



IE2080
Database Systems Administration
2nd Year, 1st Semester

Practical Based Assignment

Submitted to
Sri Lanka Institute of Information Technology

In partial fulfillment of the requirements for the
Bachelor of Science Special Honors Degree in Information Technology

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Declaration

I certify that this report does not incorporate without acknowledgement, any material previously submitted for a degree or diploma in any university, and to the best of my knowledge and belief it does not contain any material previously published or written by another person, except where due reference is made in text.

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1. Installation steps
2. Create a PDB by using Database Configuration Assistant (DBCA)

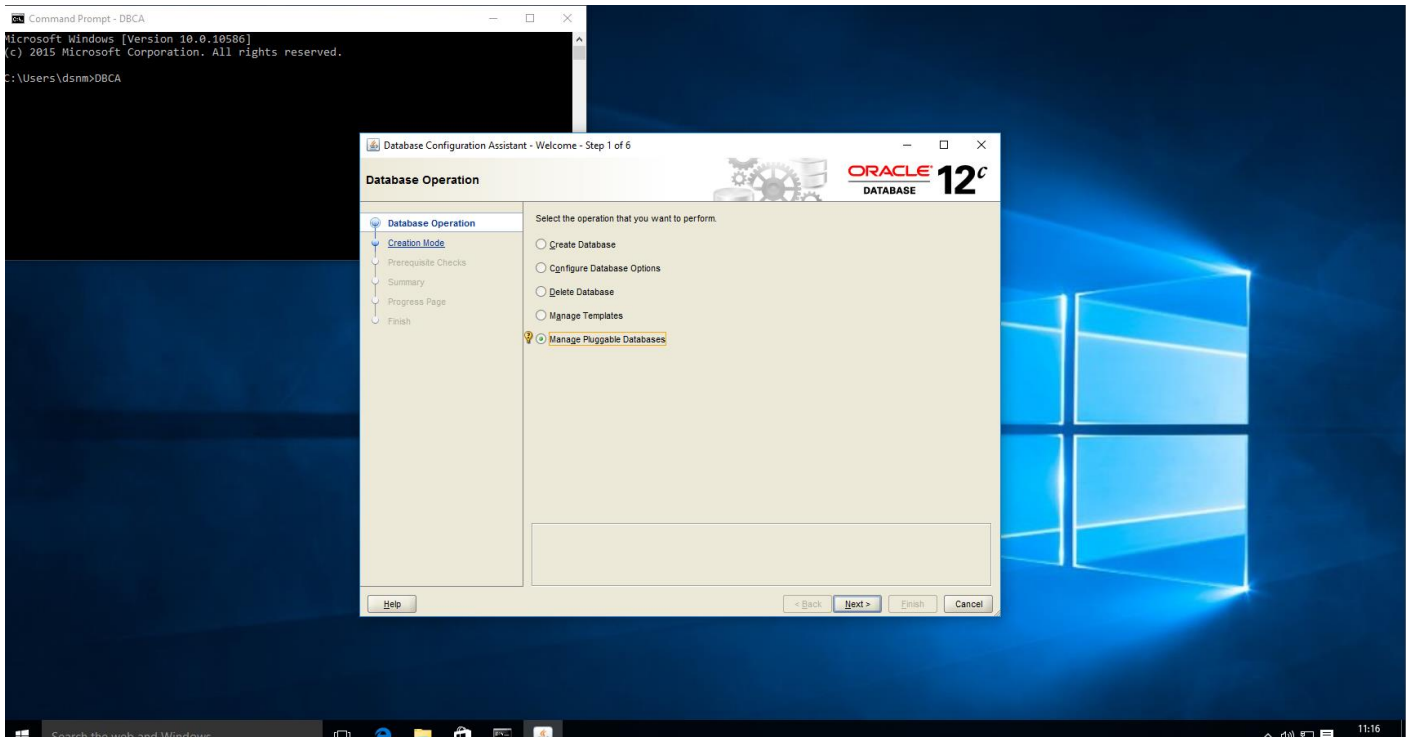


Figure 1.1 Run DBCA utility provided by Oracle to create a new pluggable database.

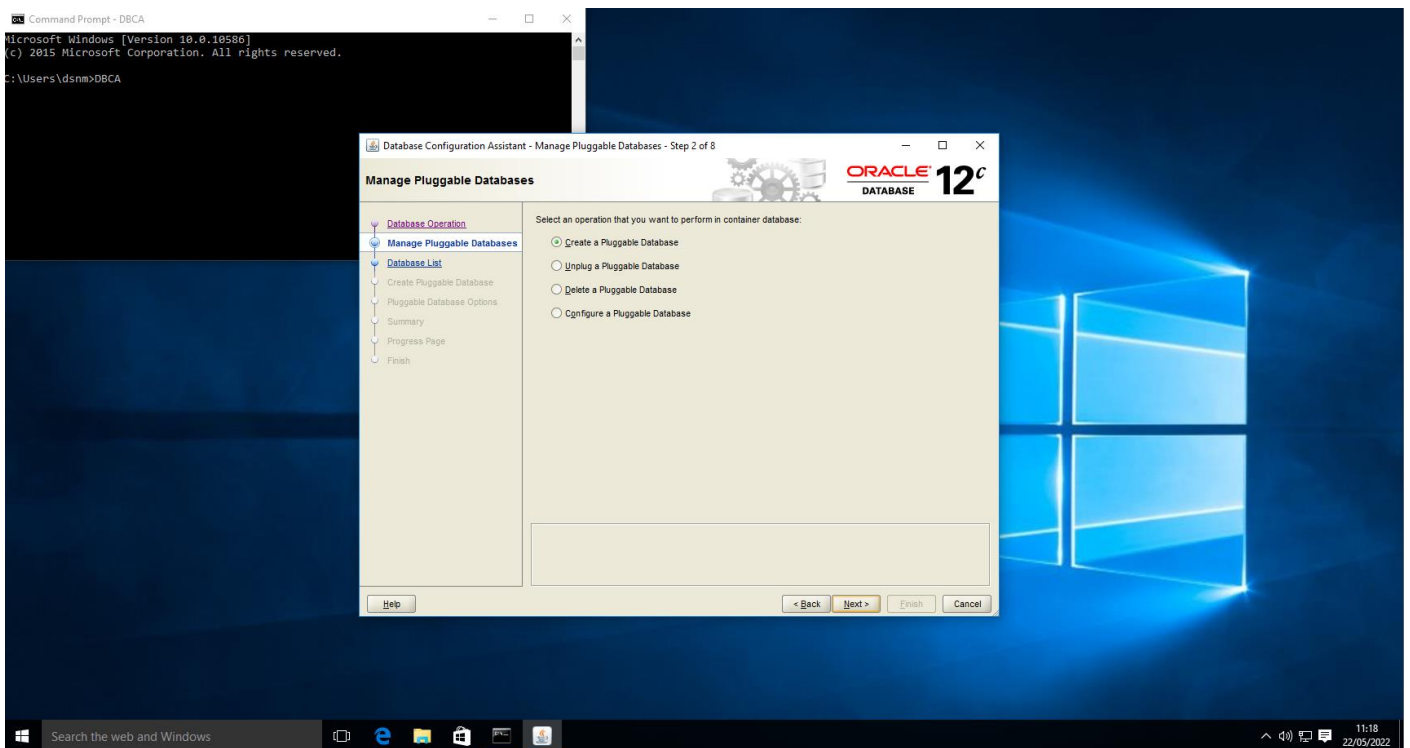


Figure 1.2 Create a pluggable database

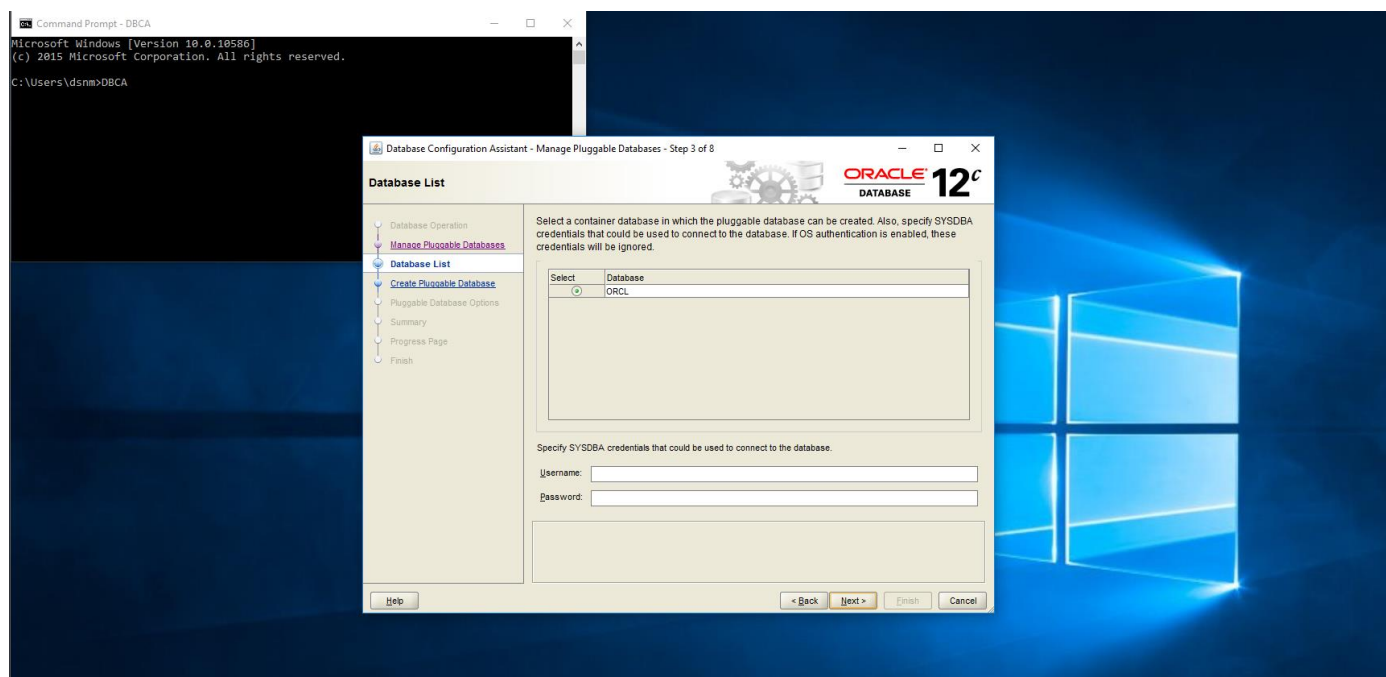


Figure 1.3 Manage pluggable database

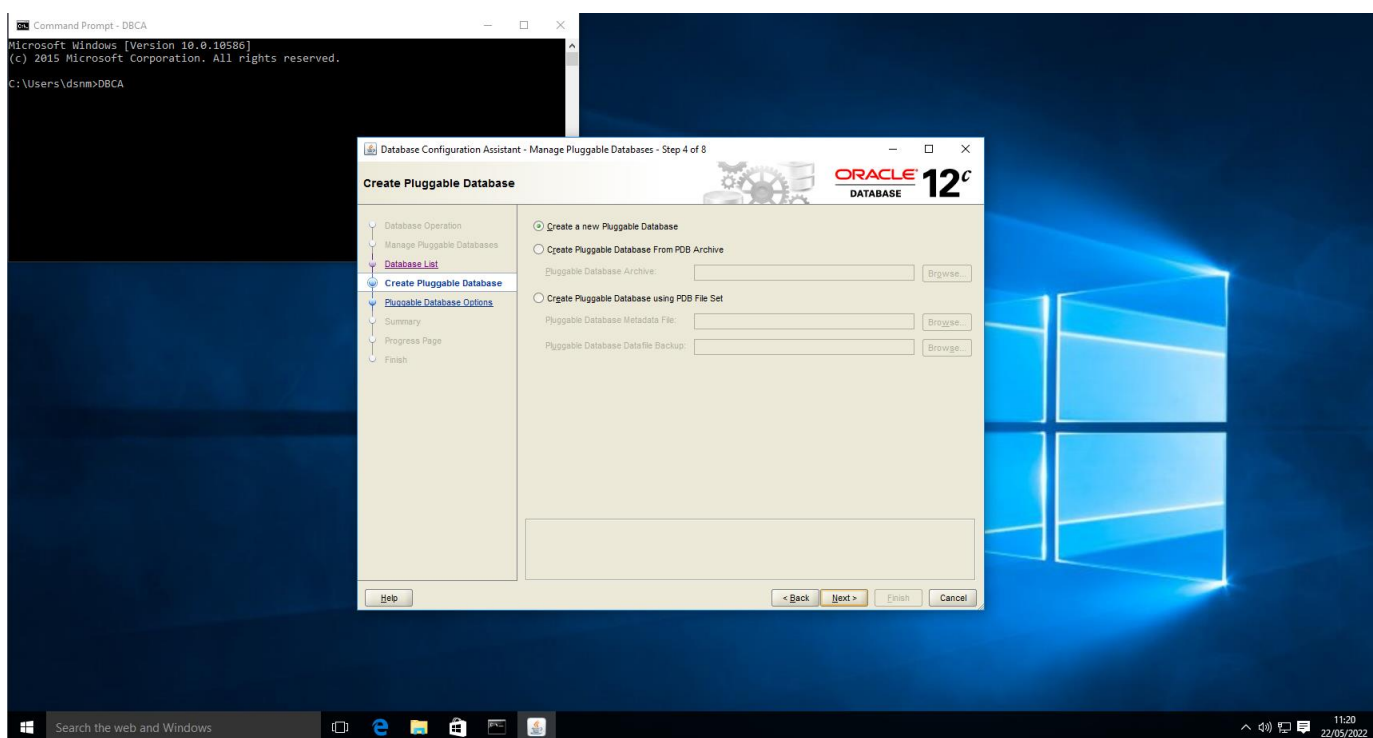


Figure 1.4 Manage pluggable database 2

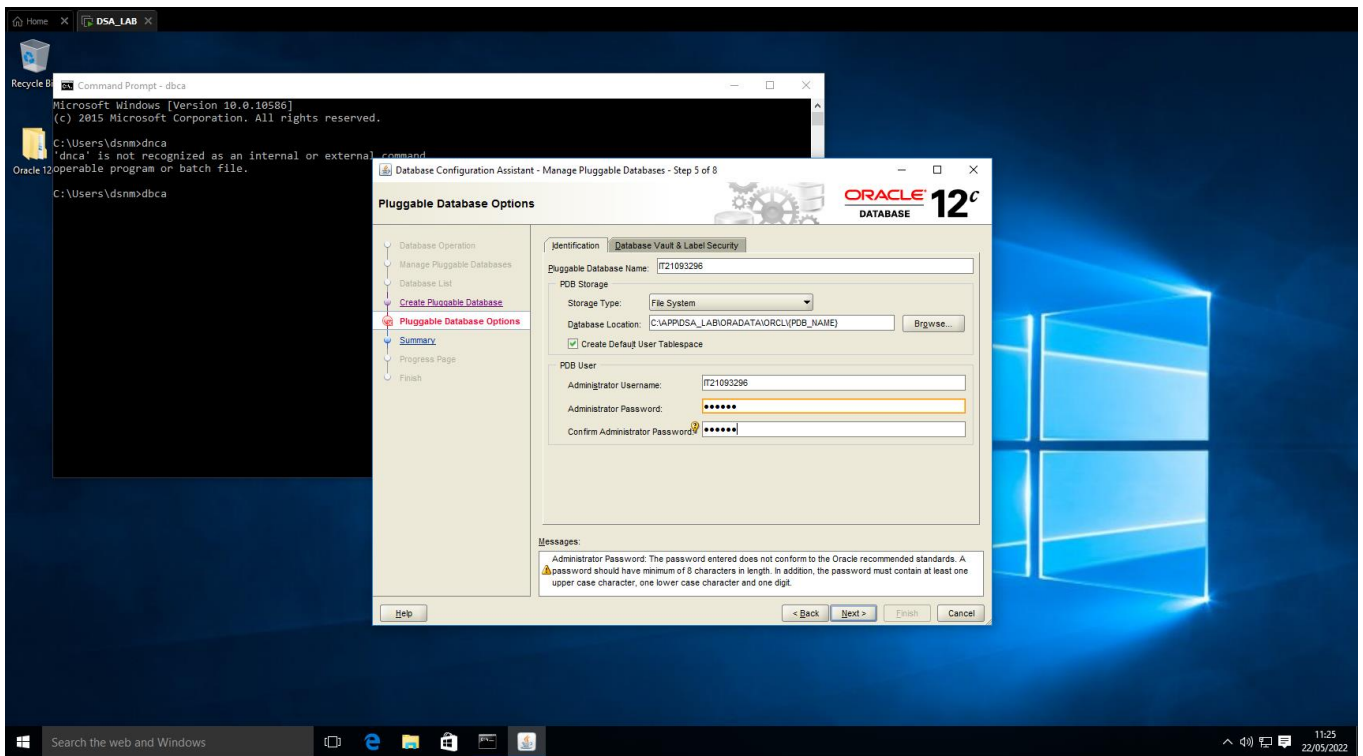


Figure 1.5 Naming new PDB with my it number

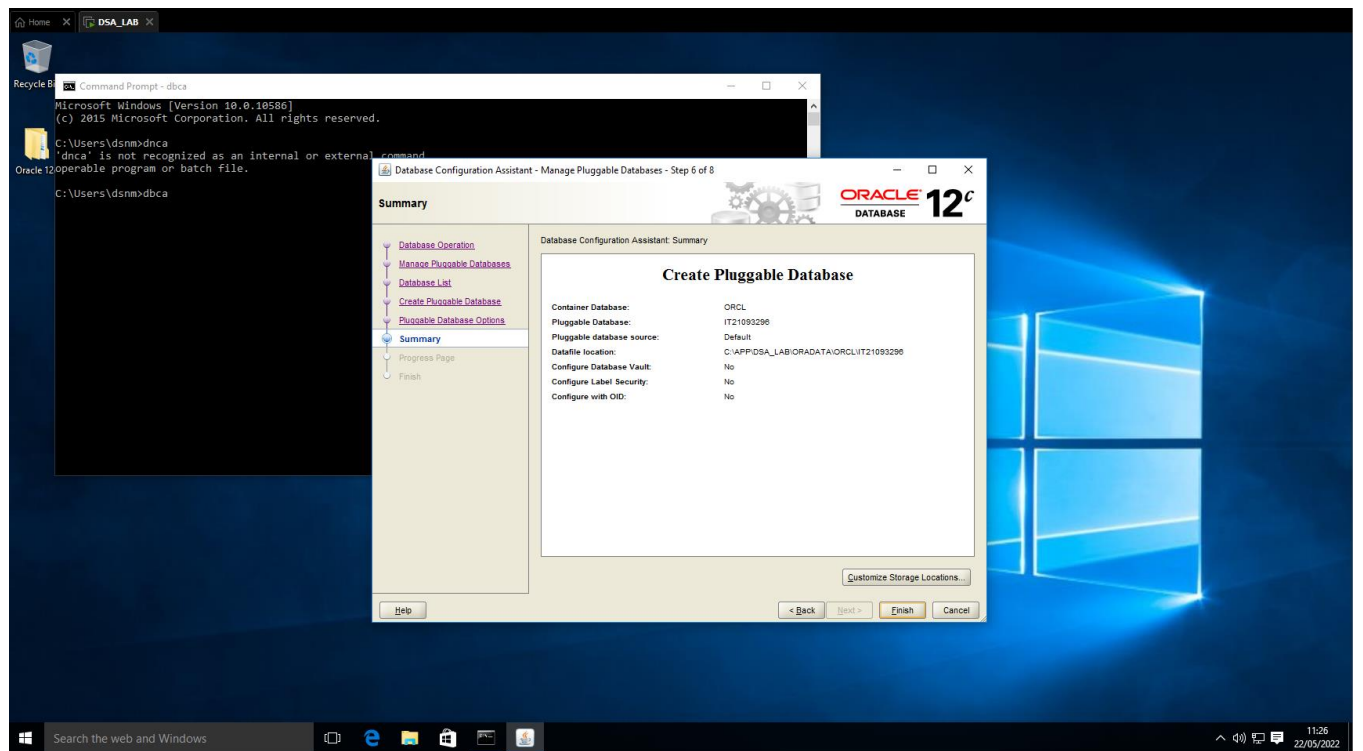


Figure 1.6 Creating PDB

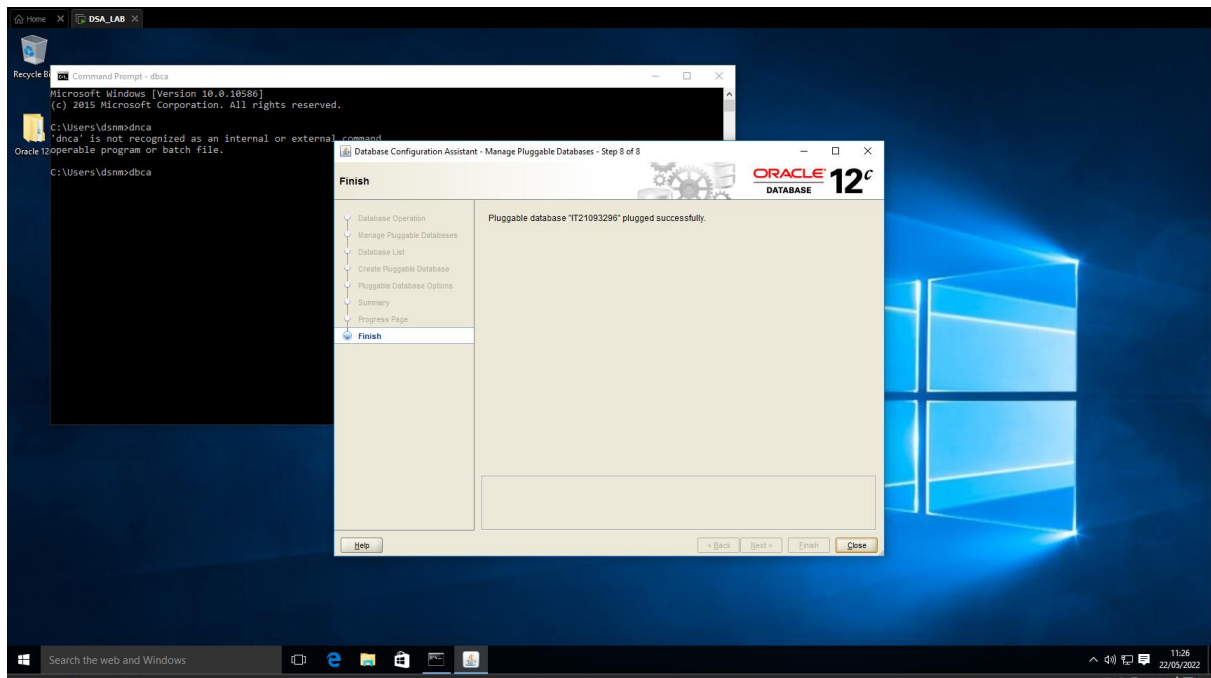


Figure 1.7 PDB created

C. Provide user administration and security. (Use SQLPLUS command prompt to perform following activities. Refrain using EMexpress or SQL Developer to perform following activities)

```
select name,open_mode from v$pdb;
*
ERROR at line 2:
ORA-00923: FROM keyword not found where expected

SQL> select name,open_mode from v$pdb;

NAME                                OPEN_MODE
-----
PDB$SEED                            READ ONLY
PDBORCL                             MOUNTED
IT21093296                          READ WRITE

SQL> alter session
2
SQL>
SQL> alter session
2
SQL> alter session set container=IT21093296;

Session altered.

SQL>
```

Figure 2.1 Alter the session and set container into newly created pluggable database

```
DSA LAB > product > 12.1.0 > dbhome_1 > NETWORK > ADMIN
tnsnames - Notepad
File Edit Format View Help

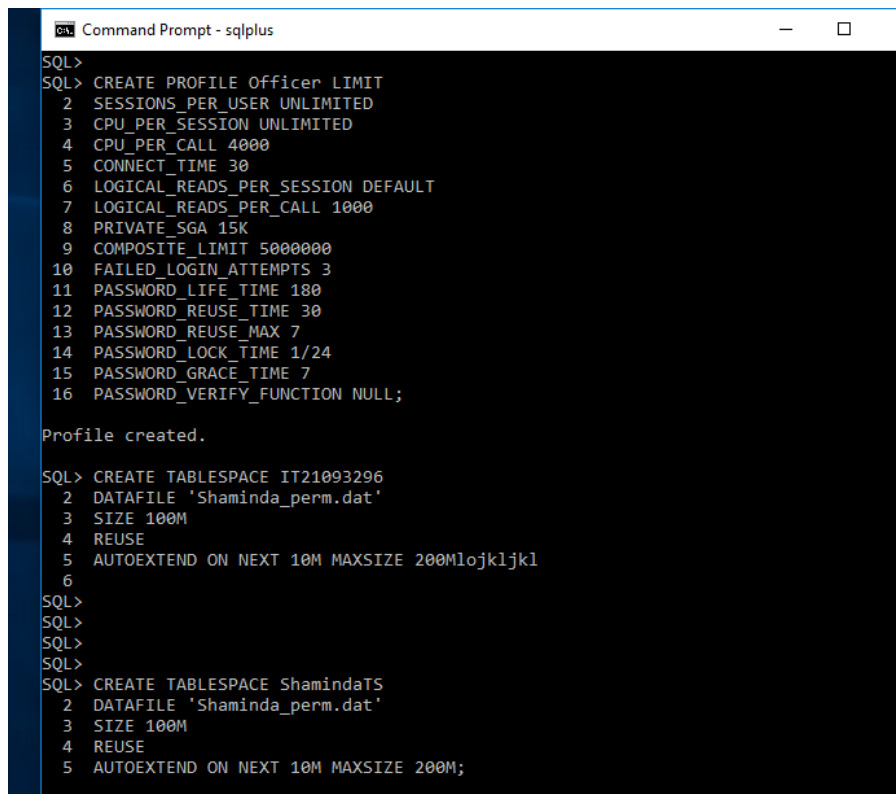
ORACLR_CONNECTION_DATA =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521))
    )
    (CONNECT_DATA =
      (SID = CLRExtProc)
      (PRESENTATION = RO)
    )
  )

ORCL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = orcl)
    )
  )

IT21093296 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = IT21093296)
    )
  )
```

Figure 2.2 Renaming pdb with it number

1. Create profile



```
Command Prompt - sqlplus

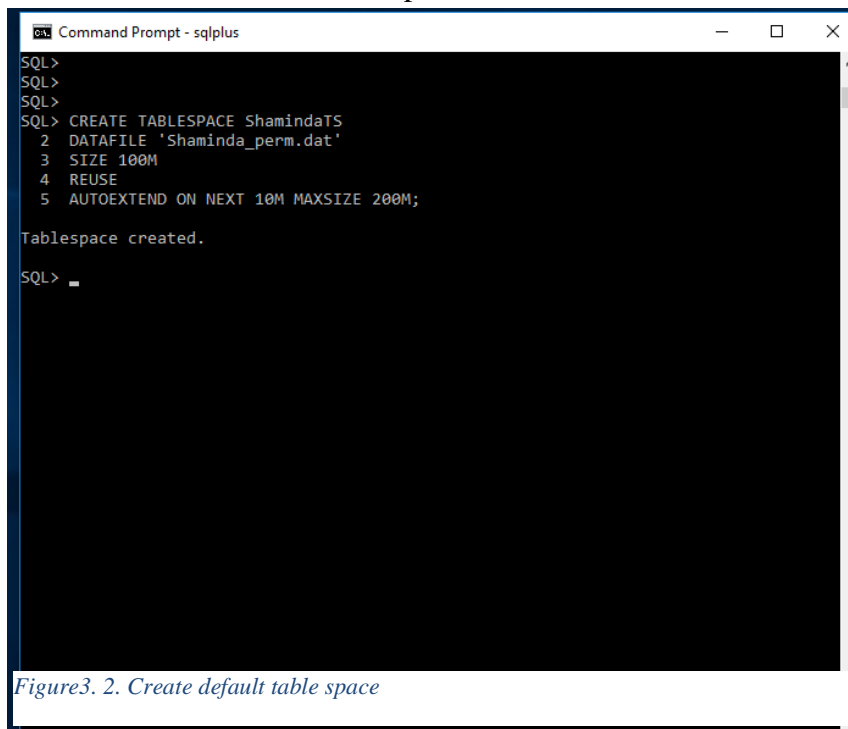
SQL>
SQL> CREATE PROFILE Officer LIMIT
2 SESSIONS_PER_USER UNLIMITED
3 CPU_PER_SESSION UNLIMITED
4 CPU_PER_CALL 4000
5 CONNECT_TIME 30
6 LOGICAL_READS_PER_SESSION DEFAULT
7 LOGICAL_READS_PER_CALL 1000
8 PRIVATE_SGA 15K
9 COMPOSITE_LIMIT 5000000
10 FAILED_LOGIN_ATTEMPTS 3
11 PASSWORD_LIFE_TIME 180
12 PASSWORD_REUSE_TIME 30
13 PASSWORD_REUSE_MAX 7
14 PASSWORD_LOCK_TIME 1/24
15 PASSWORD_GRACE_TIME 7
16 PASSWORD_VERIFY_FUNCTION NULL;

Profile created.

SQL> CREATE TABLESPACE IT21093296
2 DATAFILE 'Shaminda_perm.dat'
3 SIZE 100M
4 REUSE
5 AUTOEXTEND ON NEXT 10M MAXSIZE 200Mlojkljkl
6
SQL>
SQL>
SQL>
SQL>
SQL> CREATE TABLESPACE ShamindaTS
2 DATAFILE 'Shaminda_perm.dat'
3 SIZE 100M
4 REUSE
5 AUTOEXTEND ON NEXT 10M MAXSIZE 200M;
```

Figure 3.1 Create profile

. 2. Create default table space



```
Command Prompt - sqlplus

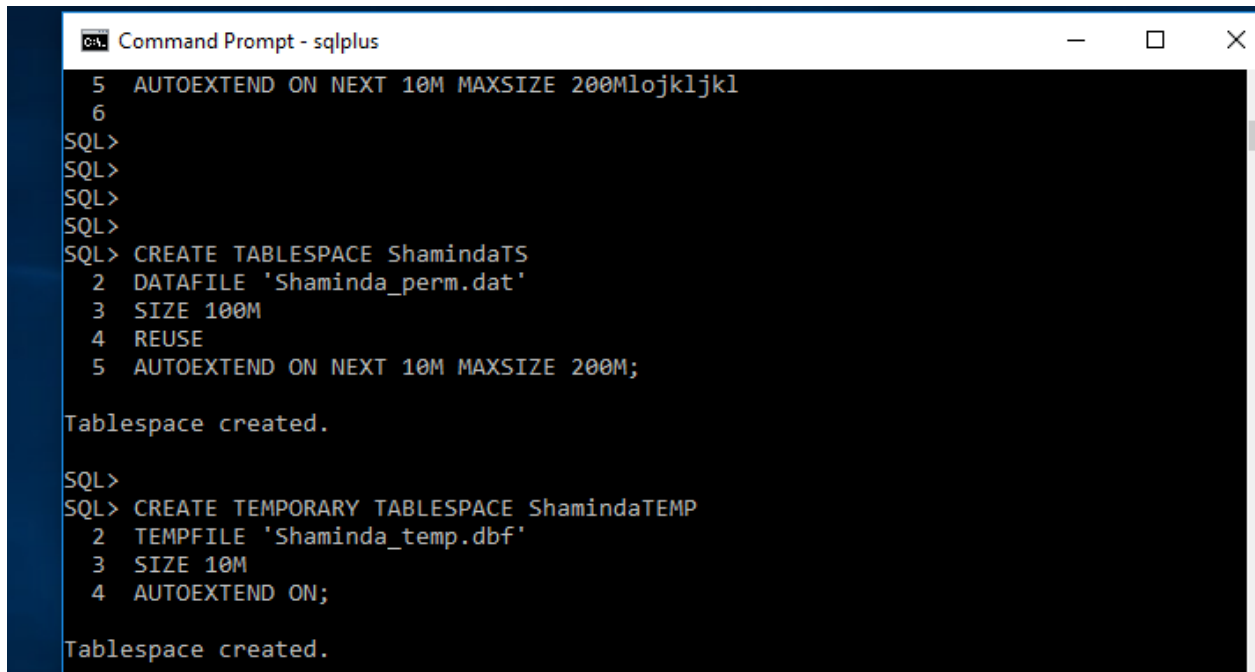
SQL>
SQL>
SQL>
SQL> CREATE TABLESPACE ShamindaTS
2 DATAFILE 'Shaminda_perm.dat'
3 SIZE 100M
4 REUSE
5 AUTOEXTEND ON NEXT 10M MAXSIZE 200M;

Tablespace created.

SQL> _
```

Figure3. 2. Create default table space

3. Create temporary table space



```
Command Prompt - sqlplus
5 AUTOEXTEND ON NEXT 10M MAXSIZE 200Mlojkljkl
6
SQL>
SQL>
SQL>
SQL>
SQL> CREATE TABLESPACE ShamindaTS
2 DATAFILE 'Shaminda_perm.dat'
3 SIZE 100M
4 REUSE
5 AUTOEXTEND ON NEXT 10M MAXSIZE 200M;

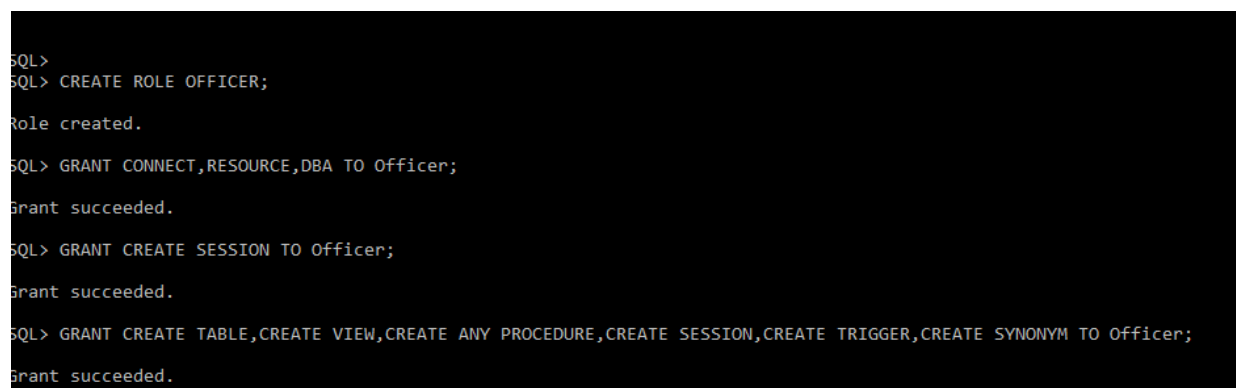
Tablespace created.

SQL>
SQL> CREATE TEMPORARY TABLESPACE ShamindaTEMP
2 TEMPFILE 'Shaminda_temp.dbf'
3 SIZE 10M
4 AUTOEXTEND ON;

Tablespace created.
```

Figure 3.3 Create temporary table space

4. Create role



```
SQL>
SQL> CREATE ROLE OFFICER;

Role created.

SQL> GRANT CONNECT,RESOURCE,DBA TO Officer;

Grant succeeded.

SQL> GRANT CREATE SESSION TO Officer;

Grant succeeded.

SQL> GRANT CREATE TABLE,CREATE VIEW,CREATE ANY PROCEDURE,CREATE SESSION,CREATE TRIGGER,CREATE SYNONYM TO Officer;

Grant succeeded.
```

Figure 3.4 Create role

5. Create user

```
SQL> CREATE USER Shaminda IDENTIFIED BY abc123
  2  DEFAULT TABLESPACE ShamindaTS
  3  TEMPORARY TABLESPACE ShamindaTEMP
  4  QUOTA 50M ON ShamindaTS
  5  PROFILE Officer;

User created.

SQL> _
```

Figure 3.5 Create user

6. Connect to user account that you have created in step 5 (Provide appropriate privileges when needed) Hint : Use appropriate connect string in the command prompt

```
SQL>
SQL> GRANT Officer to Shaminda;

Grant succeeded.

SQL> exit
Disconnected from Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options
```

Figure 3.6 Connect user

7. Create tables by converting below description into a relational model using Oracle SQL queries after connecting to the created user account in step 5

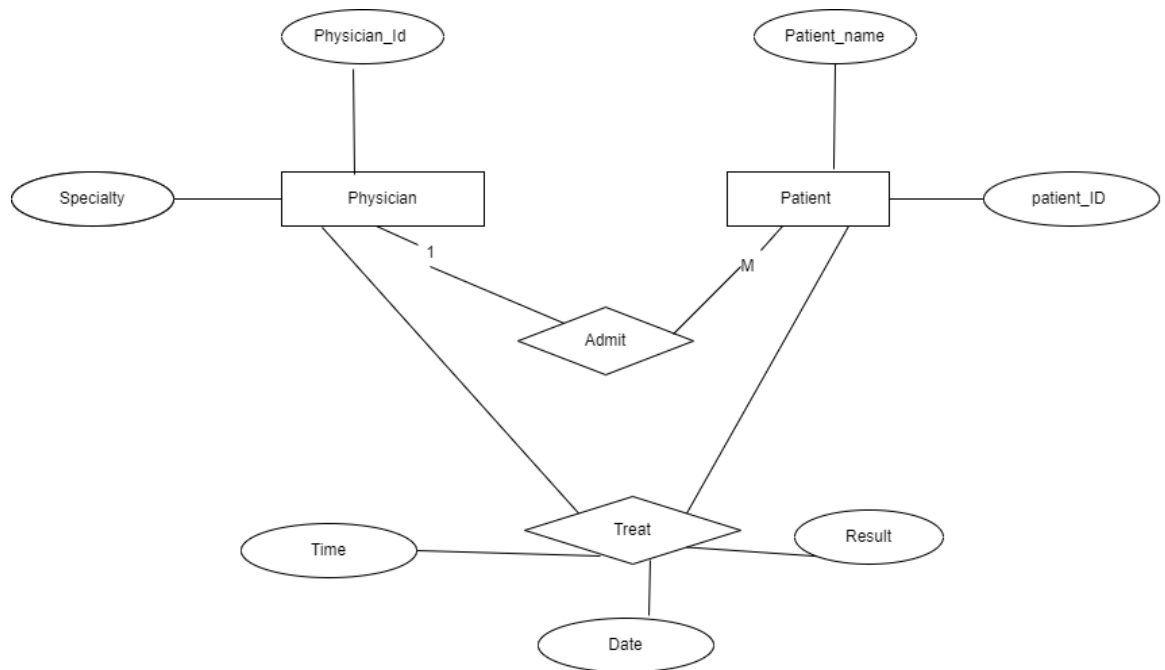


Figure 4.1 ER diagram

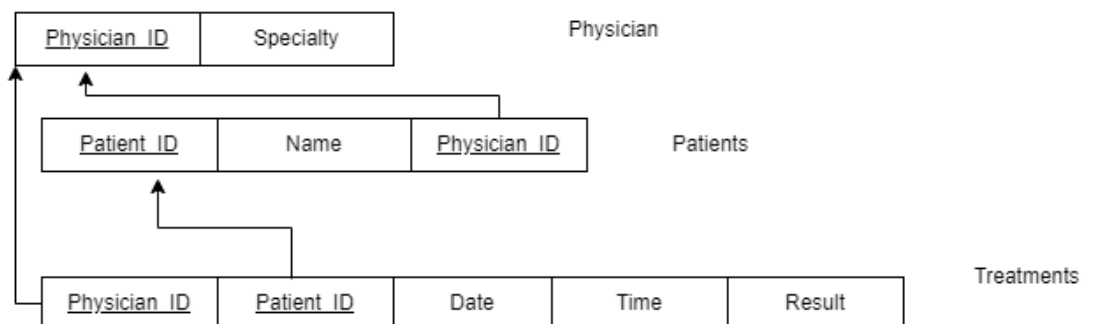


Figure 4.2 relational model

8. Insert 5 data rows as you wish for the created tables in step 7.

```
Last Successful login time: Mon May 23 2022 00:34:57 +05:30

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

SQL> CREATE TABLE PHYSICIAN(
  2  PHYSICIAN_ID CHAR(5) NOT NULL,
  3  SPECIALTY VARCHAR(50),
  4  constraint PHYSICIAN_PK PRIMARY KEY(PHYSICIAN_ID));

Table created.

SQL> CREATE TABLE PATIENT(
  2  PATIENT_ID CHAR(5) NOT NULL,
  3  NAME VARCHAR(50),
  4  PHYSICIAN_ID CHAR(5) NOT NULL,
  5  constraint PATIENT_PK PRIMARY KEY(PATIENT_ID),
  6  constraint FK1 FOREIGN KEY(PHYSICIAN_ID) REFERENCES PHYSICIAN(PHYSICIAN_ID));

Table created.

SQL> CREATE TABLE TREATMENTS(
  2  PHYSICIAN_ID CHAR(5) NOT NULL,
  3  PATIENT_ID CHAR(5) NOT NULL,
  4  T_DATE VARCHAR(15),
  5  T_TIME VARCHAR(10),
  6  RESULT VARCHAR(100),
  7  constraint FK2 FOREIGN KEY(PHYSICIAN_ID) REFERENCES PHYSICIAN(PHYSICIAN_ID),
  8  constraint FK3 FOREIGN KEY(PATIENT_ID) REFERENCES PATIENT(PATIENT_ID));

Table created.
```

Figure 5.1 Creating tables

```
Command Prompt - sqlplus Shaminda/abc123@IT21093296

ERROR at line 1:
ORA-00001: unique constraint (SHAMINDA.PHYSICIAN_PK) violated

SQL> INSERT INTO PHYSICIAN VALUES('PHY02','CHEST PHYSICIAN');

1 row created.

SQL> INSERT INTO PHYSICIAN VALUES('PHY03','Neurology');

1 row created.

SQL> INSERT INTO PHYSICIAN VALUES('PHY04','Allergy and immunology');

1 row created.

SQL> INSERT INTO PHYSICIAN VALUES('PHY05','Anesthesiology');

1 row created.
```

Figure 6.1 Insert data Physician

```

C:\Users\dsnm>sqlplus Shaminda/abc123@IT21093296
Refer to the SQL*Plus User's Guide and Reference for more information.

C:\Users\dsnm>sqlplus Shaminda/abc123@IT21093296

SQL*Plus: Release 12.1.0.2.0 Production on Mon May 23 03:00:12 2022

Copyright (c) 1982, 2014, Oracle. All rights reserved.

Last Successful login time: Mon May 23 2022 02:39:44 +05:30

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application Testing options

SQL>
SQL>
SQL> INSERT INTO PHYSICIAN VALUES('PHY05','Anesthesiology');
INSERT INTO PHYSICIAN VALUES('PHY05','Anesthesiology')
*
ERROR at line 1:
ORA-00001: unique constraint (SHAMINDA.PHYSICIAN_PK) violated

SQL> INSERT INTO PATIENT VALUES('P02','Siril','PHY02');

1 row created.

SQL> INSERT INTO PATIENT VALUES('P03','Rathindu','PHY03');

1 row created.

SQL> INSERT INTO PATIENT VALUES('P04','Chanuka','PHY04');

1 row created.

SQL> INSERT INTO PATIENT VALUES('P05','Pasindu','PHY05');

1 row created.

```

Figure 6.2 Insert data patient

```

SQL> INSERT INTO PATIENT VALUES('P01','Kamal','PHY01');

1 row created.

SQL> INSERT INTO TREATMENTS VALUES('PHY01','P01','2022-04-28','03:22:23','CHECK');

1 row created.

SQL> INSERT INTO TREATMENTS VALUES('PHY02','P02','2022-07-22','04:25:33','SCAN');

1 row created.

SQL> INSERT INTO TREATMENTS VALUES('PHY02','P02','2022-07-22','04:25:33','SCAN');

1 row created.

SQL> INSERT INTO TREATMENTS VALUES('PHY04','P04','2022-03-18','02:44:14','BLOOD TEST');

1 row created.

SQL> INSERT INTO TREATMENTS VALUES('PHY03','P03','2022-03-11','08:22:44','SURGERY');

1 row created.

SQL> INSERT INTO TREATMENTS VALUES('PHY05','P05','2022-05-21','11:22:22','SCAN');

1 row created.

SQL>

```

Figure 6.3 Insert data treatments