

Instance

Mag. Thomas Griesmayer

Instance

- A database instance is a set of memory structures that manage database files.
- A database is a set of physical files on disk created by the CREATE DATABASE statement.
- The instance manages its associated data and serves the users of the database.
- Every running Oracle database is associated with at least one Oracle database instance.

Oracle installation

Instance development

SGA (memory)

Oracle processes (CPU)

Database

Files (harddisk)

Instance production

SGA (memory)

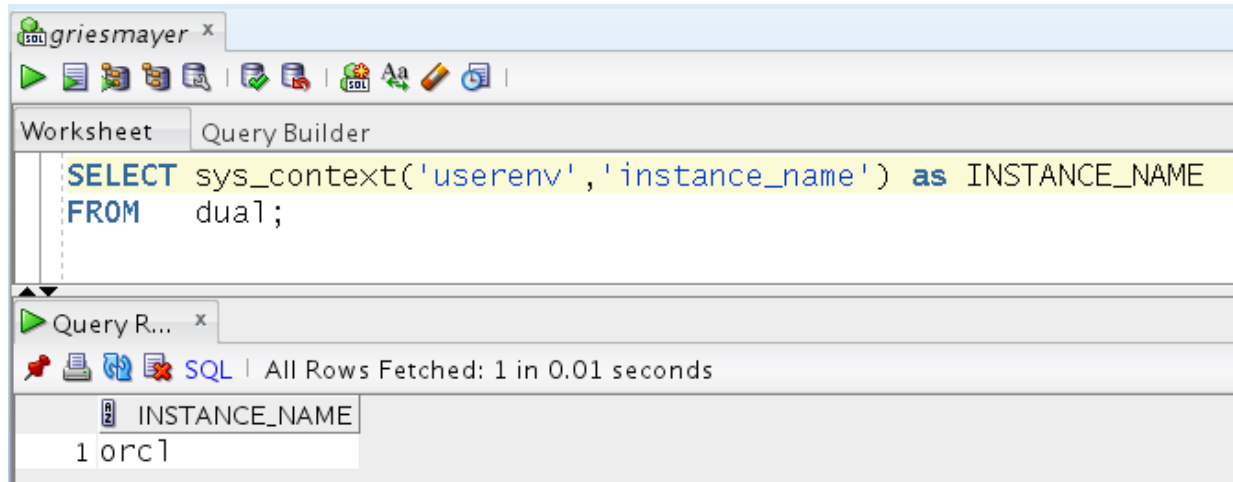
Oracle processes (CPU)

Database

Files (harddisk)

- The SID (Oracle System ID) uniquely identify a particular instance on a system.

```
$ echo $ORACLE_SID  
orcl
```



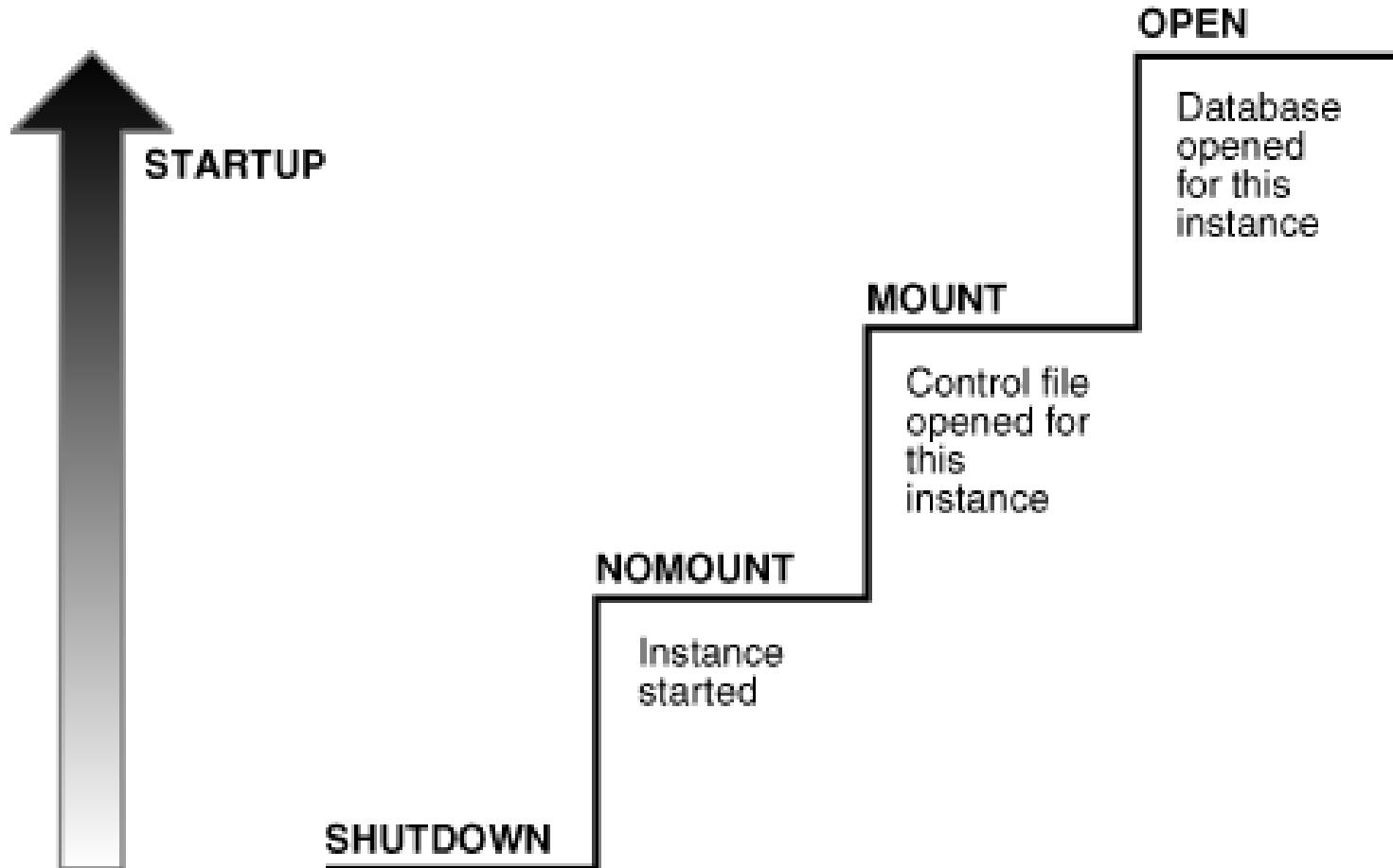
The screenshot shows the Oracle SQL Developer interface. The main window is titled "griesmayer" and contains a "Worksheet" tab. The query editor displays the following SQL statement:

```
SELECT sys_context('userenv','instance_name') as INSTANCE_NAME  
FROM dual;
```

Below the query editor, the "Query Results" window is visible, showing the execution status: "All Rows Fetched: 1 in 0.01 seconds". The results are displayed in a table with one row and one column:

INSTANCE_NAME
1 orcl

STARTUP/SHUTDOWN



<https://docs.oracle.com/database/121/CNCPT/startup.htm#CNCPT602> (2.10.2018)

Mag. Thomas Griesmayer

STARTUP/SHUTDOWN

Database Behavior	ABORT	IMMEDIATE	TRANSACTIONAL	NORMAL
Permits new user connections	NO	NO	NO	NO
Waits until current sessions end	NO	NO	NO	YES
Waits until current transactions end	NO	NO	YES	YES
Performs a checkpoint and closes open files	NO	YES	YES	YES

```
CREATE TABLE GRIESMAYER_CUSTOMER
(
  CUSTOMER_ID INTEGER PRIMARY KEY,
  BALANCE      DECIMAL(10,2)
);
INSERT INTO GRIESMAYER_CUSTOMER VALUES(1, 100);
INSERT INTO GRIESMAYER_CUSTOMER VALUES(2, 150);
INSERT INTO GRIESMAYER_CUSTOMER VALUES(3, 300);
COMMIT;

UPDATE GRIESMAYER_CUSTOMER
SET    BALANCE = 200
WHERE  CUSTOMER_ID = 2;

SELECT XID
FROM    V$TRANSACTION;
03001A006F250000
```

```
$ sqlplus sys/oracle as sysdba
```

```
Connected to:
```

```
Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 -  
Production
```

```
SQL> SELECT STARTUP_TIME  
2 FROM V$INSTANCE;
```

```
STARTUP_T  
-----  
02-OCT-18
```

```
SQL> SHUTDOWN TRANSACTIONAL;
```


SYS GRIESMAYER

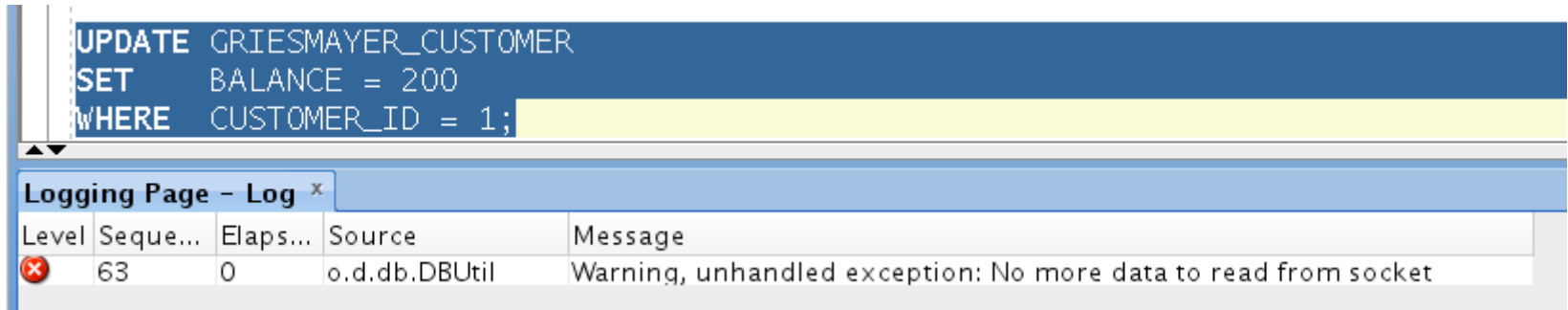
COMMIT;

SQL> SHUTDOWN TRANSACTIONAL;

Database closed.

Database dismounted.

ORACLE instance shut down.



```
UPDATE GRIESMAYER_CUSTOMER
SET    BALANCE = 200
WHERE  CUSTOMER_ID = 1;
```

Logging Page - Log x

Level	Seque...	Elaps...	Source	Message
⊗	63	0	o.d.db.DBUtil	Warning, unhandled exception: No more data to read from socket

```
SQL> STARTUP;  
ORACLE instance started.
```

```
Total System Global Area 456146944 bytes  
Fixed Size                 1344840 bytes  
Variable Size             369101496 bytes  
Database Buffers         79691776 bytes  
Redo Buffers              6008832 bytes
```

```
Database mounted.  
Database opened.
```