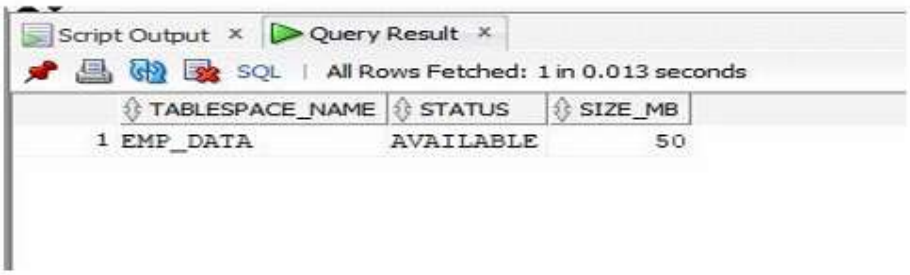
Q1: Create and Query a Tablespace

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';
```



Q2: Resize the Tablespace

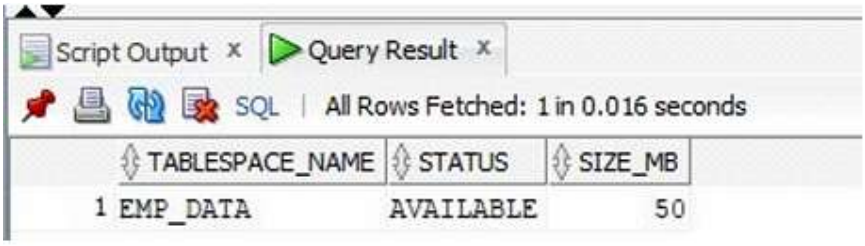
a) Resize the datafile to 50M:

```
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';
```



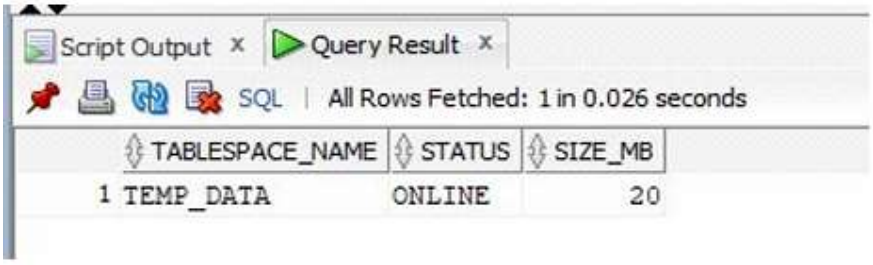
Q3: Create a Temporary Tablespace

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';
```



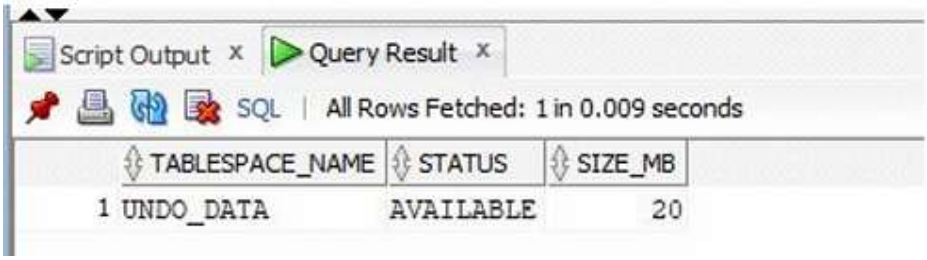
Q4: Create an Undo Tablespace

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';
```



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';
```

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

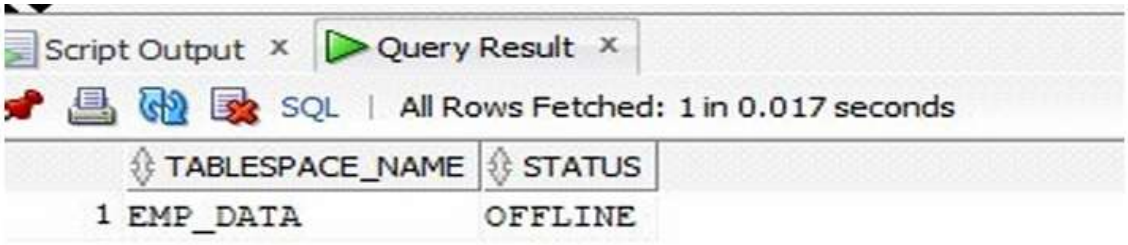
```
SELECT TABLESPACE_NAME, SUM(bytes) / 1024 / 1024 AS free_space_mb
FROM dba_free_space
WHERE TABLESPACE_NAME = 'EMP_DATA'
GROUP BY TABLESPACE_NAME;
```

	TABLESPACE_NAME	FREE_SPACE_MB
1	EMP_DATA	48.9375

Q7: Manage Tablespace Availability and User Quotas

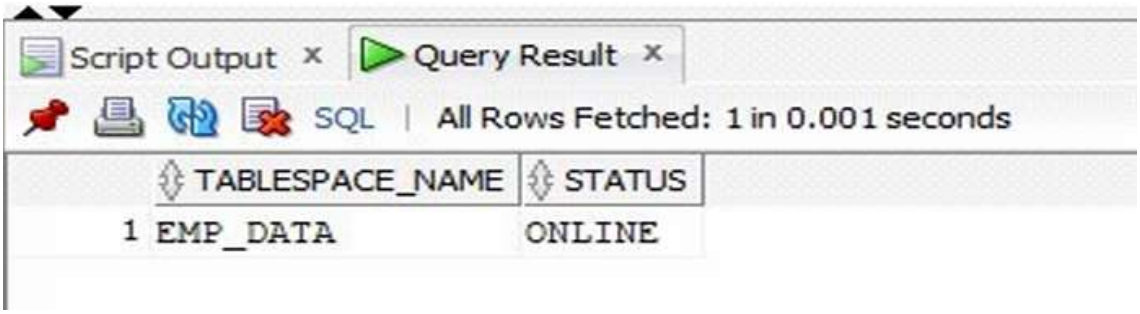
a) Take the tablespace offline:

```
ALTER TABLESPACE emp_data OFFLINE;

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



b) Bring the tablespace back online:

```
ALTER TABLESPACE emp_data ONLINE;

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



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';
```