

Experiment 04

Implementation of Tablespace in Oracle

1. Creating and Managing Tablespaces

- a. Create a new tablespace named emp_data with an initial size of 20MB.
- b. Check the size and status of the tablespace using an SQL query.

2. Resize the Tablespace

- a. Resize the emp_data tablespace to 50MB
- b. Verify the size change

3. Temporary Tablespace

- a. Create a temporary tablespace and assign it as the default.
- b. Check the size and status of the tablespace using an SQL query.

4. Undo Tablespace

- a. Create an undo tablespace.
- b. Check the size and status of the tablespace using an SQL query.

5. Create user and assign Tablespace Quotas

- a. Create user hr_user on the emp_data tablespace and Assign a 10MB quota to HR_USER on the emp_data tablespace
- b. grant create session, create table to hr_user
- c. check max_bytes and used_data for hr_user

6. Create Table in tablespace

- a. Connect with hr_user
- b. Create table employee in table space with attributes emp_id, emp_name, emp_address
- c. Insert few records in employee table
- d. check max_bytes and free_space for hr_user

7. Updates to tablespace

- a. Take the emp_data tablespace offline and verify that the tablespace is offline
- b. Bring the emp_data tablespace back online and verify the tablespace status
- c. Remove the quota for HR_USER on the emp_data tablespace and verify the quota removal

Answers:

1. a.

```
CREATE TABLESPACE emp_data
DATAFILE 'emp_data.dbf' SIZE 20M
AUTOEXTEND ON NEXT 10M MAXSIZE UNLIMITED;
```

```
SQL> SELECT tablespace_name, contents FROM dba_tablespaces;
```

TABLESPACE_NAME	CONTENTS
SYSTEM	PERMANENT
SYSAUX	PERMANENT
UNDOTBS1	UNDO
TEMP	TEMPORARY
USERS	PERMANENT

1. b.

```
SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS
total_size_mb, status
FROM dba_data_files
WHERE tablespace_name = 'EMP_DATA'
GROUP BY tablespace_name, status;
```

```
SQL> CREATE TEMPORARY TABLESPACE temp_ts TEMPFILE 'c:\ADS\temp_ts.dbf' SIZE 20M;
```

Tablespace created.

```
SQL> SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS total_size_mb, status
2 FROM dba_temp_files
3 WHERE tablespace_name = 'TEMP_TS'
4 GROUP BY tablespace_name, status;
```

TABLESPACE_NAME	TOTAL_SIZE_MB	STATUS
TEMP_TS	20	ONLINE

```
SQL> |
```

2. a.

```
ALTER DATABASE DATAFILE 'emp_data.dbf' RESIZE 50M;
```

```
SQL> ALTER DATABASE DATAFILE 'c:\ADS\emp_data01.dbf' RESIZE 50M;
```

Database altered.

```
SQL> |
```

2. b.

```
SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS
total_size_mb
FROM dba_data_files
WHERE tablespace_name = 'EMP_DATA'
GROUP BY tablespace_name;
```

```
SQL> ALTER DATABASE DATAFILE 'c:\ADS\emp_data01.dbf' RESIZE 50M;
```

```
Database altered.
```

```
SQL> SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS total_size_mb, status
2 FROM dba_data_files
3 WHERE tablespace_name = 'EMP_DATA'
4 GROUP BY tablespace_name, status;
```

TABLESPACE_NAME	TOTAL_SIZE_MB	STATUS
EMP_DATA	50	AVAILABLE

```
SQL> |
```

3. a.

```
CREATE TEMPORARY TABLESPACE temp_ts
TEMPFILE 'temp_ts.dbf' SIZE 10M
AUTOEXTEND ON NEXT 5M MAXSIZE UNLIMITED;
ALTER DATABASE DEFAULT TEMPORARY TABLESPACE temp_ts;
```

```
SQL> CREATE TEMPORARY TABLESPACE temp_ts TEMPFILE 'c:\ADS\temp_ts.dbf' SIZE 20M;
```

```
Tablespace created.
```

3. b.

```
SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS
total_size_mb, status
FROM dba_temp_files
WHERE tablespace_name = 'TEMP_TS'
GROUP BY tablespace_name, status;
```

```
SQL> SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS total_size_mb, status
2 FROM dba_temp_files
3 WHERE tablespace_name = 'TEMP_TS'
4 GROUP BY tablespace_name, status;
```

TABLESPACE_NAME	TOTAL_SIZE_MB	STATUS
TEMP_TS	20	ONLINE

4. a.

```
CREATE UNDO TABLESPACE undo_ts
DATAFILE 'undo_ts.dbf' SIZE 20M
AUTOEXTEND ON NEXT 10M MAXSIZE UNLIMITED;
```

```
SQL> CREATE UNDO TABLESPACE undo_ts DATAFILE 'c:\ADS\undo_ts.dbf' SIZE 50M;
```

```
Tablespace created.
```

4. b.

```
SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS
total_size_mb, status
FROM dba_undo_extents
WHERE tablespace_name = 'UNDO_TS'
GROUP BY tablespace_name, status;
```

```
SQL> SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS total_size_mb, status
2 FROM dba_undo_extents
3 WHERE tablespace_name = 'UNDO_TS'
4 GROUP BY tablespace_name, status;
```

TABLESP	TOTAL_SIZE_MB	STATUS
UNDO_TS	1.5	UNEXPIRED
UNDO_TS	1.5	EXPIRED

5. a.

```
CREATE USER hr_user IDENTIFIED BY password DEFAULT TABLESPACE
emp_data QUOTA 10M ON emp_data;
```

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

```
Session altered.
```

```
SQL> CREATE USER hr_user IDENTIFIED BY password DEFAULT TABLESPACE emp_data QUOTA 10M ON emp_data;
```

```
User created.
```

```
SQL>
```

5. b.

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

```
SQL> GRANT CREATE SESSION, CREATE TABLE TO hr_user;
```

```
Grant succeeded.
```

```
SQL> |
```

5. c.

```
SELECT max_bytes, bytes FROM dba_ts_quotas WHERE username = 'HR_USER';
```

```
SQL> SELECT max_bytes, bytes FROM dba_ts_quotas WHERE username = 'HR_USER';
```

MAX_BYTES	BYTES
10485760	0

```
SQL> |
```

6. a.

```
CONNECT hr_user/password;
```

```
SQL> CONNECT hr_user/password;
Connected.
SQL> |
```

6. b.

```
CREATE TABLE employee (
    emp_id NUMBER PRIMARY KEY,
    emp_name VARCHAR2(50),
    emp_address VARCHAR2(100)
) TABLESPACE emp_data;
```

```
SQL> CREATE TABLE employee (
2     emp_id NUMBER PRIMARY KEY,
3     emp_name VARCHAR2(50),
4     emp_address VARCHAR2(100)
5 ) TABLESPACE emp_data;

Table created.

SQL> |
```

6. c.

```
INSERT INTO employee (emp_id, emp_name, emp_address) VALUES (1,
'Zyed Mulla', 'Kolhapur');
INSERT INTO employee (emp_id, emp_name, emp_address) VALUES (2,
'Pankaj Adlinge', 'Sangola');
```

```
SQL> INSERT INTO employee (emp_id, emp_name, emp_address) VALUES (1, 'Zyed Mulla', 'Kolhapur');
1 row created.

SQL> INSERT INTO employee (emp_id, emp_name, emp_address) VALUES (2, 'Pankaj Adlinge', 'Sangola');
1 row created.
```

6. d.

```
SELECT max_bytes, bytes FROM dba_ts_quotas WHERE username = 'HR_USER';
```

```
SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS  
total_free_space_mb  
FROM dba_free_space  
WHERE tablespace_name = 'EMP_DATA'  
GROUP BY tablespace_name;
```

```
SQL> SELECT max_bytes, bytes FROM dba_ts_quotas WHERE username = 'HR_USER';  
  
no rows selected  
  
SQL>  
SQL> SELECT tablespace_name, ROUND(SUM(bytes) / 1024 / 1024, 2) AS total_free_space_mb  
2 FROM dba_free_space  
3 WHERE tablespace_name = 'EMP_DATA'  
4 GROUP BY tablespace_name;  
  
TABLESPACE_NAME          TOTAL_FREE_SPACE_MB  
-----  
EMP_DATA                  48.88  
  
SQL> |
```

7. a.

```
ALTER TABLESPACE emp_data OFFLINE;
```

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

```
SQL> ALTER TABLESPACE emp_data OFFLINE;  
  
Tablespace altered.  
  
SQL> SELECT tablespace_name, status FROM dba_tablespaces WHERE tablespace_name = 'EMP_DATA';  
  
TABLESPACE_NAME          STATUS  
-----  
EMP_DATA                  OFFLINE
```

7. b.

```
ALTER TABLESPACE emp_data ONLINE;
```

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

```
SQL> ALTER TABLESPACE emp_data ONLINE;  
  
Tablespace altered.  
  
SQL>  
SQL> SELECT tablespace_name, status FROM dba_tablespaces WHERE tablespace_name = 'EMP_DATA';  
  
TABLESPACE_NAME          STATUS  
-----  
EMP_DATA                 ONLINE
```

7. c.

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

```
SELECT tablespace_name FROM dba_ts_quotas WHERE username =  
'HR_USER';
```

```
SQL> SELECT tablespace_name FROM dba_ts_quotas WHERE username = 'HR_USER';  
  
TABLESPACE_NAME  
-----  
EMP_DATA  
  
SQL> ALTER USER hr_user QUOTA 0 ON emp_data;  
  
User altered.  
  
SQL> SELECT tablespace_name FROM dba_ts_quotas WHERE username = 'HR_USER';  
  
no rows selected
```