IE2080
Database Systems Administration
2nd Year, Semester I

Assignment

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

10/18/2024

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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A) **Installation Steps followed**

1) Creating a virtual machine and install Windows 10 in the Azure portal provided for the SLIIT students.

2) Installing Oracle 12C in the virtual machine using interactive mode.

3) Setting a password for SYS and SYSTEM users in password management at the end of the installation.

4) Login to EM express using https://localhost:5500/em

5) Assigning port number 5501 for container DB and 5502 for Pluggable DB by login to the database using the SYSDBA account.

B) Created a PDB by using Database Configuration Assistant (DBCA)

1) Log in to Oracle server using sqlplus (command prompt).

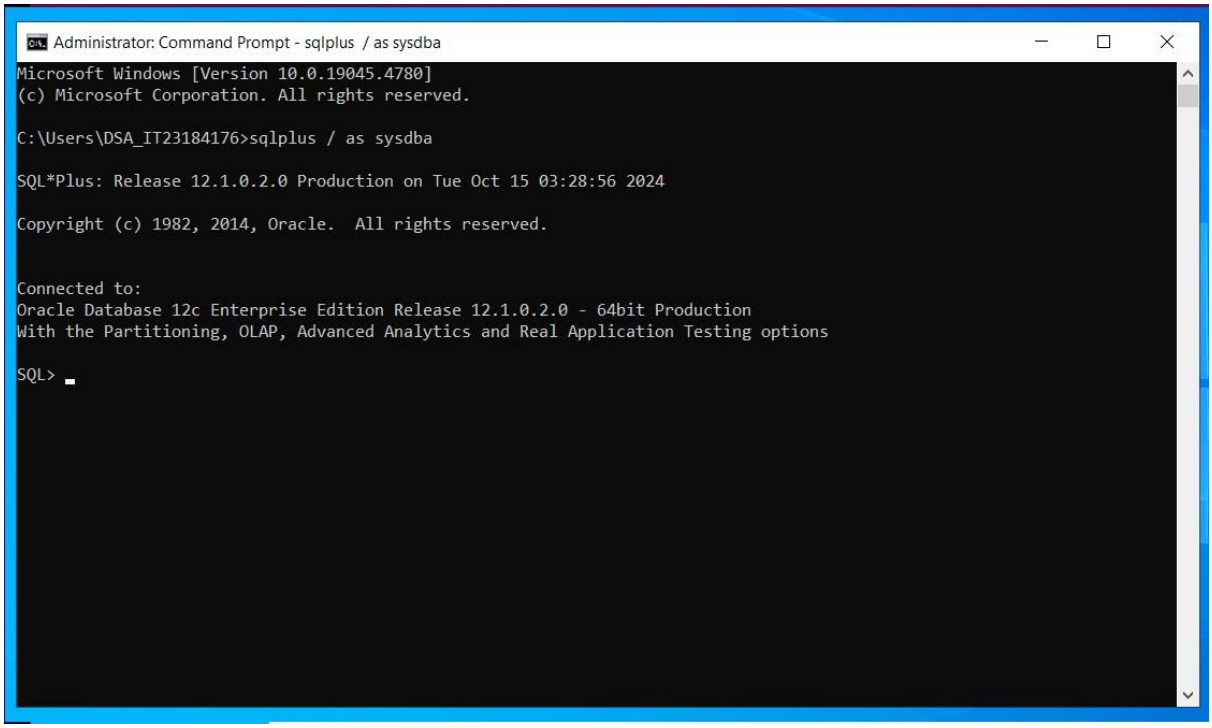

Figure B.1.Loging to oracle server(sqlplus):

2) Running DBCA utility provided by Oracle to create a new pluggable database.

Figure B. 2.1.Running dbca:

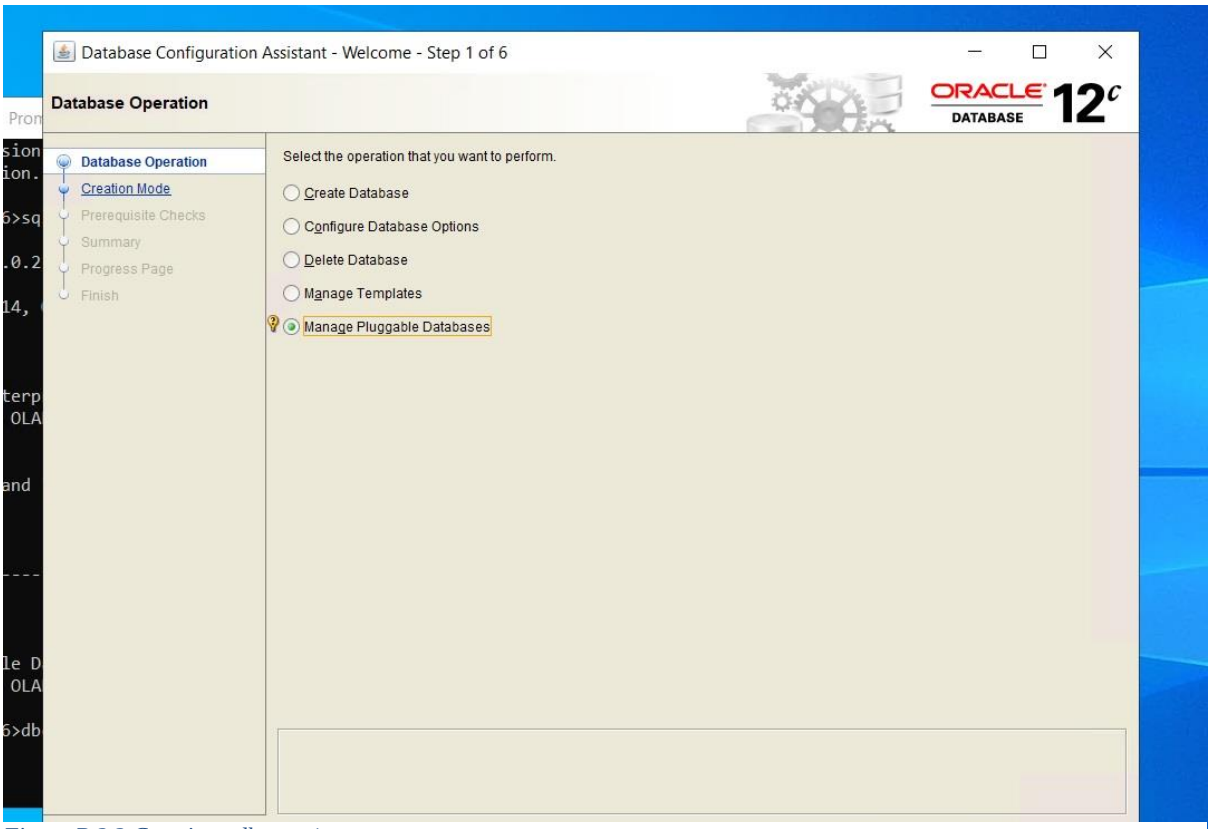

Figure B.2.2.Creating pdb step 1:

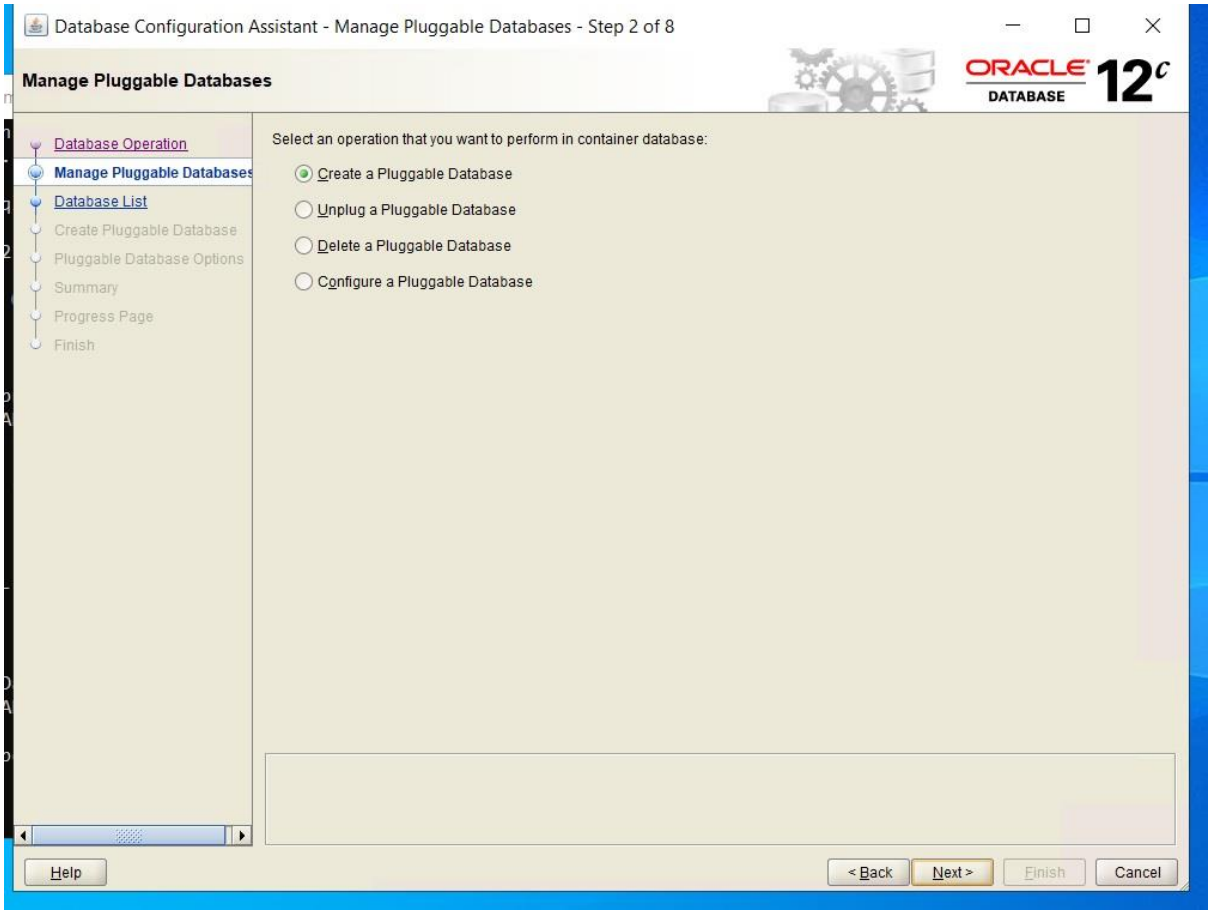

Figure B.2.3. Creating pdb step 2:

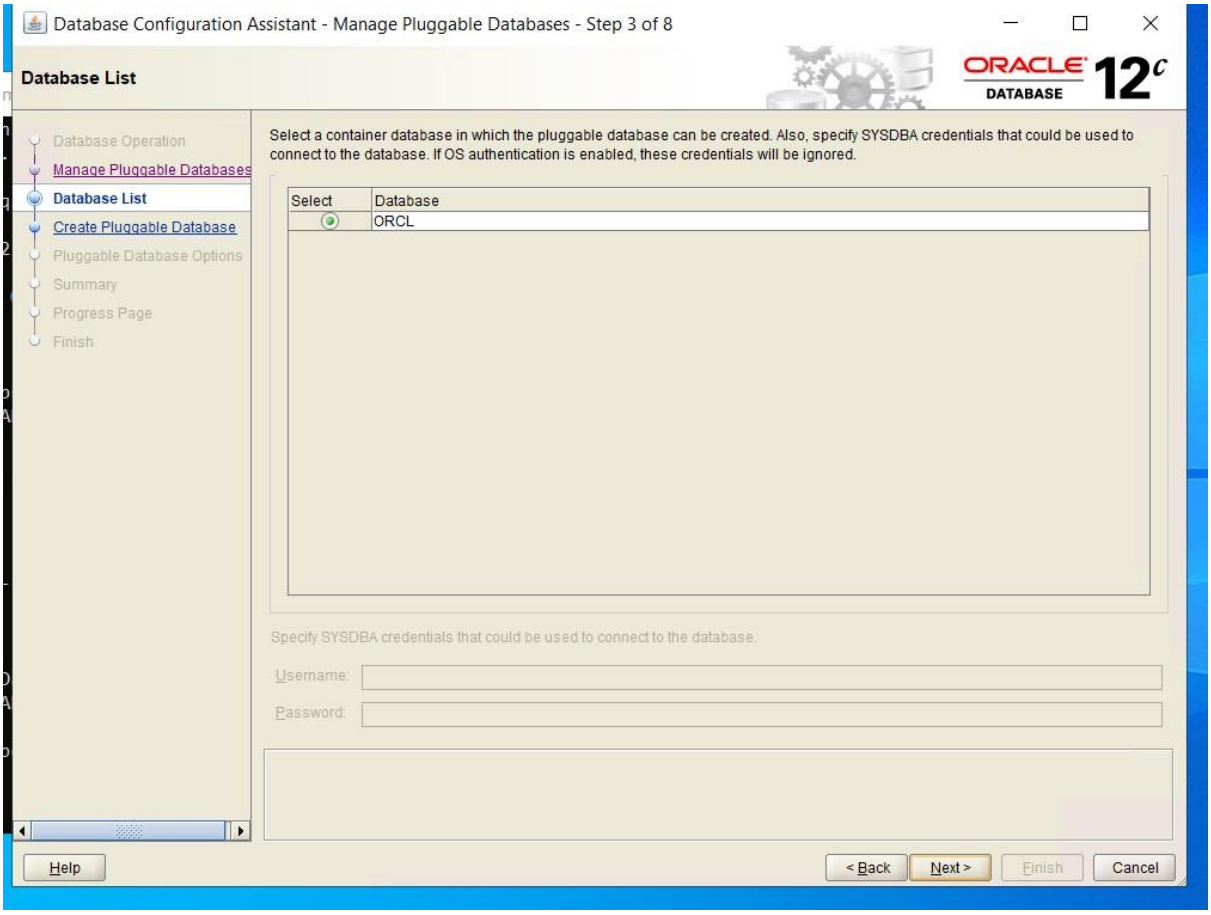

Figure B.2.4. Creating pdb step 3:

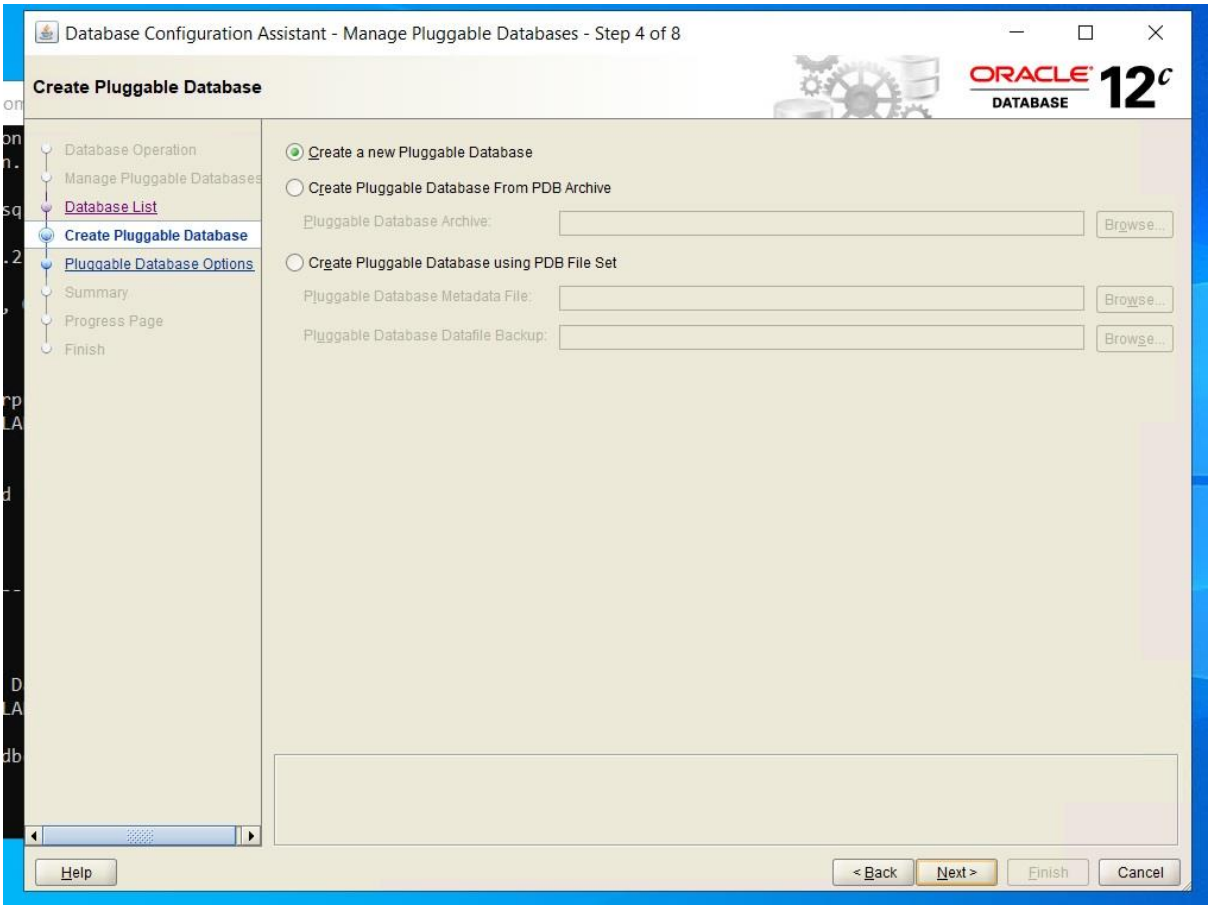

Figure B.2.5. Creating pdb step 4:

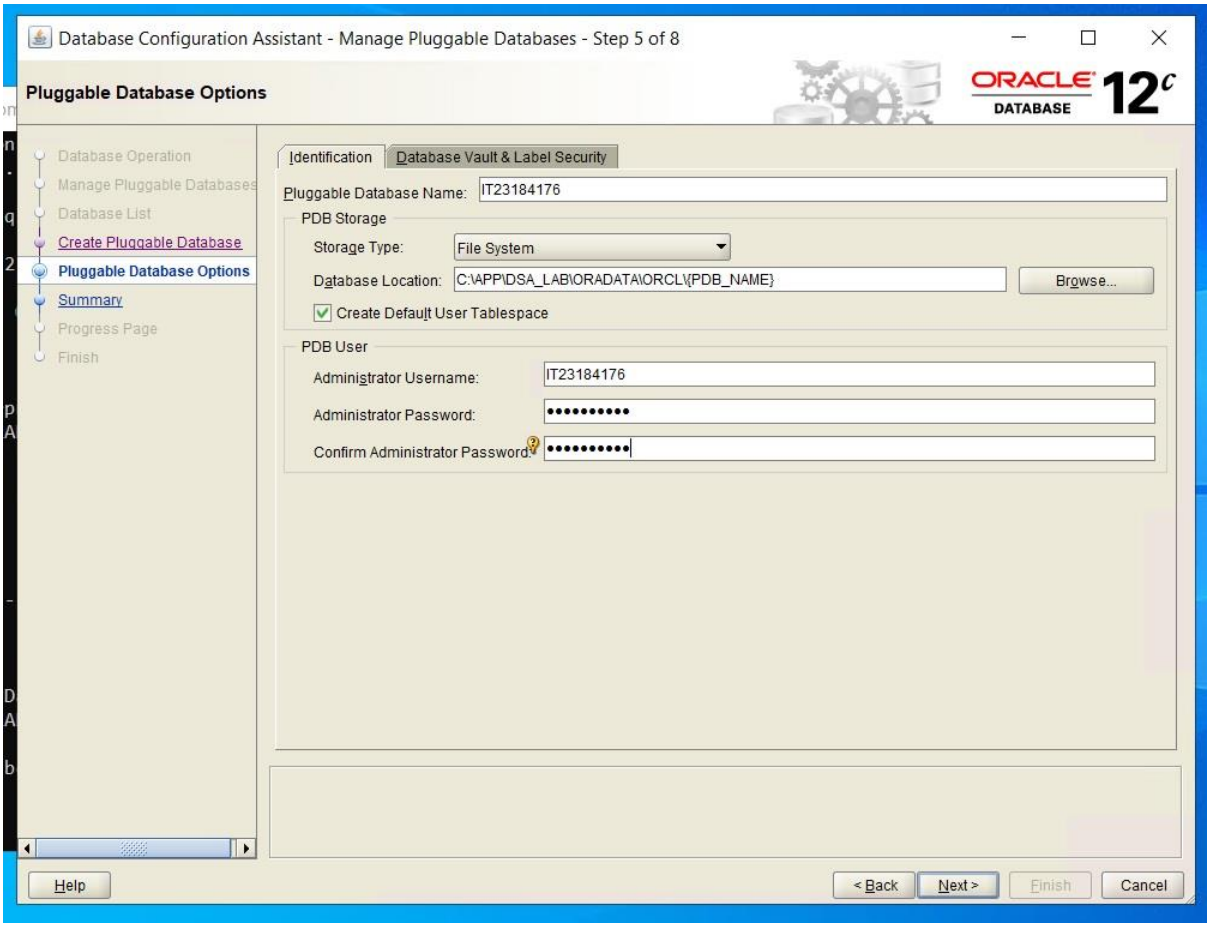

Figure B.2.6. Creating pdb step 5:

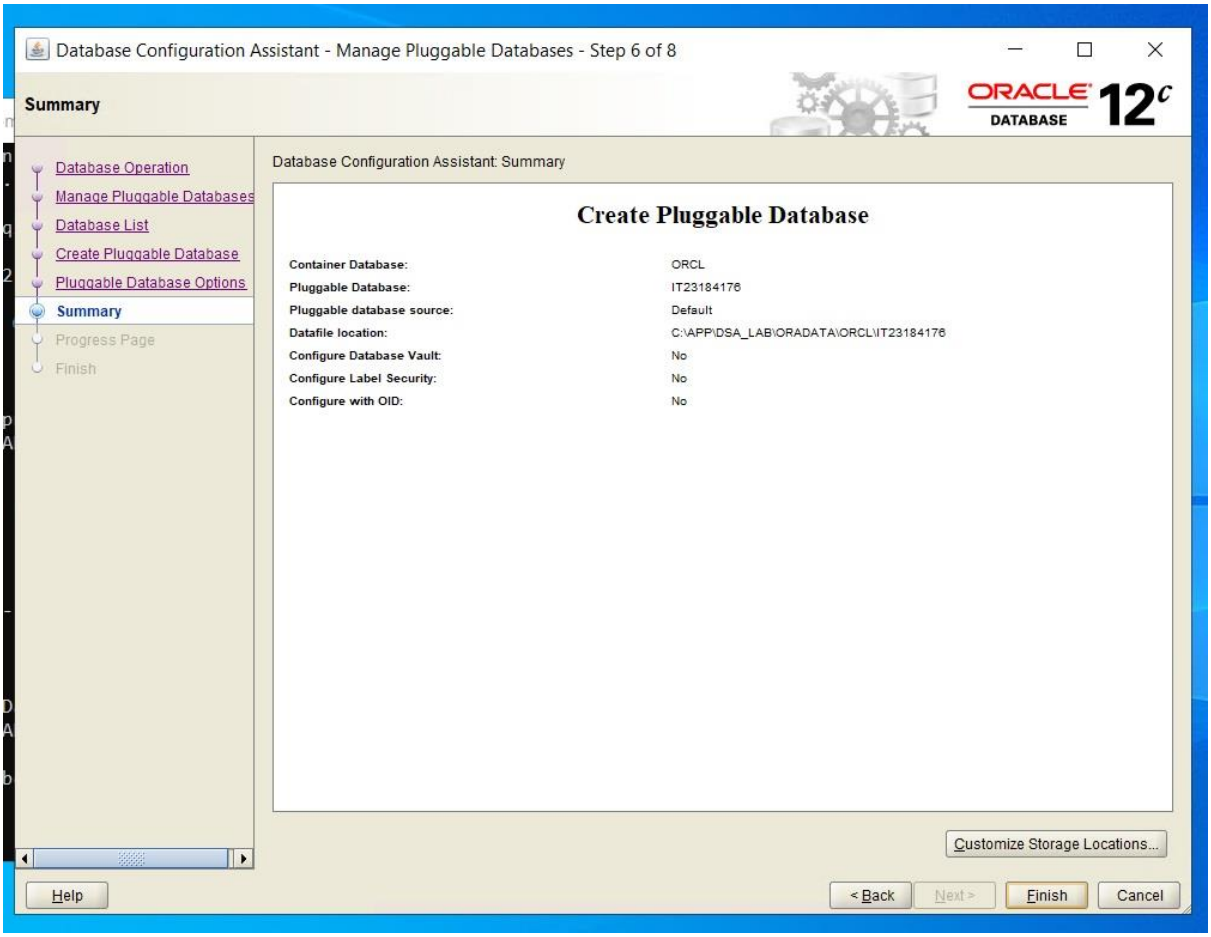

Figure B.2.7. Creating pdb step 6:

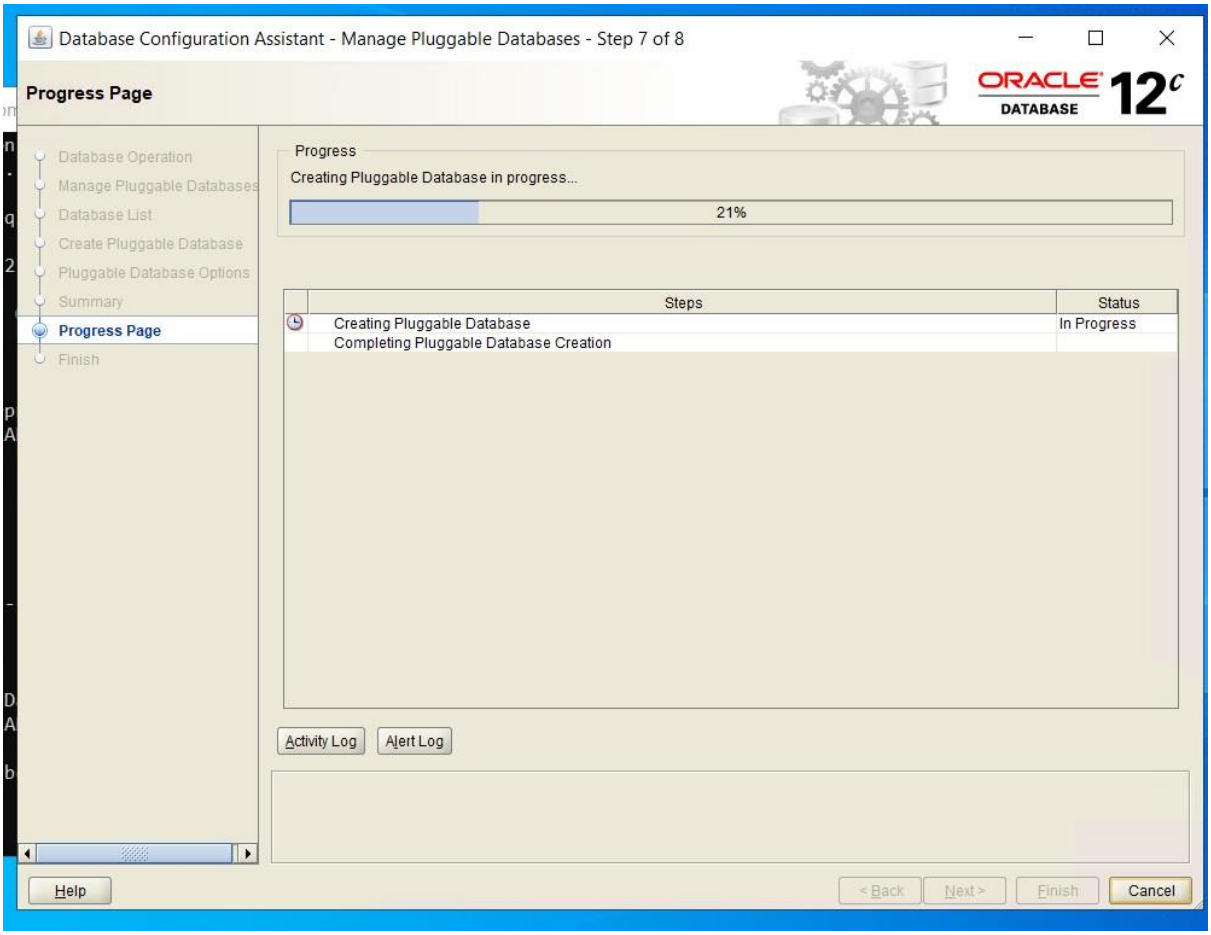

Figure B.2.8. Creating pdb step 7:

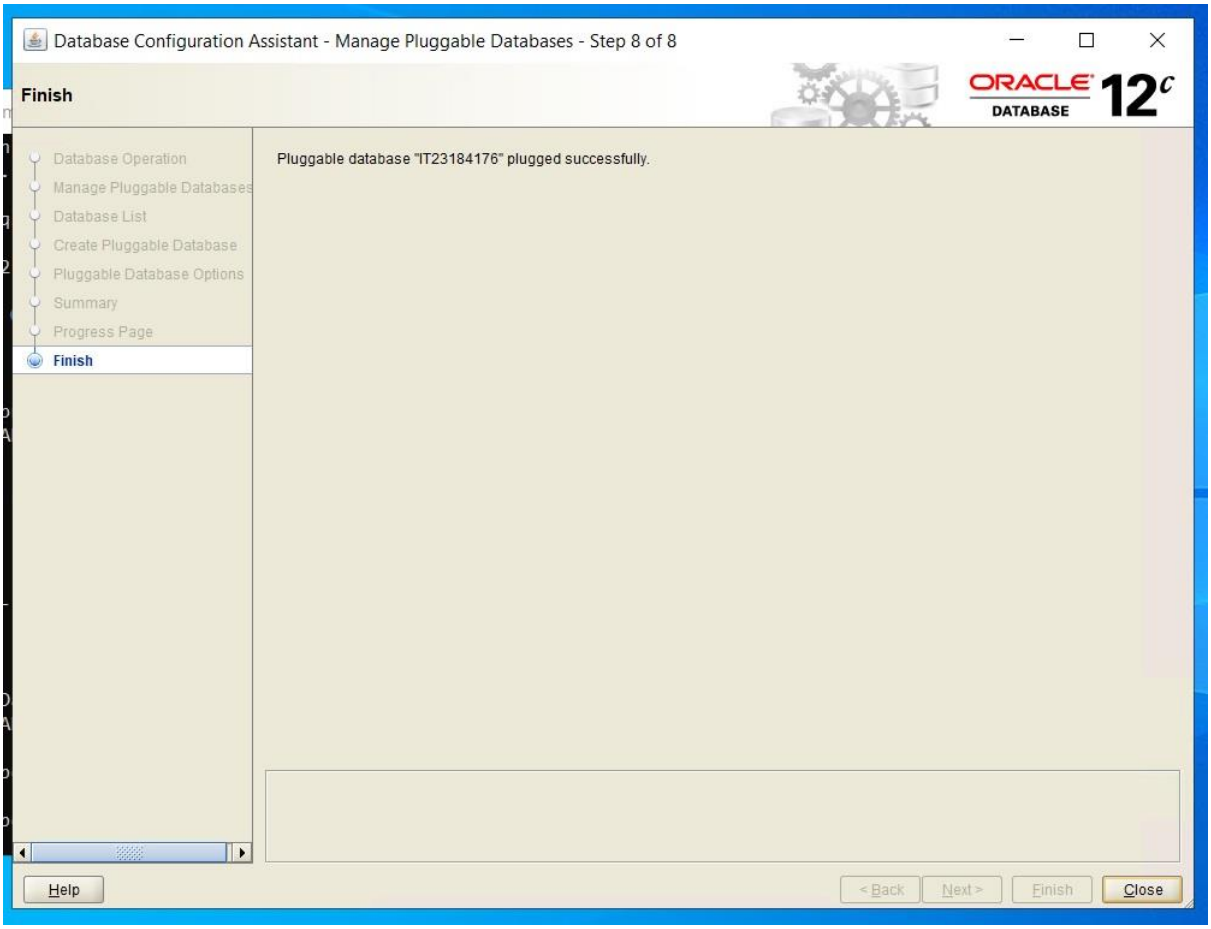

Figure B.2.9. Creating pdb step 8:

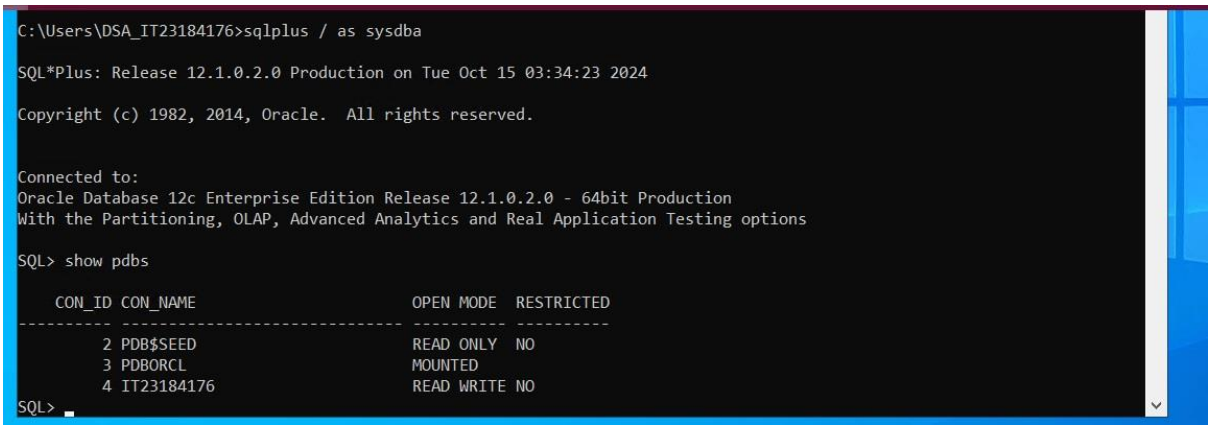

Figure B.2.10.Checking whether pdb is created:

C) Providing user administration and security.

1) Creating profile

```
SQL>
SQL>
SQL> alter session set container=IT23184176
  2  ;

Session altered.

SQL> CREATE PROFILE Receptionist limit
  2  SESSIONS_PER_USER UNLIMITED
  3  CPU_PER_SESSION UNLIMITED
  4  CPU_PER_CALL 3000
  5  CONNECT_TIME 40
  6  LOGICAL_READS_PER_SESSION DEFAULT
  7  LOGICAL_READS_PER_CALL 1000
  8  PRIVATE_SGA 25K
  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>
```

Figure C.1.Crating profile:

2) Creating default table space

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

Tablespace created.

SQL>
```

Figure C.2.Creating default table space:

3) Creating temporary table space

```
SQL> CREATE TEMPORARY TABLESPACE ChalukaTEMP
  2  TEMPFILE 'Chaluka_temp.dbf'
  3  SIZE 100M
  4  AUTOEXTEND ON
  5  ;

Tablespace created.
```

Figure C.3.Creating temp tablespace:

4) Creating role.

```
Administrator: Command Prompt - sqlplus  / as sysdba
SQL> CREATE ROLE Receptionist;

Role created.

SQL> GRANT CONNECT,RESOURCE,DBA TO Receptionist;

Grant succeeded.

SQL> GRANT CREATE SESSION TO Receptionist;

Grant succeeded.

SQL> GRANT CREATE TABLE,
  2  CREATE VIEW,
  3  CREATE ANY PROCEDURE,
  4  CREATE SESSION,
  5  CREATE TRIGGER,
  6  CREATE SYNONYM to Receptionist;

Grant succeeded.
```

Figure C.4.Creating role:

5) Creating user

```
SQL> CREATE USER Chaluka IDENTIFIED BY Chaluka123
  2  DEFAULT TABLESPACE ChalukaTS
  3  TEMPORARY TABLESPACE ChalukaTEMP
  4  QUOTA 50M ON ChalukaTS
  5  PROFILE Receptionist;

User created.

SQL> GRANT Receptionist to Chaluka;

Grant succeeded.

SQL>
```

Figure C.5.Creating user:

6) Connecting to user account that I have created in step 5 .

```
SQL> show pdbs

    CON_ID CON_NAME                       OPEN MODE  RESTRICTED
---------- ------------------------------ ---------- ----------
         4 IT23184176                     READ WRITE NO
SQL> connect Chaluka/Chaluka123@localhost/IT23184176;
Connected.
SQL>
```

Figure C.6.Connecting to user account:

D) Managing Schema Objects.

1) Create Database connection in SQL developer. (Use the newly created pluggable DB name as the service name

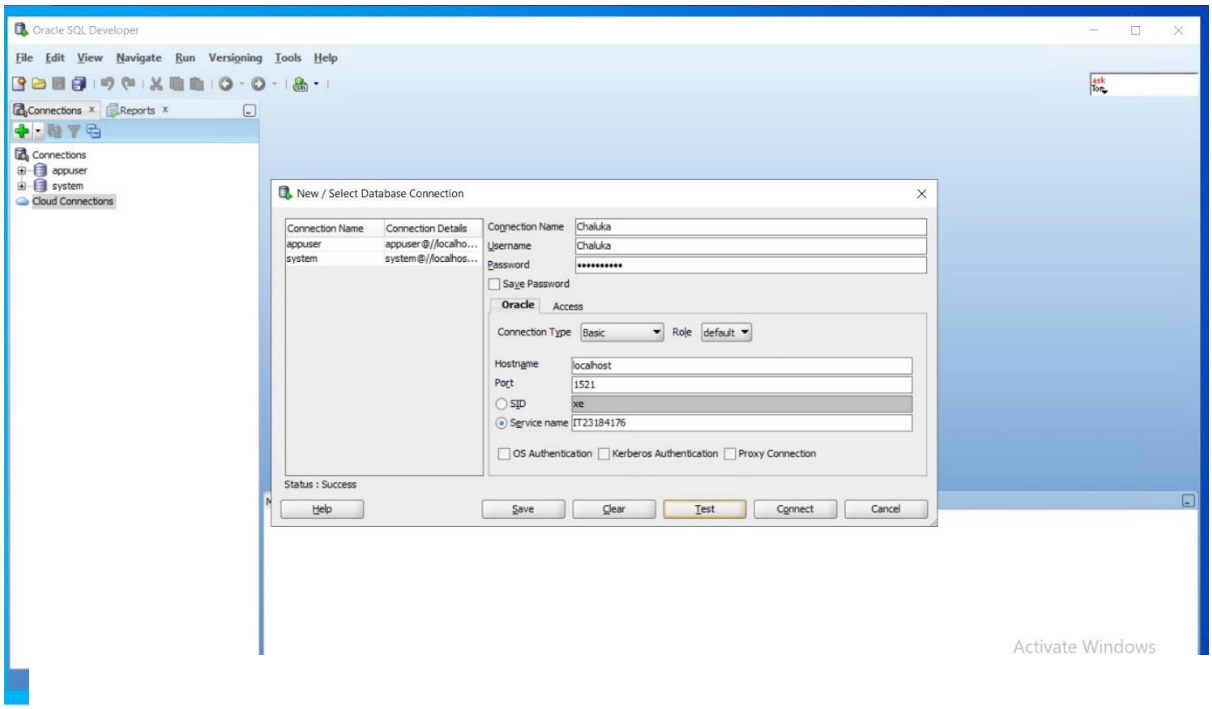

Figure D.1.creating db connection:

2) Checking whether the user created in part C is available in the users list.

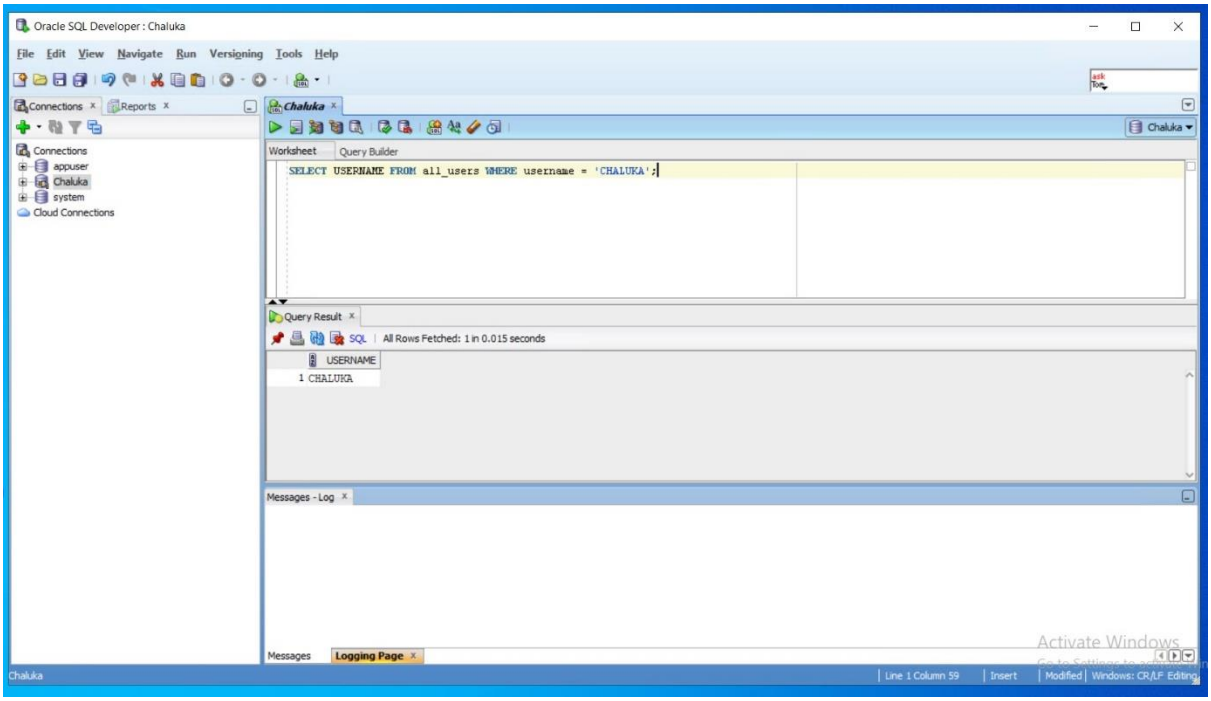

Figure D.2.Checking user creation:

3) Create a new table to save the “HotelReservations” dataset given in the courseweb.

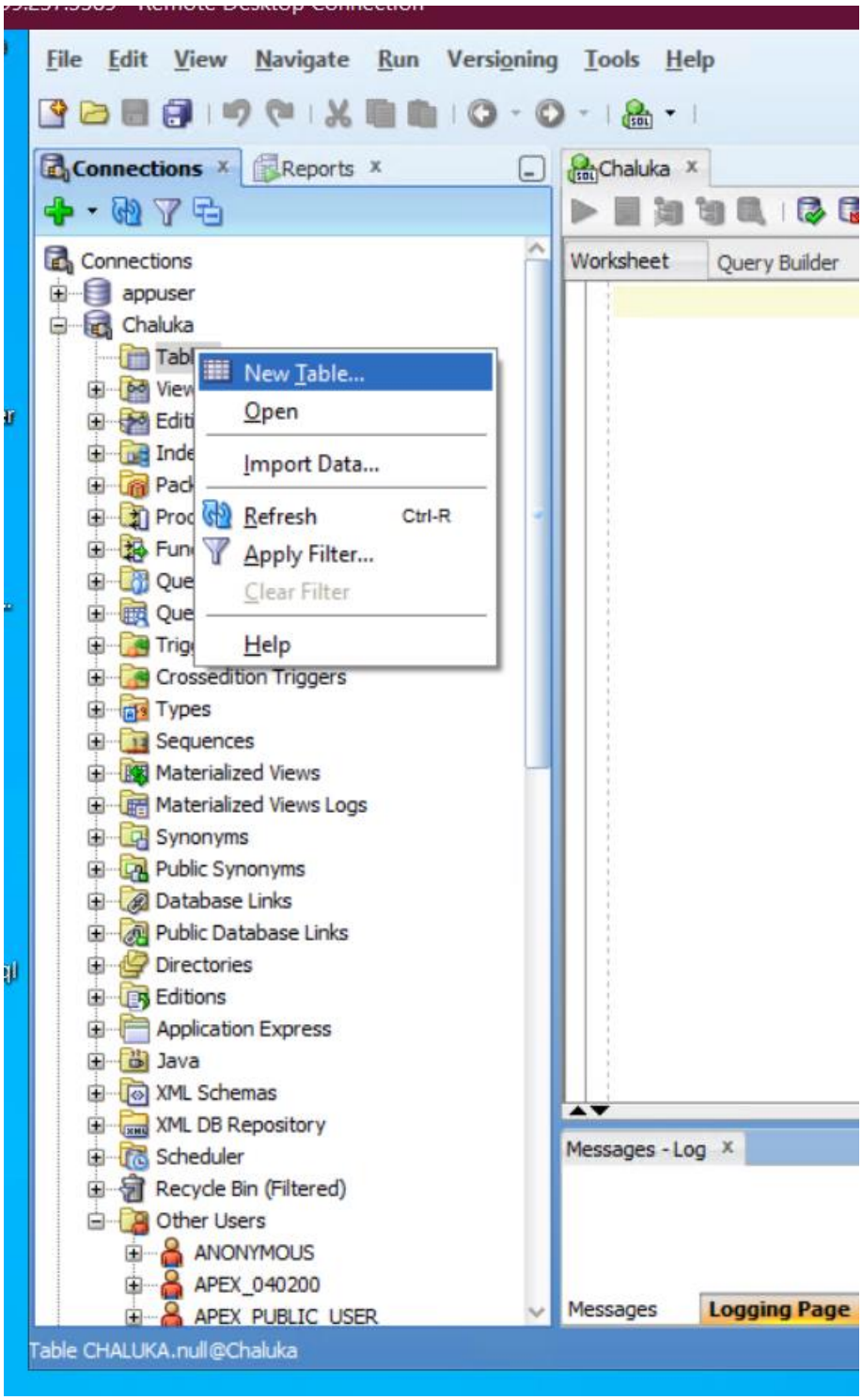

Figure D.3.1.Creating new table step 1:

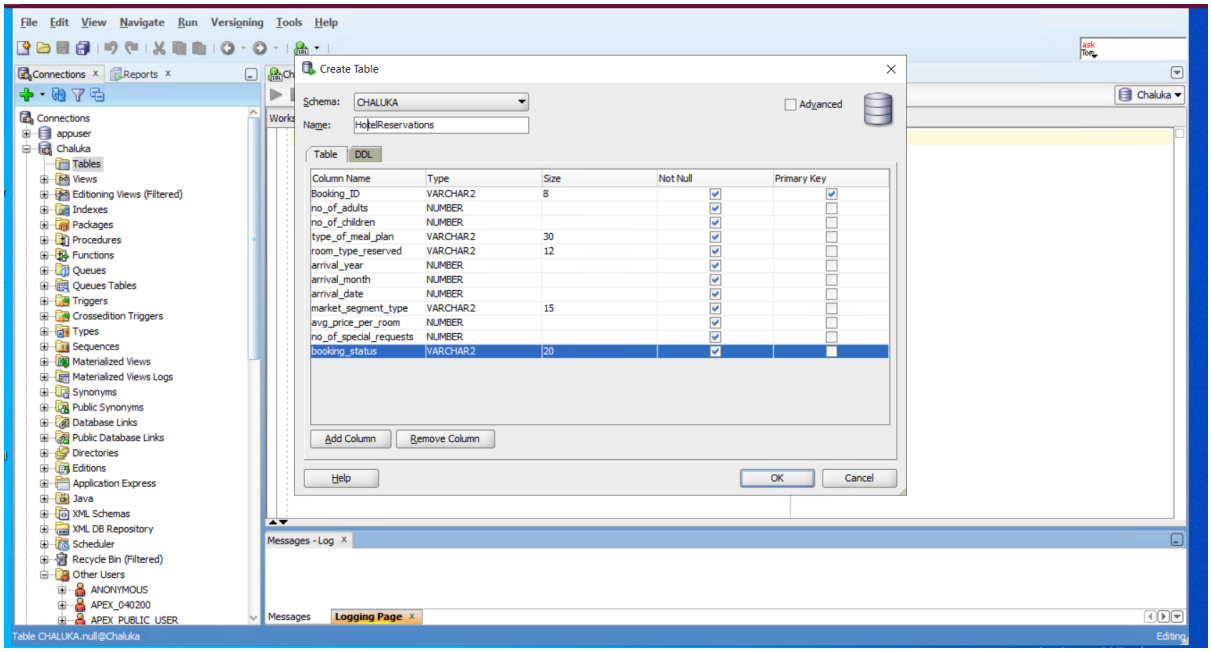

Figure D.3.2.Creating new table step 2:

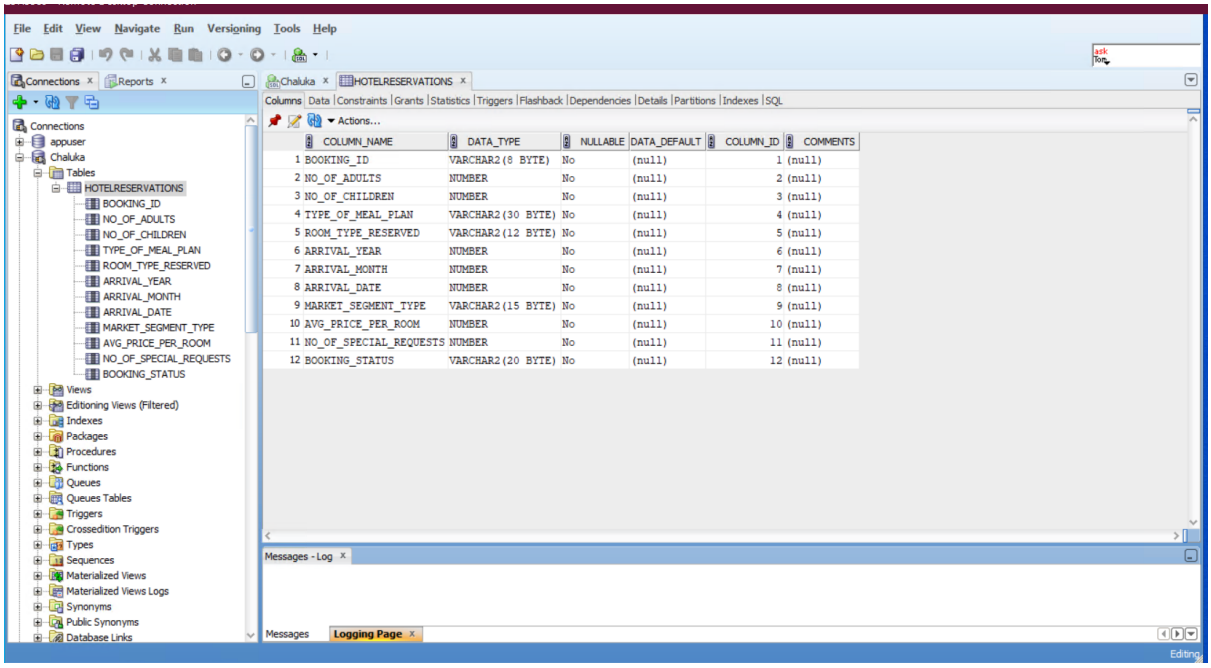

Figure D.3.3.Table created:

4) Load the HotelReservations data into the newly created table.

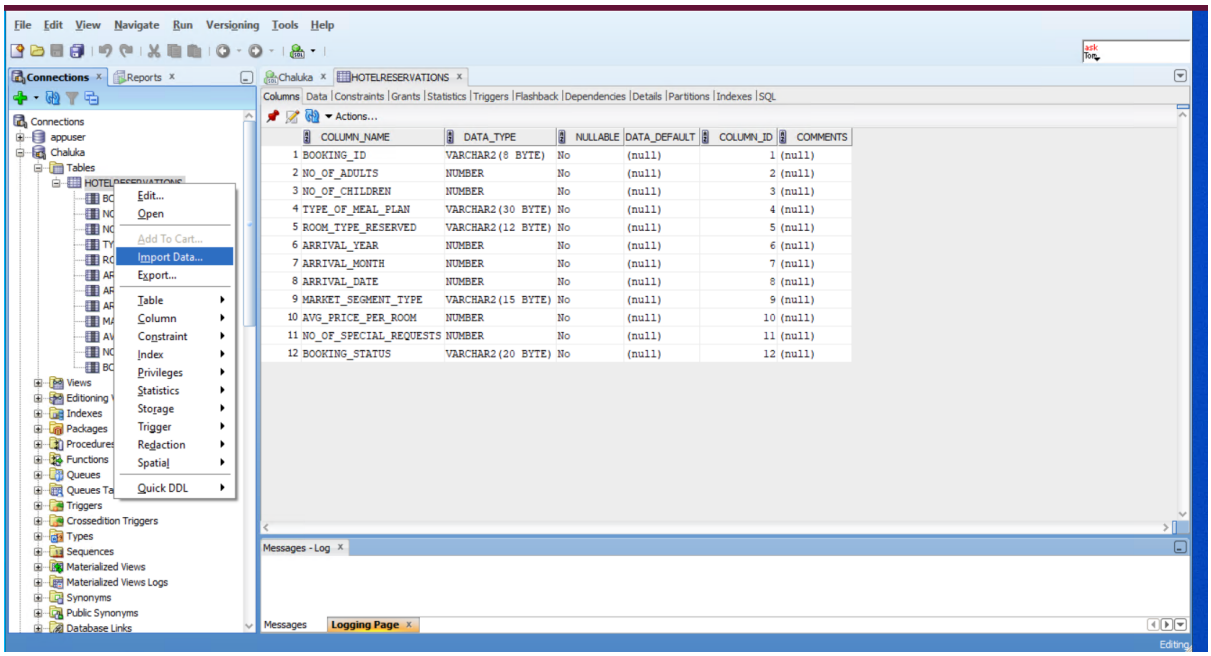

Figure D.4.1.Loading data step 1:

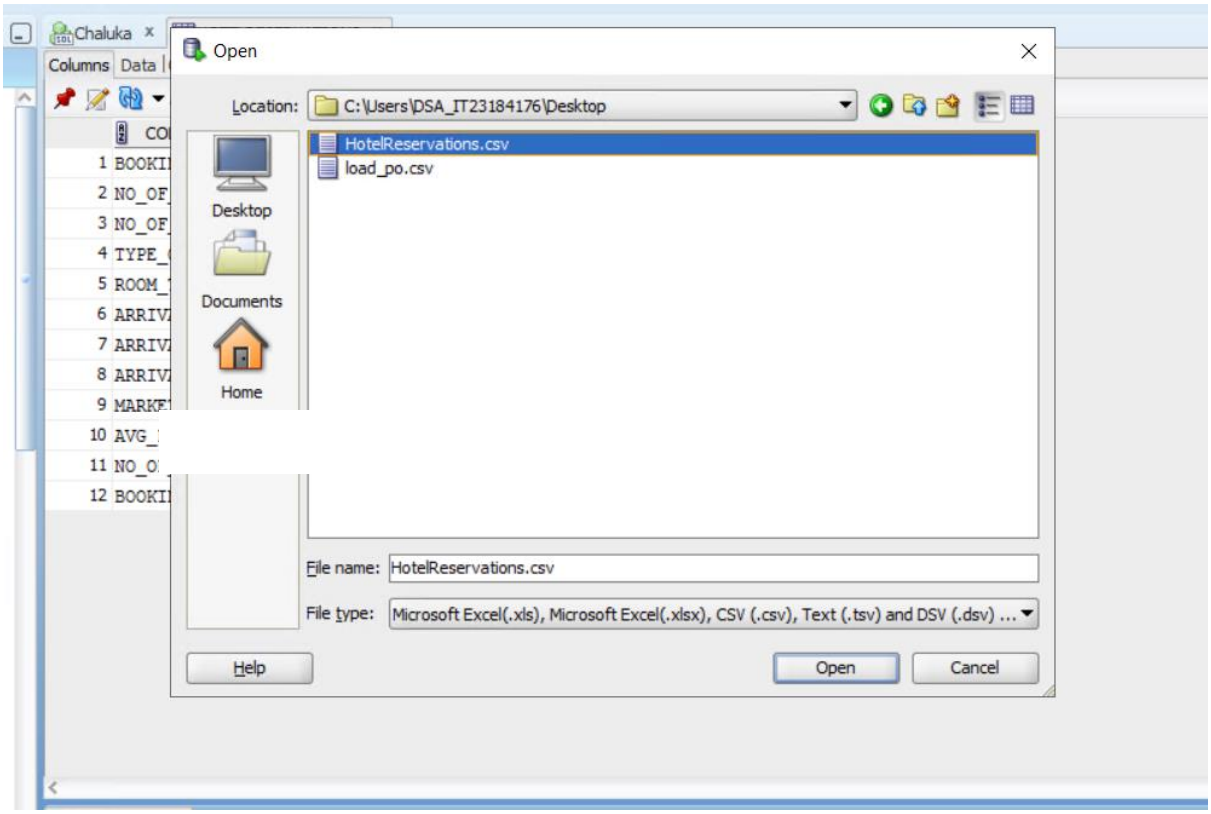

Figure D.4.2.loading data step 2:

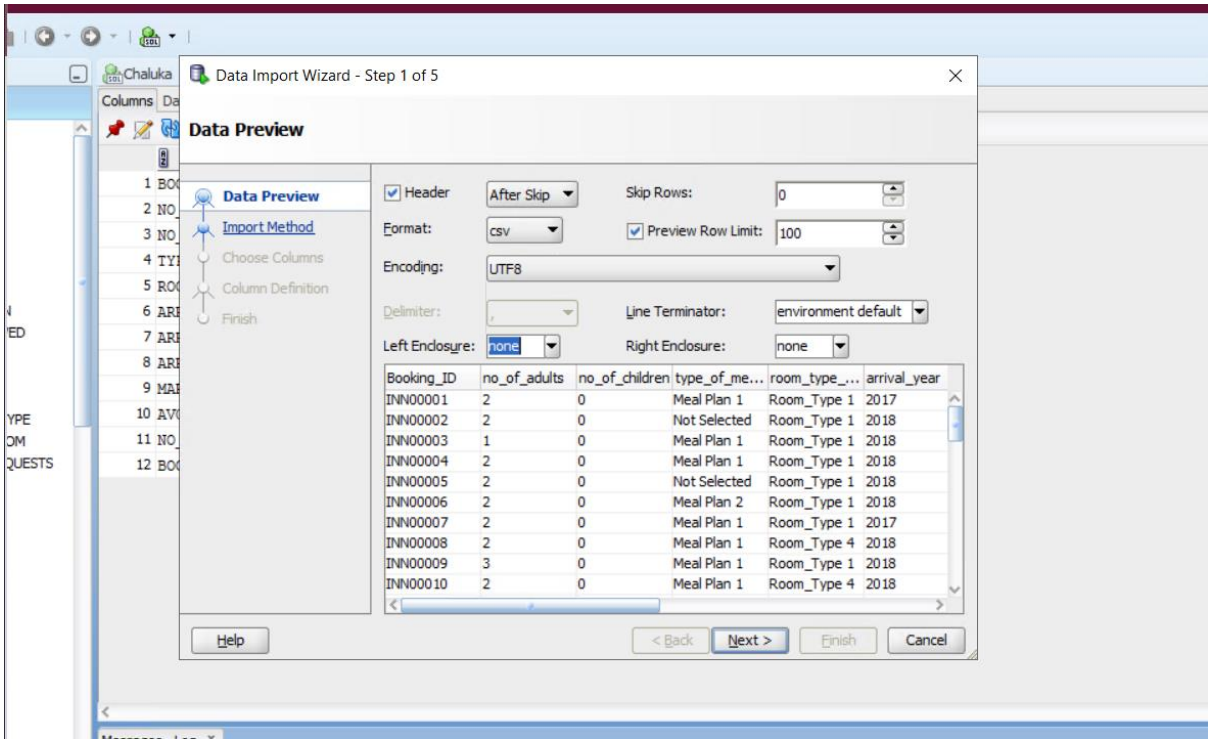

Figure D.4.3.Loading data step 3:

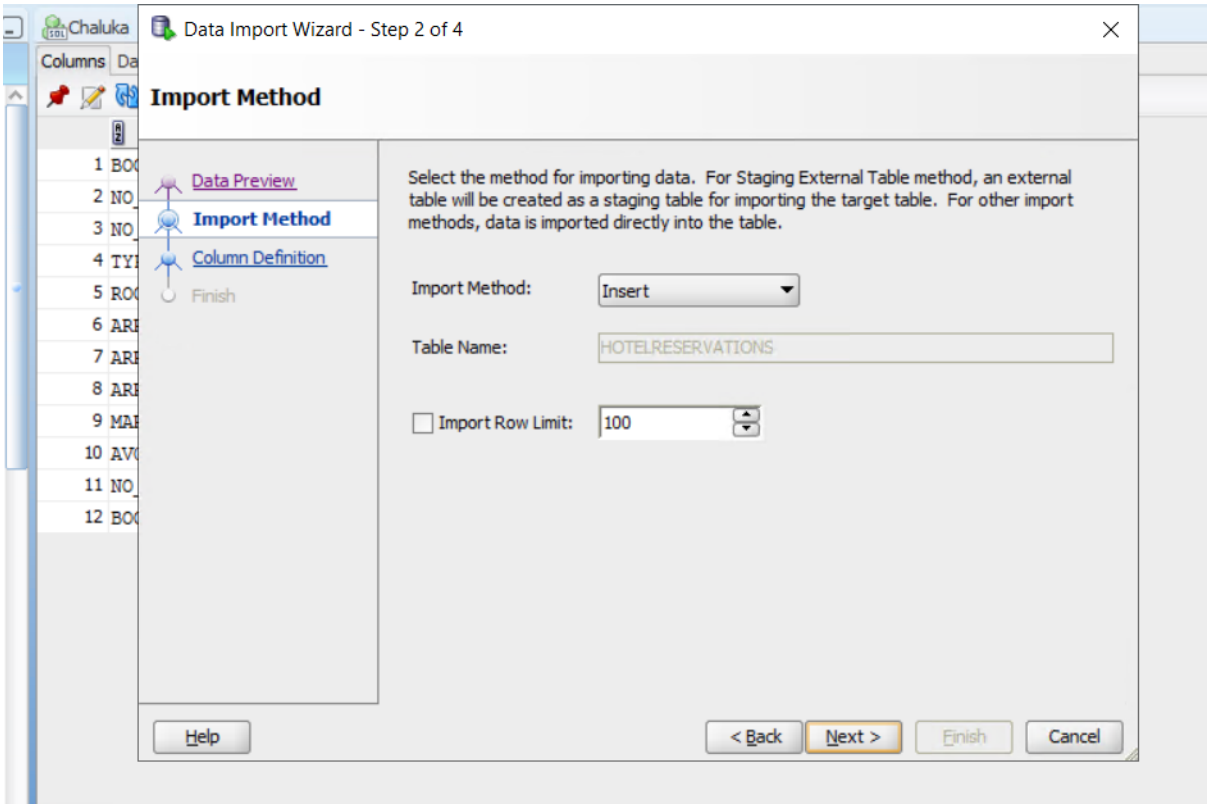

Figure D.4.4.Loading data step 4:

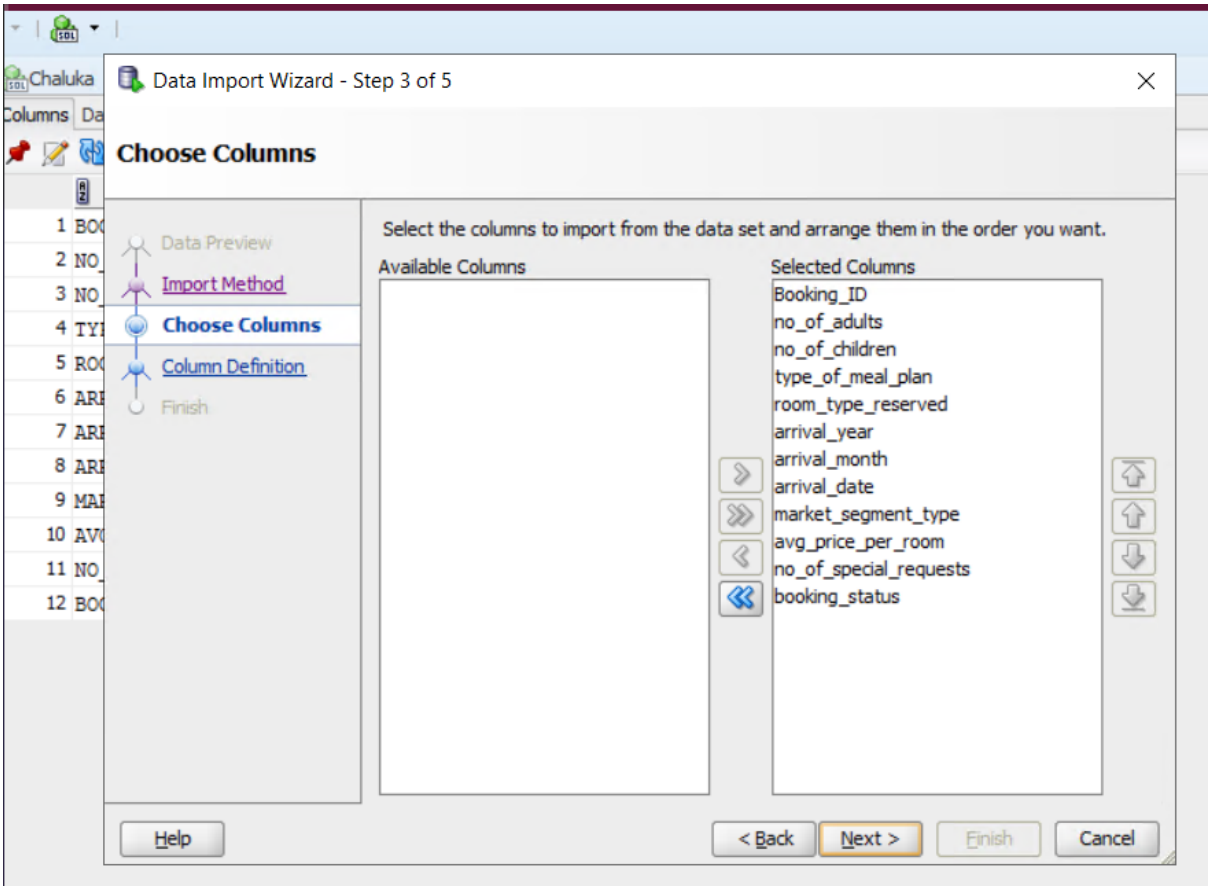

Figure D.4.5.Loading data step 5:

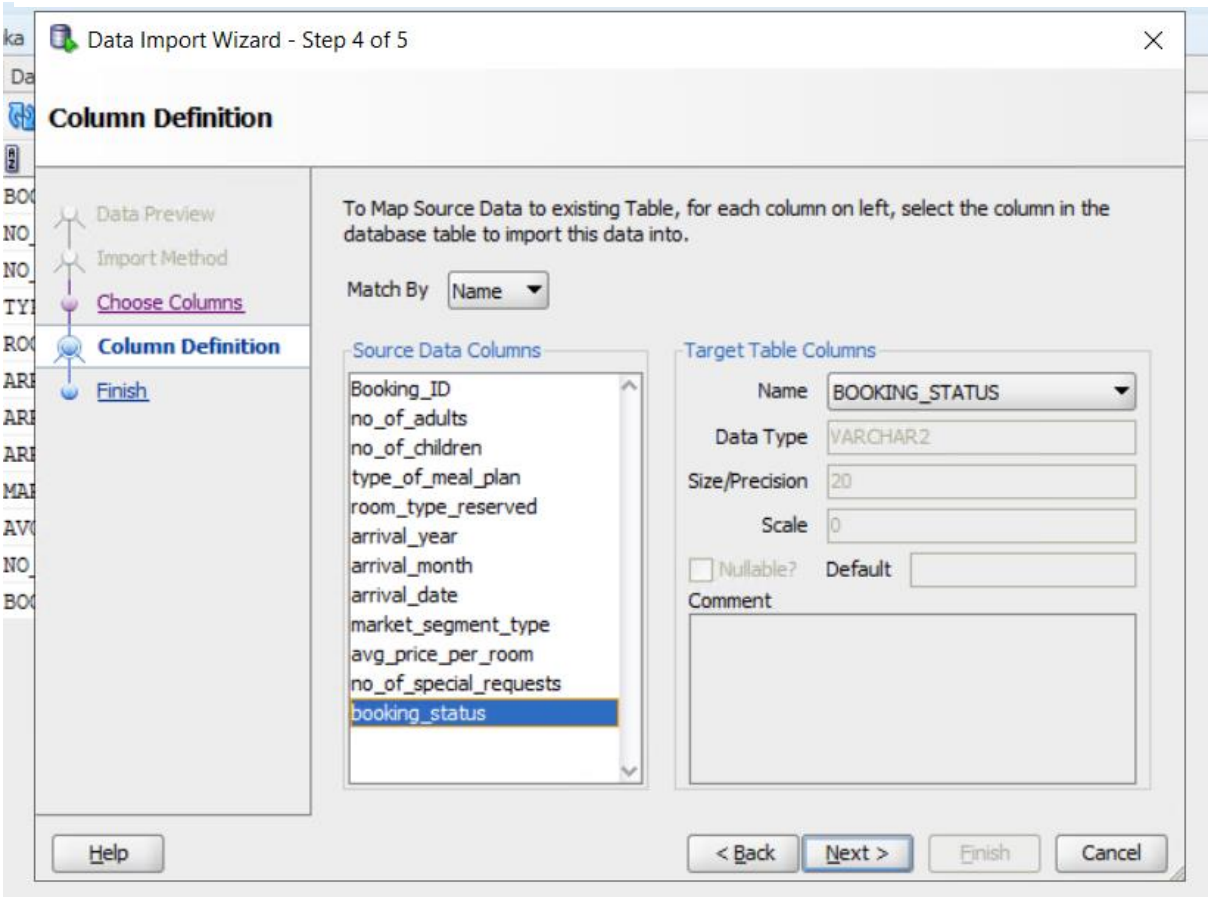

Figure D.4.6.Loading data step 6:

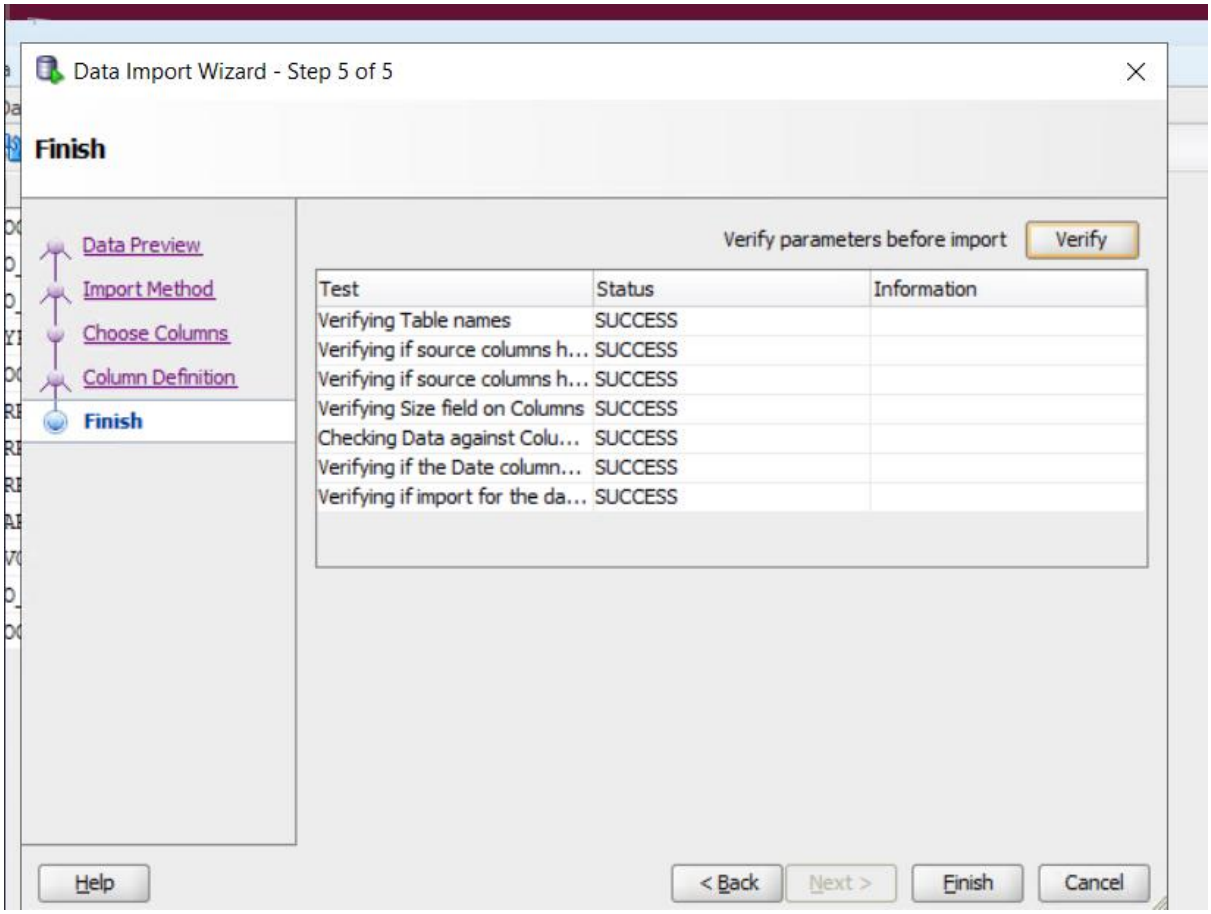

Figure D.4.5.Loading data step 7:

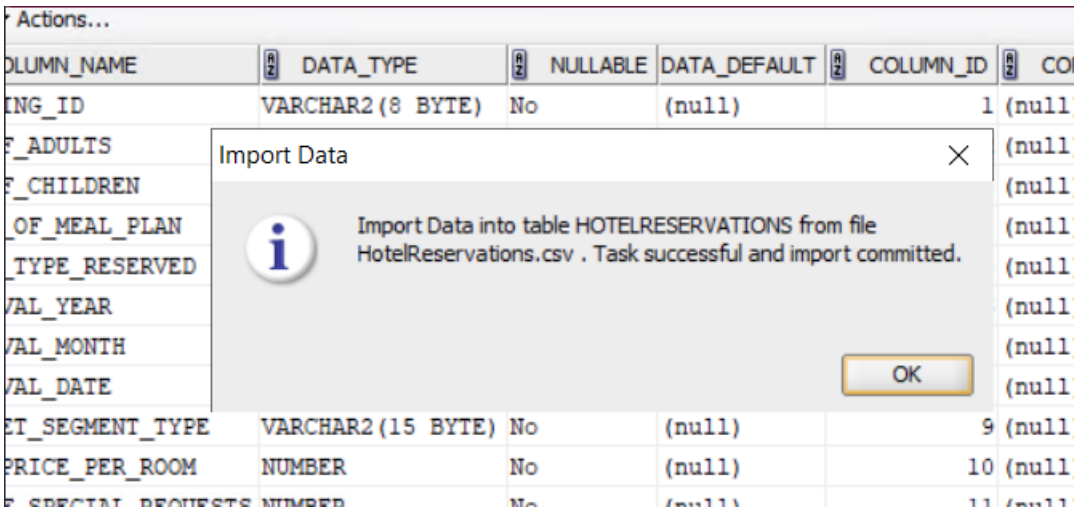

Figure D.4.6.Data imported successed:

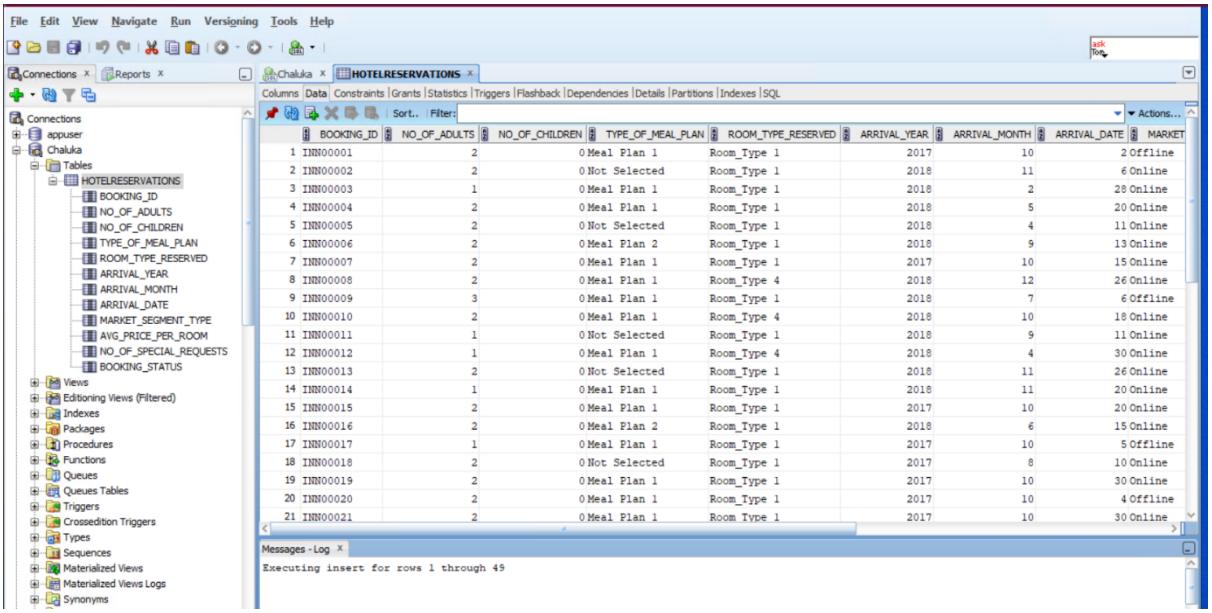

Figure D.4.7.Viewing loaded data:

5) Creating an index to the table based on the “avg_price_per_room” column in the data sheet.

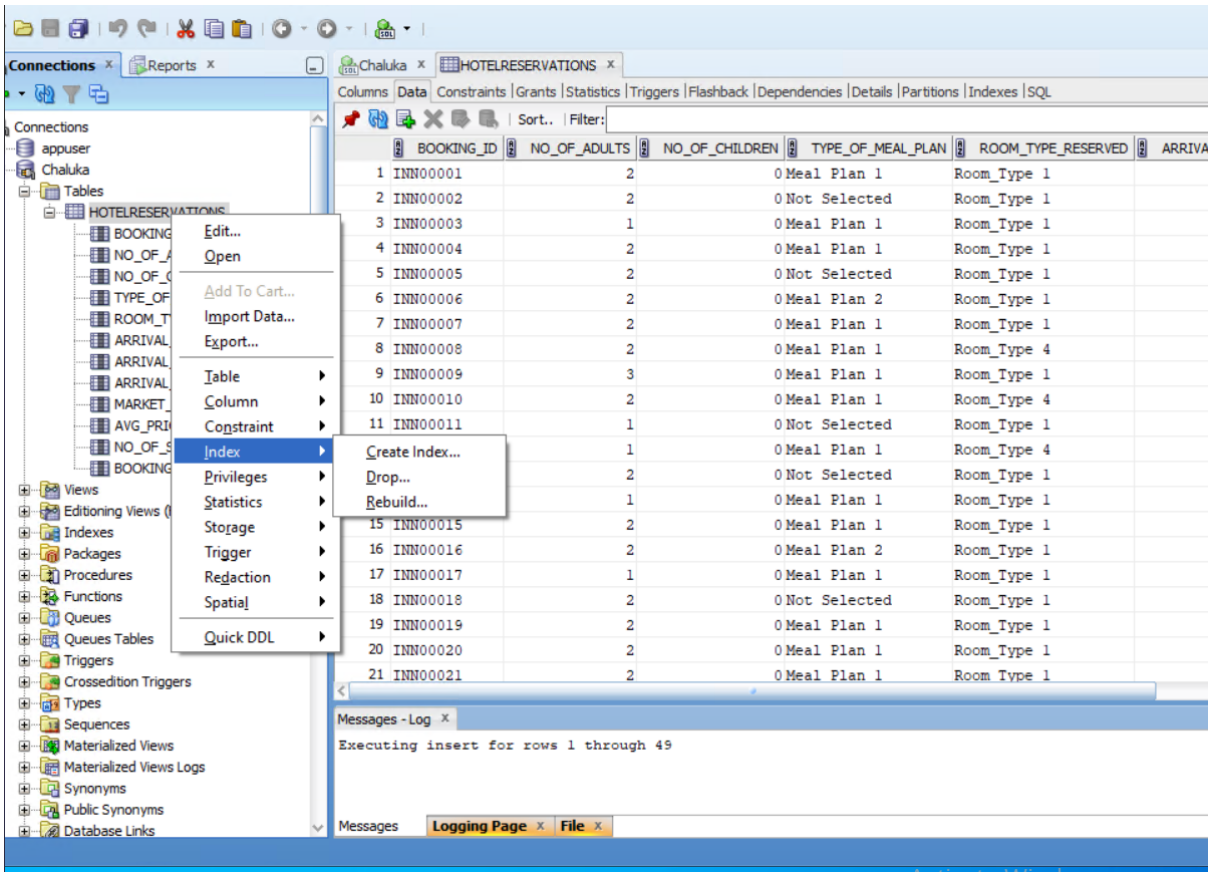

Figure D.5.1.Creating index step 1:

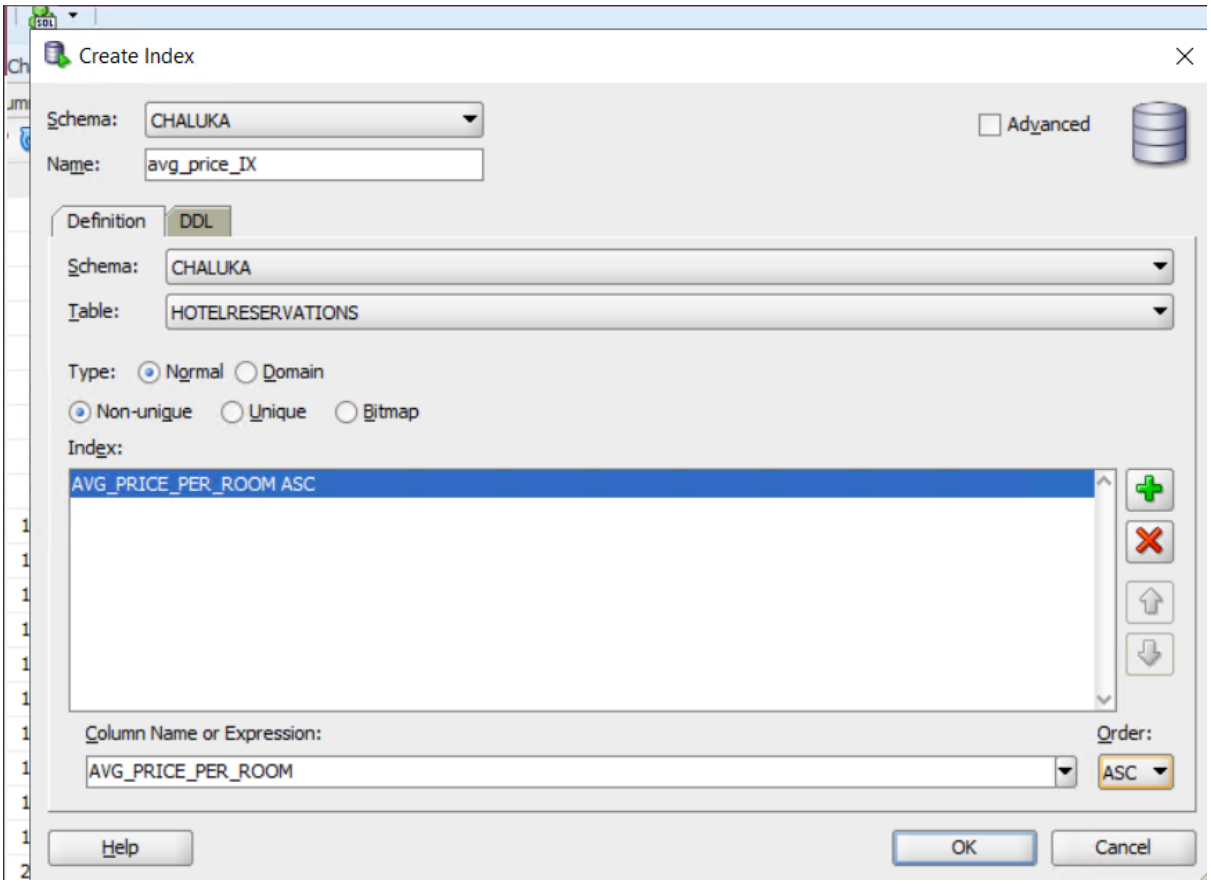

Figure D.5.2.Creating index step 2:

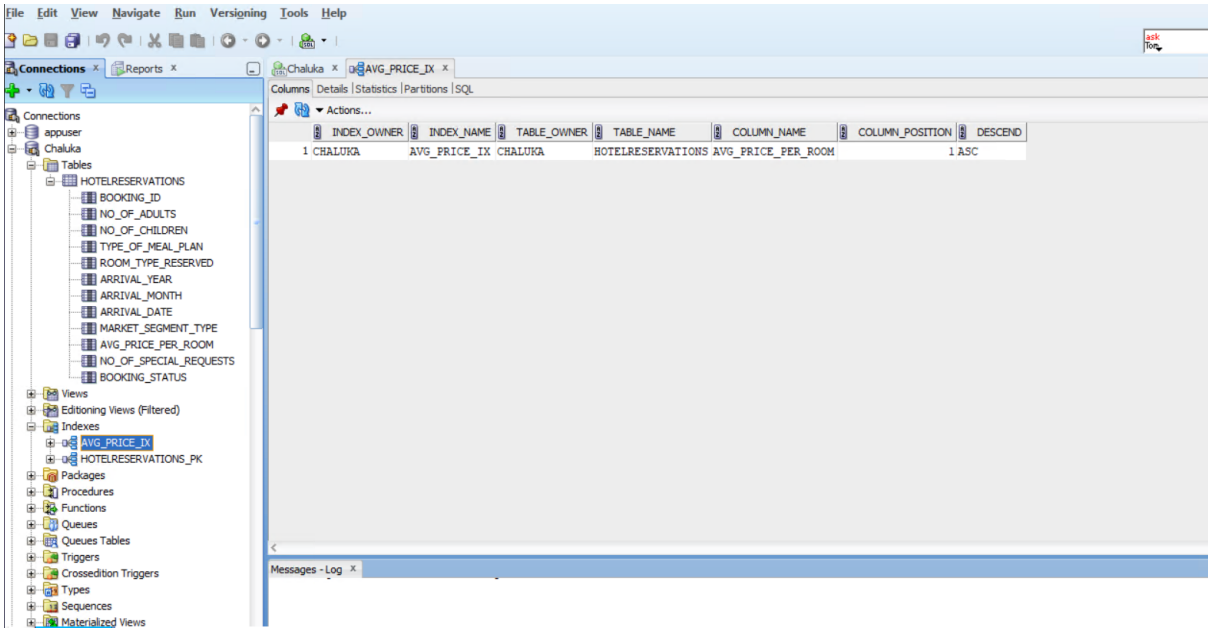

Figure D.5.3.Viewing created index:

Thank you!