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Database Management System II LAB 2

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SQL Commands:

In task 1,

```
create tablespace tbs1
    datafile 'C:\SWE_STUDIES\Fourth_Semester\DBMS II LAB\lab2\tbs1.dbf' size 5m
    EXTENT MANAGEMENT LOCAL AUTOALLOCATE;

create tablespace tbs2
    datafile 'C:\SWE_STUDIES\Fourth_Semester\DBMS II LAB\lab2\tbs2.dbf' size 5m
    EXTENT MANAGEMENT LOCAL AUTOALLOCATE;
```

Explanation:

- Use create tablespace
- Set the datafile location
- Set the size
- Extent the management to local autolocate

In task 2,

```
create user faiyaz identified by faiyaz default tablespace tbs1 quota 3m on tbs1;
alter user faiyaz quota 3m on tbs2;

grant dba to faiyaz;

conn faiyaz/faiyaz;
```

Explanation

- Create a new user identified by a password
- Assign a tablespace tbs1 with 3Mb of quota
- Using alter user also assign 3Mb quota to tbs2 to that particular user

In task 3,

```
create table department
(deptid int primary key,
name varchar2(20)
)tablespace tbs1;

create table student
(id int primary key,
stdname varchar2(20),
deptid int,
constraint fk_std foreign key (deptid) references department(deptid)
)tablespace tbs1;
```

Explanation:

- Create the tables with proper cardinality using foreign key.
- Assign tablespace tbs1to this table.

In task 4,

```
create table course
(code int primary key,
name varchar2(20),
credit real,
offerby int,
constraint fk_course foreign key (offerby) references department(deptid)
)tablespace tbs2;
```

Explanation:

- Create another table course
- Assign tablespace tbs2 to this table.

In task 5,

```
SET SERVEROUTPUT ON SIZE 1000000;

BEGIN
FOR counter IN 1..1000000 LOOP
        INSERT INTO department (deptid,name)
            VALUES (counter,'CSE');

END LOOP;
end;
/

BEGIN
FOR counter IN 1..1000000 LOOP
        INSERT INTO student (id,name,deptid)
            VALUES (counter,'Tahlil',1);

END LOOP;
end;
/

BEGIN
FOR counter IN 1..100000 LOOP
        INSERT INTO course (code,name,credit,offerby)
            VALUES (counter,'Tahlil',3.00,1010);

END LOOP;
end;
/
```

Explanation:

- Insert large amount of data to the tables using PLSQL.
- This will show error while inserting the data because the tablespace doesn't possess that amount of memory allocation.
- To minimize this problem we need to extent the tablespace.

In task 6,

```
SELECT tablespace_name,bytes /1024/1024 MB
FROM dba_free_space
WHERE tablespace_name ='TBS1';
```

```
SELECT tablespace_name , bytes /1024/1024 MB
FROM dba_free_space
WHERE tablespace_name ='TBS2';
```

Explanation:

- The dba_free_space provided the free space for a particular tablespace.
- Tablespace_name should be in uppercase letters.

In task 7,

```
ALTER TABLESPACE tbs1
ADD DATAFILE 'C:\SWE_STUDIES\Fourth_Semester\DBMS II LAB\lab2\tbs1_data.dbf' SIZE 2m;
```

Explanation:

- Using alter command we can extent the tablespace
- This command will add a datafile to the given path
- Size needs to be mentioned also

In task 8,

```
ALTER DATABASE
DATAFILE 'C:\SWE_STUDIES\Fourth_Semester\DBMS II LAB\lab2\tbs2.dbf' RESIZE 15m;
```

Explanation:

- Using alter command we can extent the tablespace.
- This command will add a datafile to the given path.
- Size needs to be mentioned also.

In task 9,

```
select tablespace_name,username,max_bytes/1024/1024 as tb_Size
from dba_ts_quotas where username='FAIYAZ';
```

Explanation:

- Use from dba_ts_quotas
- Apply condition where the username will be in uppercase
- Max_bytes attribute will provide the max size of a particular tablespace

In task 10,

```
DROP TABLESPACE tbs1
INCLUDING CONTENTS AND DATAFILES
CASCADE CONSTRAINTS;
```

Explanation:

- Use drop condition and tablespace name tbs1
- Including contents and datafiles will delete the tablespace and also the datafiles

In task 11,

```
DROP TABLESPACE tbs2
INCLUDING CONTENTS KEEP DATAFILES
CASCADE CONSTRAINTS;
```

Explanation:

- Use drop condition and tablespace name tbs2
- Including contents keep datafiles will delete the tablespace but the datafiles will not delete the datafiles

Problems:

- Task 6 was returning 0 rows while the tablespace name was in lowercase letters.
- Same for task 9 username.
- Using the keep datafiles won't delete the datafile. But If we force stop oracle and delete the datafile, oracle crashes. It won't connect to the server. It will show and error that will say oracle is shutting down or in process of another task. But actually oracle can not find the deleted datafile that's why it crashes and can not start.

Solution:

- In database, tablespace and user's username is saved in uppercase letters.
- For the last problem I had to uninstall oracle, delete registration, environment variable path then reinstall oracle. At last it worked.