

1. Connect to the database as user SYS and shutdown the database.

```
C:\Users\pc>sqlplus sys as sysdba

SQL*Plus: Release 11.2.0.2.0 Production on Wed Apr 2 23:57:31 2025

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

Enter password:

Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production

SQL>

SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> connect
Enter user-name: itclass as sysdba
Enter password:
Connected to an idle instance.
SQL> startup;
ORACLE instance started.

Total System Global Area 1068937216 bytes
Fixed Size 2260048 bytes
Variable Size 767558576 bytes
Database Buffers 293601280 bytes
Redo Buffers 5517312 bytes
Database mounted.
Database opened.
SQL> |
```

2. A) Shutdown the database and open it in read-only mode.

b) Connect as user and insert a row into the REGIONS table as follows:

What happens?

The operation of inserting data will be failed because the database is in read-only mode.

```
SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> alter database open read only;
alter database open read only
*
ERROR at line 1:
ORA-01034: ORACLE not available
Process ID: 9084
Session ID: 135 Serial number: 7

SQL> startup mount;
ORACLE instance started.

Total System Global Area 1068937216 bytes
Fixed Size                  2260048 bytes
Variable Size               767558576 bytes
Database Buffers            293601280 bytes
Redo Buffers                 5517312 bytes
Database mounted.
SQL> alter database open read only;

Database altered.

SQL>
```

c) Put the database back in read-write mode.

```
SQL> connect
Enter user-name: itclass
Enter password:
Connected.
SQL> insert into dept values (01, 'ALI', 'LAY');
insert into dept values (01, 'ALI', 'LAY')
*
ERROR at line 1:
ORA-16000: database open for read-only access

SQL>
```

```
Enter user-name: conn as sysdba
Enter password:
Connected.
SQL> SHUTDOWN IMMEDIATE;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> STARTUP MOUNT;
ORACLE instance started.

Total System Global Area 2550136752 bytes
Fixed Size                  9031600 bytes
Variable Size             553648128 bytes
Database Buffers          1979711488 bytes
Redo Buffers               7745536 bytes
Database mounted.
SQL> ALTER DATABASE OPEN;
Database altered.
```

- d) Connect as user and insert the following row into the table REGIONS; do not commit or exit.

Now the record will be inserted as the database is in read-write mode.

```
SQL> connect itclass
Enter password:
Connected.
SQL> insert into dept values (01, 'ALI', 'LAY');

1 row created.

SQL>
```

3. In a new telnet session start SQL*Plus. Connect as SYS AS SYSDBA. In another Session, connect as User. Insert one new row in any Table. After doing this, perform a shutdown transactional in system Session. You Notice that it is not performing an shutdown that time. To Shutdown it properly, you have to rollback your all transactions in User Session. When you perform it, check system session, it will automatically start shutdown

```
SQL> connect itclass
Enter password:
Connected.
SQL> insert into dept values (05, 'ALI', 'LHR');
1 row created.
SQL> |
```

USER SESSION

```
Microsoft Windows [Version 10.0.22631.5010]
(c) Microsoft Corporation. All rights reserved.

C:\Users\pc>sqlplus sys as sysdba

SQL*Plus: Release 11.2.0.2.0 Production on Fri Apr 4 20:22:27 2025

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

Enter password:
Connected to an idle instance.

SQL> connect sys as sysdba
Enter password:
Connected.
SQL> shutdown transactional
```

SYSTEM SESSION

**HERE, DATABASE IS NOT SHUTDOWN ,
Because we didn't rollback our transaction in
User Session**

```
SQL> connect itclass
Enter password:
Connected.
SQL> insert into dept values (06, 'ALI', 'LHR');
1 row created.
SQL> rollback
2 ;
Rollback complete.
SQL> |
```

**AS did Rollback in User session,
you can see in system session ,
Oracle Instances gets Shutdown**

```
(c) Microsoft Corporation. All rights reserved.

C:\Users\pc>sqlplus sys as sysdba

SQL*Plus: Release 11.2.0.2.0 Production on Fri Apr 4 20:22:27 2025

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

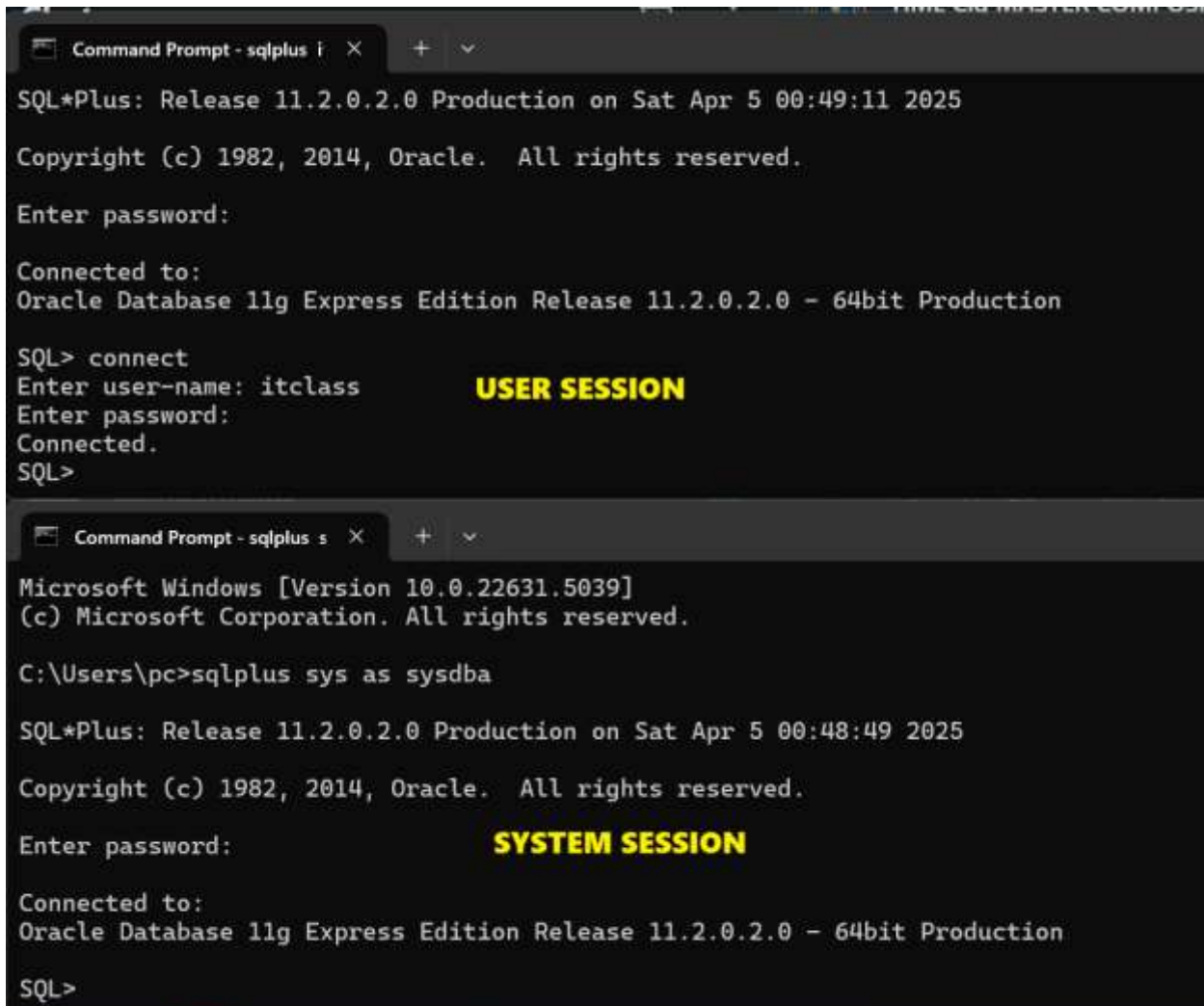
Enter password:
Connected to an idle instance.

SQL> connect sys as sysdba
Enter password:
Connected.
SQL> shutdown transactional
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> |
```

4. As user SYS start the database.

Start another session as user Session.

Two SQL*Plus sessions are open, one session as user SYS Session and one as user ITCLASS Session.



```
Command Prompt - sqlplus i X + v
SQL*Plus: Release 11.2.0.2.0 Production on Sat Apr 5 00:49:11 2025
Copyright (c) 1982, 2014, Oracle. All rights reserved.
Enter password:
Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production

SQL> connect
Enter user-name: itclass          USER SESSION
Enter password:
Connected.
SQL>

Command Prompt - sqlplus s X + v
Microsoft Windows [Version 10.0.22631.5039]
(c) Microsoft Corporation. All rights reserved.

C:\Users\pc>sqlplus sys as sysdba

SQL*Plus: Release 11.2.0.2.0 Production on Sat Apr 5 00:48:49 2025
Copyright (c) 1982, 2014, Oracle. All rights reserved.
Enter password:          SYSTEM SESSION
Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production

SQL>
```

(b) As user SYS Session enable restricted session.

```

Command Prompt - sqlplus s
SQL*Plus: Release 11.2.0.2.0 Production on Sat Apr 5 00:48:49 2025
Copyright (c) 1982, 2014, Oracle. All rights reserved.
Enter password:
Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production
SQL> alter system enable restricted session;
System altered.
SQL>

```

RESTRICTED SESSION:

Currently, we are login User session also, so after doing restricted session in system we can perform any task in user session but after exiting from User Session, and try to access anything that time, We can not perform any action. To Access anything, we have to disable restricted session

```

Command Prompt - sqlplus i
SQL> connect
Enter user-name: itclass
Enter password:
Connected.
SQL> select * from dept;

DEPTNO DNAME          LOC
-----
1 ALI
10 ACCOUNTING        NEW YORK
20 RESEARCH           DALLAS
30 SALES              CHICAGO
40 OPERATIONS         BOSTON

SQL>

```

ACCESSING DATA IN USER SESSION BEACUSE USER SESSION Don't EXIT YET, WHEN Do Restricted Session

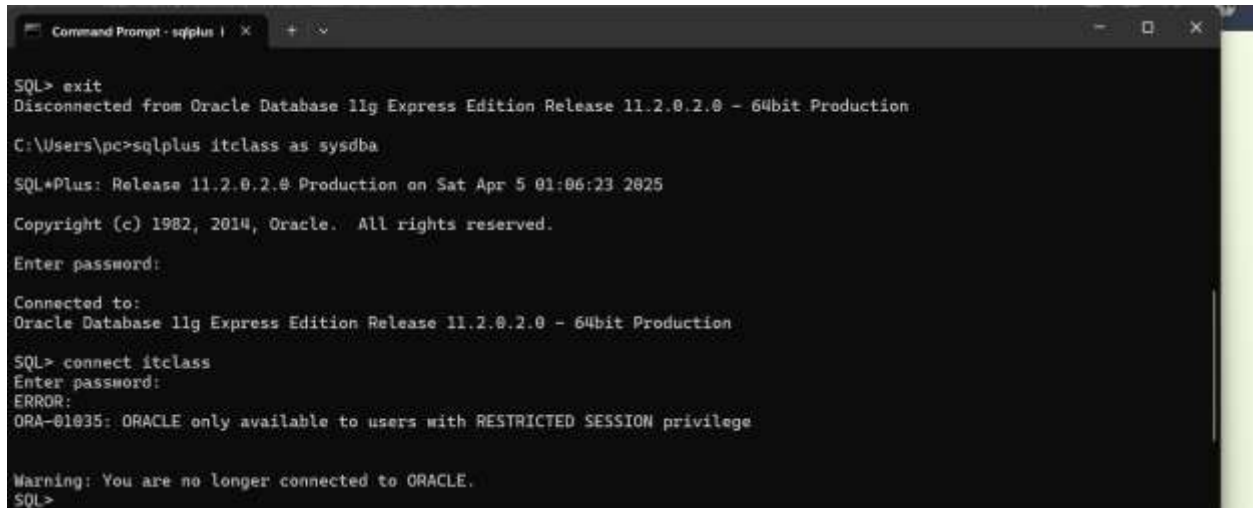
```

Command Prompt - sqlplus s
Copyright (c) 1982, 2014, Oracle. All rights reserved.
Enter password:
Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production
SQL> alter system enable restricted session;
System altered.
SQL>

```

(c) As user, SELECT any table. Is the SELECT successful? Exit the session, then reconnect as User. What happens?

We can access the data because the User session was started before enabling the RESTRICTED Session. If we exit and try to reconnect as User then we will be unable to access user account because of



```
Command Prompt - sqlplus | x + -
SQL> exit
Disconnected from Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production
C:\Users\pc>sqlplus itclass as sysdba
SQL*Plus: Release 11.2.0.2.0 Production on Sat Apr 5 01:06:23 2025
Copyright (c) 1982, 2014, Oracle. All rights reserved.
Enter password:
Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - 64bit Production
SQL> connect itclass
Enter password:
ERROR:
ORA-01035: ORACLE only available to users with RESTRICTED SESSION privilege
Warning: You are no longer connected to ORACLE.
SQL>
```

Restricted Session.

It will show the following error:

(d) As user SYS disable restricted session.


```
SQL> connect itclass
Enter password:
ERROR:
ORA-01035: ORACLE only available to users with RESTRICTED SESSION privilege
```

Warning: You are no longer connected to ORACLE.

```
SQL> connect itclass
Enter password:
Connected.
SQL> select * from dept;
```

DEPTNO	DNAME	LOC
1	ALI	LAY
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

```
SQL> |
```

Command Prompt - sqlplus : X

```
*
ERROR at line 1:
ORA-02065: illegal option for ALTER SYSTEM
```

```
SQL> alter system disable restricted session;
```

System altered.

```
SQL>
```

After disabling RESTRICTED SESSION, we can access User account: