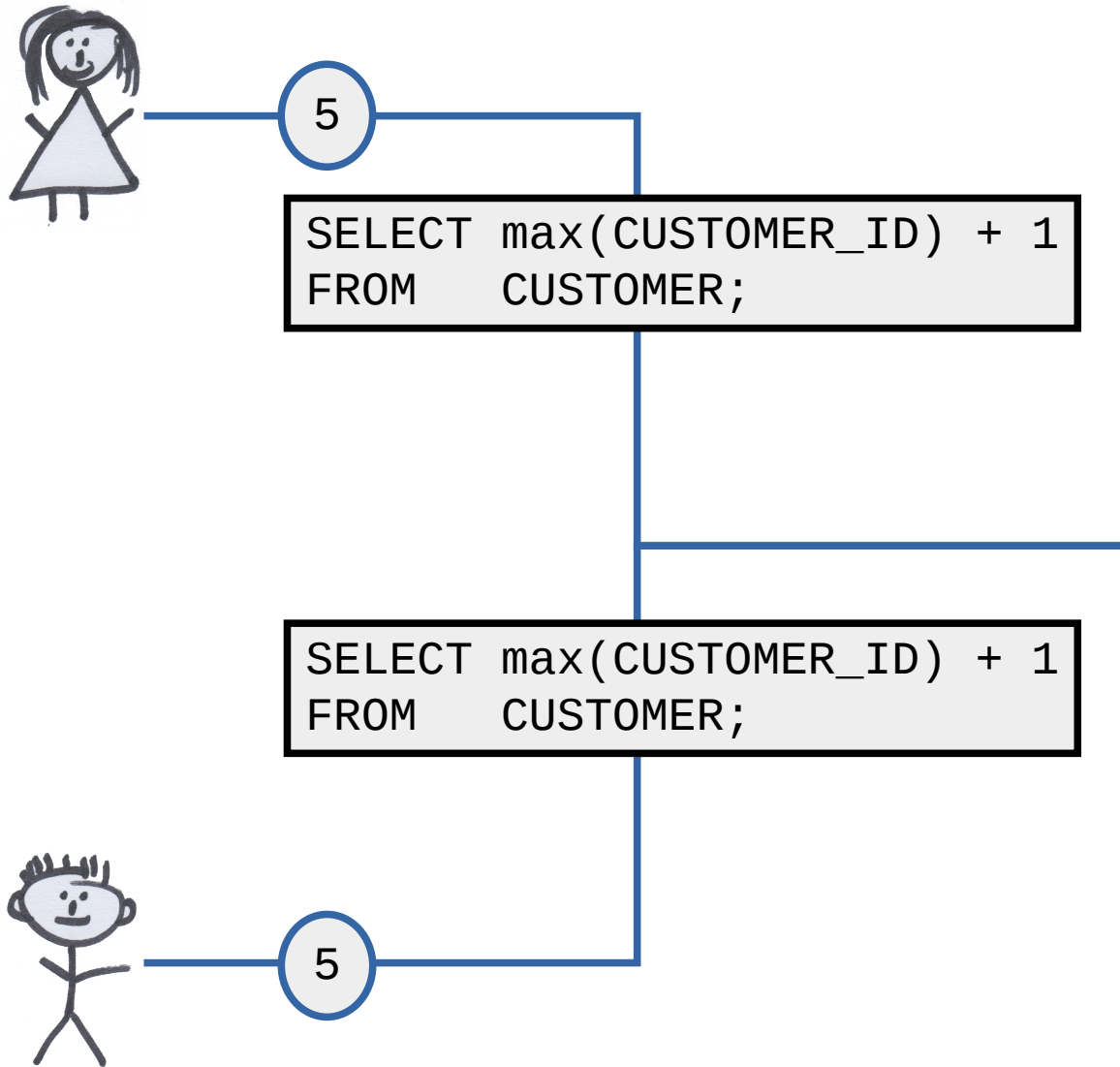


Sequence

Mag. Thomas Griesmayer

Local primary key



CUSTOMER		
CUSTOMER_ID	NAME	AMOUNT
1	Thomas	0
2	Andrea	600
3	Verena	200
4	Marion	100

Local primary key



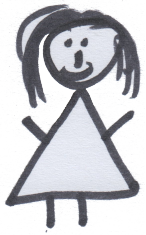
5

```
INSERT INTO CUSTOMER  
VALUES (5, 'Max', 400);  
COMMIT;
```

CUSTOMER		
CUSTOMER_ID	NAME	AMOUNT
1	Thomas	0
2	Andrea	600
3	Verena	200
4	Marion	100
5	Max	400



5



5

Local primary key

CUSTOMER		
CUSTOMER_ID	NAME	AMOUNT
1	Thomas	0
2	Andrea	600
3	Verena	200
4	Marion	100
5	Max	400

```
INSERT INTO CUSTOMER
VALUES (5, 'Susi', 1000);
COMMIT;
```

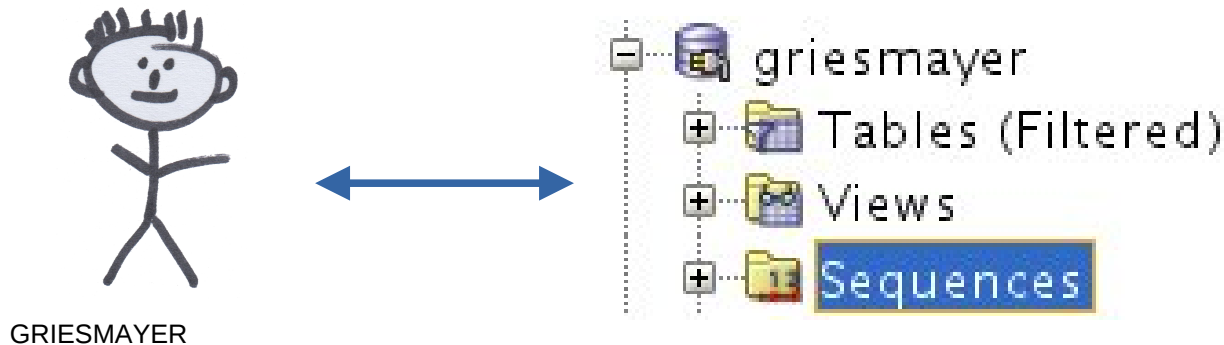
SQL Error: ORA-00001: unique constraint violated
***Cause: An UPDATE or INSERT statement attempted to insert a duplicate key.**



5

Sequence

- Use the **CREATE SEQUENCE** statement to create a sequence, which is a database object from which multiple users may generate unique integers.
- You can use sequences to automatically generate primary key values.



Create sequence

```
CREATE SEQUENCE SEQ_CUSTOMER_ID
  START WITH      1000
  INCREMENT BY    1
  CACHE           20;
COMMIT;

SELECT SEQ_CUSTOMER_ID.nextval
FROM   DUAL;

INSERT INTO CUSTOMER
VALUES (SEQ_CUSTOMER_ID.nextval, 'Max', 400);

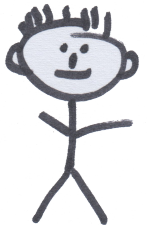
INSERT INTO CUSTOMER
VALUES (SEQ_CUSTOMER_ID.nextval, 'Susi', 1000);
```

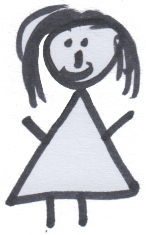
Use a sequence



```
INSERT INTO CUSTOMER VALUES (  
    SEQ_CUSTOMER_ID.nextval,  
    'Max', 400);  
COMMIT;
```

CUSTOMER		
CUSTOMER_ID	NAME	AMOUNT
1	Thomas	0
2	Andrea	600
3	Verena	200
4	Marion	100
5	Max	400





Use a sequence

CUSTOMER		
CUSTOMER_ID	NAME	AMOUNT
1	Thomas	0
2	Andrea	600
3	Verena	200
4	Marion	100
5	Max	400
6	Susi	1000

```
INSERT INTO CUSTOMER VALUES (  
    SEQ_CUSTOMER_ID.nextval,  
    'Susi', 1000);  
COMMIT;
```



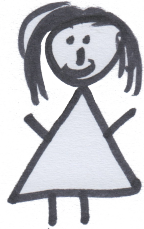
Sequence

The screenshot shows the SQL Enterprise Manager interface. On the left, the 'Connections' pane shows a tree view with 'griesmayer' selected, and 'Sequences' expanded to show 'SEQ_CUSTOMER_ID'. The main pane shows the 'Details' tab for this sequence, displaying a table of properties and their values.

Name	Value
1 CREATED	08-OCT-18
2 LAST_DDL_TIME	08-OCT-18
3 SEQUENCE_OWNER	GRIESMAYER
4 SEQUENCE_NAME	SEQ_CUSTOMER_ID
5 MIN_VALUE	1
6 MAX_VALUE	99999999999999999999999999999999
7 INCREMENT_BY	1
8 CYCLE_FLAG	N
9 ORDER_FLAG	N
10 CACHE_SIZE	20
11 LAST_NUMBER	1000

```
INSERT INTO CUSTOMER VALUES  
(SEQ_CUSTOMER_ID.nextval, ...);
```

```
INSERT INTO CUSTOMER VALUES  
(SEQ_CUSTOMER_ID.nextval, ...);
```



```
INSERT INTO CUSTOMER VALUES  
(SEQ_CUSTOMER_ID.nextval, ...);
```

```
INSERT INTO CUSTOMER VALUES  
(SEQ_CUSTOMER_ID.nextval, ...);
```

	ACCOUNT_ID	FIRST_NAME	BIRTH_DATE	AMOUNT
1	1001	Andera	20-AUG-75	100
2	1002	Kurt	28-FEB-75	800.4
3	1021	Andera	20-AUG-75	100
4	1022	Marion	12-DEC-81	-200
5	1023	Verena	27-JAN-77	900
6	1025	Kurt	19-SEP-89	0

IDENTITY

```
CREATE TABLE CUSTOMER
(
    CUSTOMER_ID NUMBER GENERATED ALWAYS as
                    IDENTITY(START with 1 INCREMENT by 1),
    NAME          VARCHAR2(10),
    AMOUNT        DECIMAL(10,2)
);
```