

# Uni DB1 Syntax Cheatsheet

Syntax cheatsheet for the DB1 (databases) course at HdM Stuttgart

---

Felicitas Pojtinger

2022-02-01

*“Come, let us go down and confuse their language so they will not understand each other” - Genesis 11:7, Die Bibel*

Mehr Details unter <https://github.com/pojntfx/uni-db1-notes>.  
Dieses Dokument ist nur als Schnell-Übersicht gedacht.

# Data Definition Language

---

```
create table persons (  
    person_id number primary key not null ,  
    first_name varchar2(50) ,  
    last_name varchar2(50) default 'Duck' not null  
);
```

```
drop table persons;
```

# Tabelle umbenennen

```
alter table persons rename to people;
```

## Spalten hinzufügen

```
alter table persons add ( phone varchar2(20), email
```

```
alter table persons modify ( birthdate date null, e
```



```
alter table persons drop column birthdate;
```

## Constraints hinzufügen

```
alter table purchase_orders add constraint purchase_
```

```
alter table purchase_orders drop constraint purchas
```

```
create view employees_years_of_service
as select
    employee_id, first_name || ' ' || last_name as
    floor(months_between(current_date, hire_date) /
from employees;
```

```
drop view employees_years_of_service;
```

```
create index members_full_name on members(first_name
```

```
drop index members_full_name;
```

## Trigger erstellen

```
create trigger customers_credit_trigger
  before update of credit_limit
  on customers
declare
  current_day number;
begin
  current_day := extract(day from sysdate);

  if current_day between 28 and 31 then
    raise_application_error(-20100, 'Locked at ');
  end if;
end;
```



```
drop trigger customers_credit_trigger;
```

## Exceptions handle

```
create trigger users_ensure_trigger
before update
on users
for each row
declare
    user_invalid exception;
pragma exception_init(user_invalid, -20555);
begin
    raise user_invalid;

exception
    when user_invalid then
        raise_application_error(-20555, 'User_i
    when others then
        dbms_output.put_line('Unexpected_error17:
```

```
create or replace function get_my_sum( a integer , b  
is  
    multiplier number := 2;  
begin  
    return a + b * multiplier;  
end;
```

```
select get_my_sum(1, 2) from dual;
```

```
drop function get_my_sum;
```

## Procedure erstellen

```
create or replace procedure get_sum ( a integer , b  
is  
    multiplier number := 2;  
    result number := 0;  
begin  
    result := a + b * multiplier;  
  
    insert into results ( result ) values ( res  
end;
```

## Procedure callen

```
exec get_sum(1, 2);
```

```
drop procedure get_sum;
```



# Data Manipulation Language

---

- CHAR|CHARACTER (size)
- VARCHAR2 (size)
- DATE
- INTERVAL YEAR TO MONTH
- INTERVAL DAY TO SECOND
- INTEGER|INT
- NUMBER (precision [, scale ])
- FLOAT (precision)

```
insert into discounts(  
    discount_name ,  
    amount ,  
    start_date ,  
    expired_date  
) values (  
    'Summer_Promotion ' ,  
    9.5 ,  
    date '2017-05-01 ' ,  
    date '2017-08-31 '  
)
```

# Update

```
update products  
set list_price = 420  
where list_price < 69;
```

```
delete from products  
where list_price > 69;
```

# Unions

Gleiche Anzahl von Spalten, mehr Zeilen.

```
select
    first_name ,
    last_name ,
    email ,
    'contact' as role
from contacts
union select
    first_name ,
    last_name ,
    email ,
    'employee' as role
from employees order by role
```

Mehr Spalten & mehr Zeilen

## Inner Join

```
select
    a.id as id_a ,
    a.color as color_a ,
    b.id as id_b ,
    b.color as color_b
from palette_a a
inner join palette_b b using(color);
```



## Left Outer Join

```
select
    a.id as id_a ,
    a.color as color_a ,
    b.id as id_b ,
    b.color as color_b
from palette_a a
left outer join palette_b b using(color);
```

## Right Outer Join

```
select
    a.id as id_a,
    a.color as color_a,
    b.id as id_b, b.color as color_b
from palette_a a
right outer join palette_b b using(color);
```

## Full Outer Join

```
select
    a.id as id_a ,
    a.color as color_a ,
    b.id as id_b ,
    b.color as color_b
from palette_a a
full outer join palette_b b using(color);
```

## Insert-Trigger

:old ist nicht vorhanden.

```
create or replace trigger customers_credit_trigger
  before insert of credit_limit
  on customers
declare
  current_day number;
begin
  current_day := extract(day from sysdate);

  if current_day between 28 and 31 then
    raise_application_error(-20100, 'Locked at ');
  end if;
end;
```

## Update-Trigger

```
create or replace trigger customers_credit_limit_tr  
  before update of credit_limit  
  on customers  
  for each row  
  when (new.credit_limit > 0)  
begin  
    if :new.credit_limit >= 2*:old.credit_limit then  
      raise_application_error(-20101, 'The new cr  
    end if;  
end;
```

## Delete-Trigger

:new ist nicht vorhanden.

```
create or replace trigger customers_audit_trigger
  after delete
  on customers
  for each row
declare
    transaction_type varchar2(10);
begin
    transaction_type := case
      when updating then 'update'
      when deleting then 'delete'
    end;

    insert into audits(
      table_name,
```

## Instead-Of-Trigger

```
create or replace trigger create_customer_trigger
  instead of insert on customers_and_contacts
  for each row
declare
    current_customer_id number;
begin
    insert into customers(
        name,
        address,
        website,
        credit_limit
    ) values (
        :new.name,
        :new.address,
        :new.website,
```

*menhir*

Wenn einem der Syntax schon nicht kompliziert genug ist, dann darf man *vor* das declare-Statement eines Triggers auch noch folgendes sinnloses Konstrukt packen und statt `:new :neu` schreiben:

```
referencing new as neu old as alt
```

Danach hat man auch fünf Zeilen. Und fünf Hirnzellen weniger.

Wo wir schon dabei sind: Ist der sonst universelle Negations-Operator `!=` zu einfach? Zu simpel und zu verständlich? Wie wäre es mit `<>`; macht das genau selbe, ist aber komplizierter™!