

# Transaction

Mag. Thomas Griesmayer

# Transaction

- At the beginning of a transaction the user has a consistent view of the database.
- A new transaction is assigned with the first DML (data manipulation language), DDL (data definition statement) or the SET TRANSACTION statement.
- Every transaction receives a unique TRANSACTION ID.
- A transaction consists of multiple SQL statements.
- A transaction ends with commit (changes are applied to the database) or rollback (changes are undone from the database).
- At the end of a transaction the user has a consistent view of the database.

# Transaction

```
SELECT *  
FROM ACCOUNTS;
```

Consistent view of the database



```
UPDATE ACCOUNTS  
SET AMOUNT=AMOUNT-100  
WHERE ACCOUNT_ID=2;
```

Starts a new transaction



```
INSERT INTO ACCOUNTS VALUES(5, 'Hans', 0);
```

```
DELETE FROM ACCOUNTS  
WHERE ACCOUNT_ID=4;
```

```
SELECT *  
FROM ACCOUNTS;
```

Ends the transaction

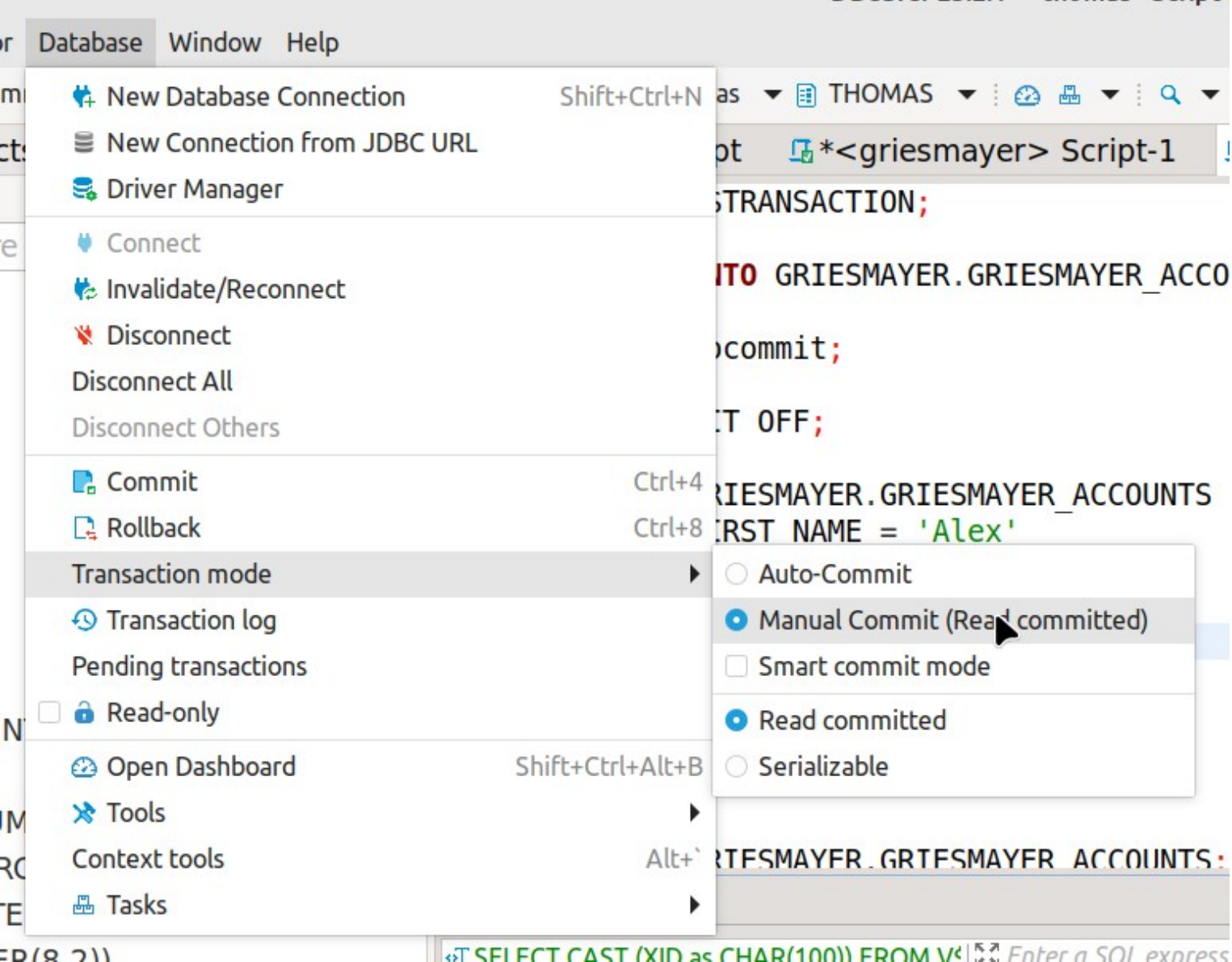


```
COMMIT;
```

Consistent view of the database



# DBeaver



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

```
XID: DGF41Q
```

```
COMMIT;
```



Oracle

ID	NAME	AMOUNT
1	Marion	400
2	Franz	700
3	Andrea	-200
4	Verena	900
5	Susi	0

ID	NAME	AMOUNT
5	Susi	0
1	Marion	400
2	Franz	700

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

XID: **D789XQ**

```
ROLLBACK;
```

Oracle

ID	NAME	AMOUNT
1	Marion	400
3	Andrea	-200
4	Verena	900
5	Susi	0



ID	NAME	AMOUNT
5	Susi	0
1	Marion	400
5	Susi	0

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

XID: **7HHW7**

```
COMMIT;
```

Oracle

ID	NAME	AMOUNT
1	Marion	600
3	Andrea	-200
4	Verena	900
5	Susi	0



ID	NAME	AMOUNT
1	Marion	600

# Read committed

- The read committed isolation level is the Oracle default isolation level.
- Every query executed by a transaction sees only data committed before the query began.



# Create user

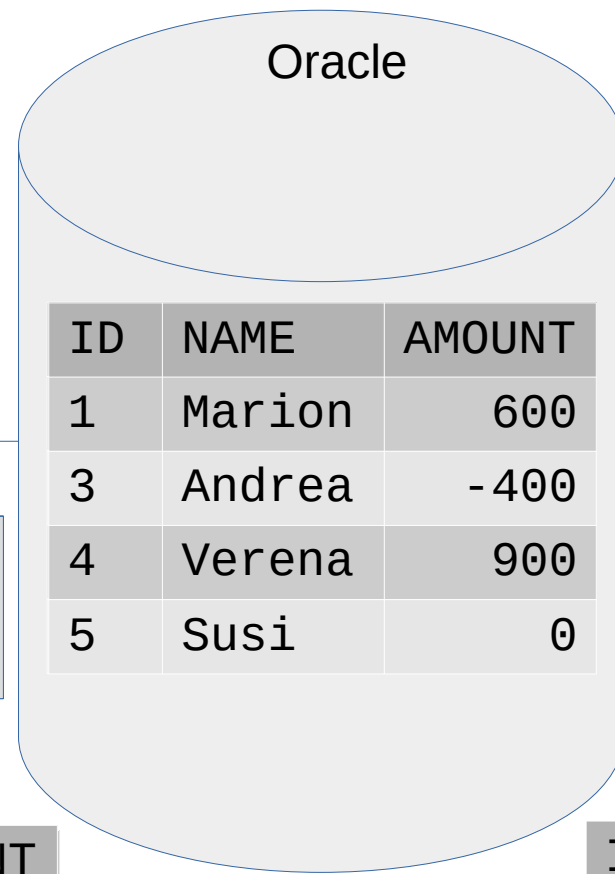
```
CREATE USER GRIESMAYER PROFILE "DEFAULT" IDENTIFIED BY "oracle"  
DEFAULT TABLESPACE USERS  
TEMPORARY TABLESPACE TEMP  
ACCOUNT UNLOCK;
```

```
GRANT SELECT ANY DICTIONARY TO GRIESMAYER;  
GRANT UNLIMITED TABLESPACE TO GRIESMAYER;  
GRANT CONNECT TO GRIESMAYER;  
GRANT RESOURCE TO GRIESMAYER;
```

```
GRANT SELECT ON DEMO.GRIESMAYER_ACCOUNTS TO GRIESMAYER;  
GRANT DELETE ON DEMO.GRIESMAYER_ACCOUNTS TO GRIESMAYER;  
GRANT INSERT ON DEMO.GRIESMAYER_ACCOUNTS TO GRIESMAYER;  
GRANT UPDATE ON DEMO.GRIESMAYER_ACCOUNTS TO GRIESMAYER;
```

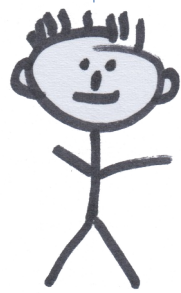
ID	NAME	AMOUNT
5	Susi	-200

ID	NAME	AMOUNT
3	Andrea	-400



ROLLBACK

COMMIT



ID	NAME	AMOUNT
3	Andrea	-400

XID: **7HHW7**

ID	NAME	AMOUNT
3	Andrea	-400

XID: **AAABBB**

