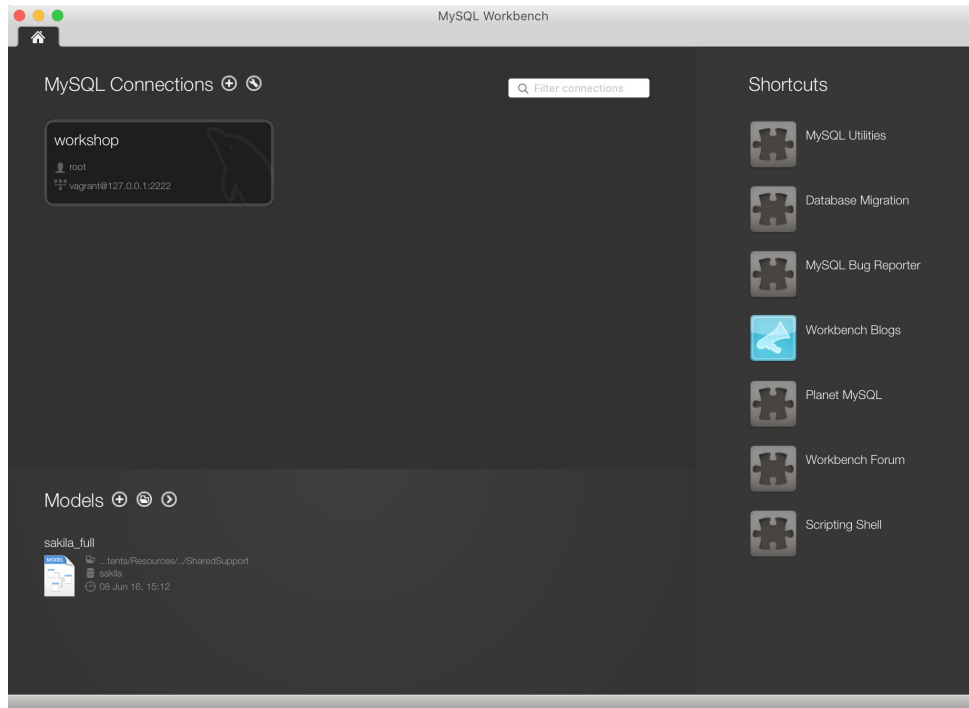
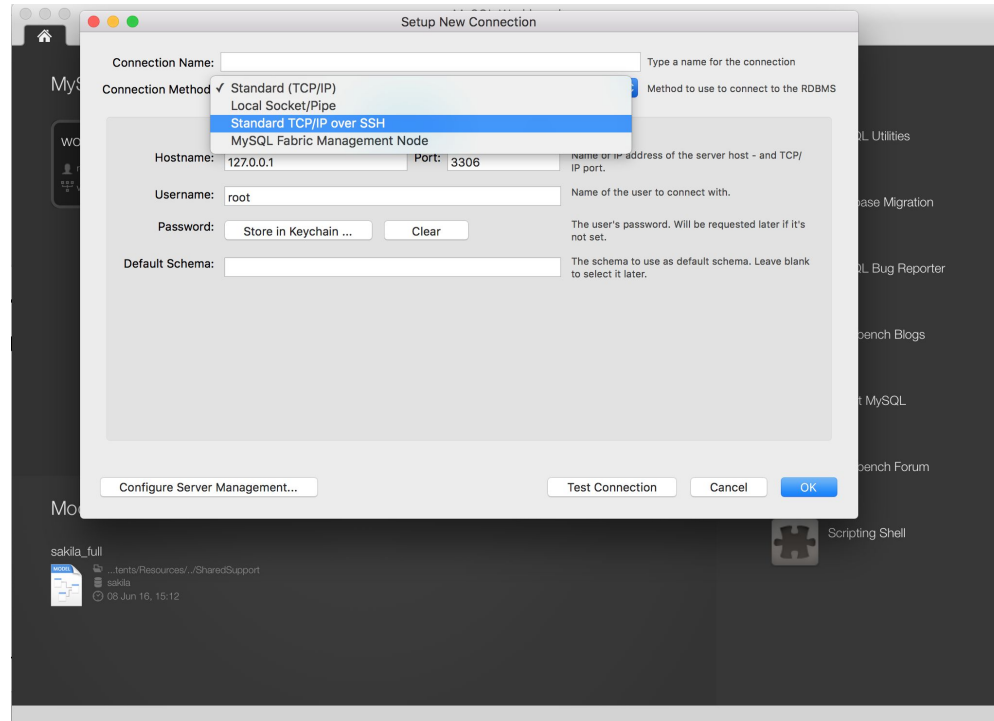

Relationele databanken met MySQL

deel 1

Opzet MySQL Workbench



Opzet MySQL Workbench



Opzet MySQL Workbench

Manage Server Connections

MySQL Connections

workshop

Connection Name: workshop

Connection Method: Standard TCP/IP over SSH Method to use to connect to the RDBMS

Parameters SSL Advanced

SSH Hostname: 127.0.0.1:2222 SSH server hostname, with optional port

SSH Username: vagrant Name of the SSH user to connect with.

SSH Password: Store in Keychain ... Clear SSH user password to connect to the SSH

SSH Key File: ... Path to SSH private key file.

MySQL Hostname: 127.0.0.1 MySQL server host relative to the SSH se

MySQL Server Port: 3306 TCP/IP port of the MySQL server.

Username: root Name of the user to connect with.

Password: Store in Keychain ... Clear The MySQL user's password. Will be requ later if not set.

Default Schema: The schema to use as default schema. Le to select it later.

New Delete Duplicate Move Up Move Down Test Connection Close

Passwords:
ssh: vagrant
mysql: root

Wat is een relationele database?


- Digitaal Archief van opgeslagen data
 - Collectie van schema's/tables/views/...
 - Data is gestructureerd
 - Data is adhv relaties niet redundant
 - Data is consistent
-

Eerste database


```
CREATE DATABASE workshop_mysql;
```

```
SHOW DATABASES;
```

```
USE workshop_mysql;
```

Result Grid		 Filter Rows
Database		
▶	information_schema	
	mysql	
	performance_schema	
	workshop_mysql	

Eerste Table

```
 create table person(  
    id int auto_increment unique primary key,  
    first_name varchar(256),  
    last_name varchar(256),  
    email varchar(256) unique  
);|
```

CRUD Operaties

- Create
 - Read
 - Update
 - Delete
-

Create

```
insert into person (first_name, last_name, email)
values ('Jerre', 'Nouws', 'jerre@pau.be');
```

Read

```
select * from person  
where first_name = 'Jerre';
```

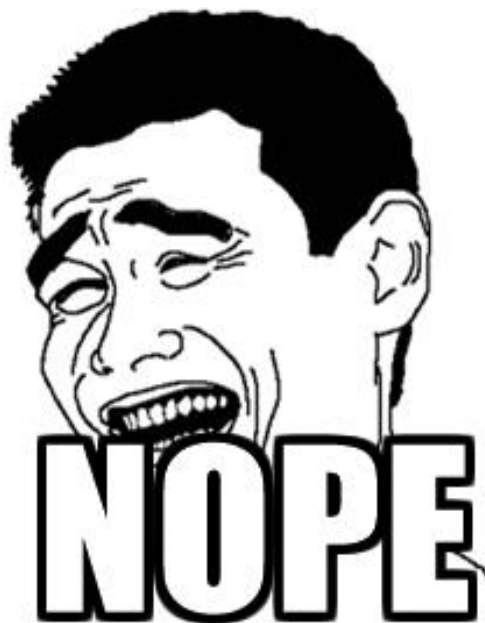
	id	first_name	last_name	email
▶	1	Jerre	Nouws	jerre@pau.be
	NULL	NULL	NULL	NULL

Update

```
update person  
set email='guy@pau.be'  
where id = 1;
```

id	first_name	last_name	email
1	Jerre	Nouws	guy@pau.be
NULL	NULL	NULL	NULL

Sorry...



memegenerator.net

Delete

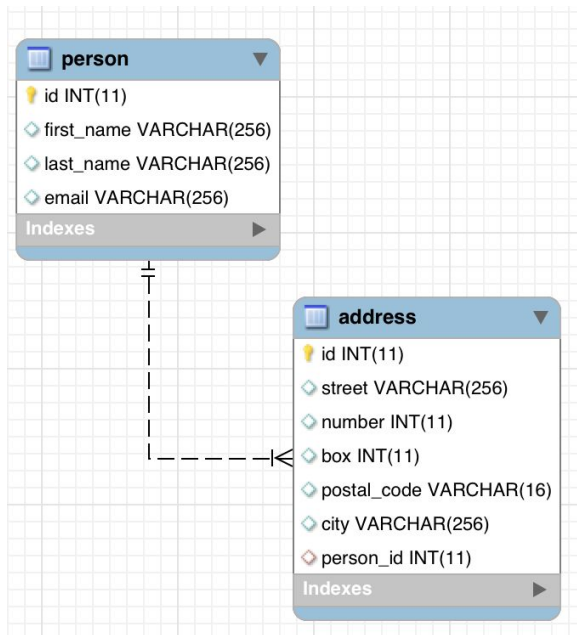
```
delete from person  
where id = 1;
```

	id	first_name	last_name	email
▶	NULL	NULL	NULL	NULL

Relaties

```
create table address(  
    id int auto_increment primary key,  
    street varchar(256),  
    number int,  
    box int,  
    postal_code varchar(16),  
    city varchar(256),  
    person_id int,  
    constraint foreign key(person_id) references person(id)  
);
```

Relaties



Constraint

- Zorgt ervoor dat de link tussen de tables niet zomaar verwijderd kan worden.
 - Parent table kan niet verwijderd worden als de child table nog bestaat
-

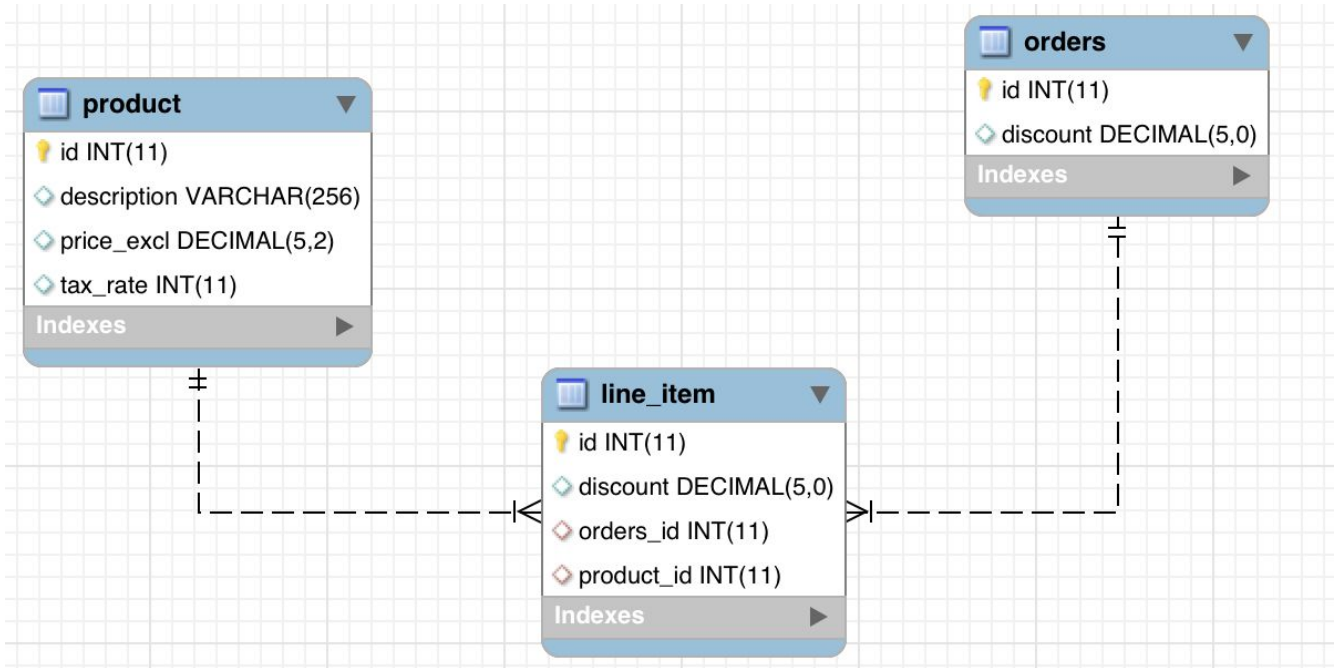
Relaties, relaties, relaties,...

```
create table product(  
    id int auto_increment primary key,  
    description varchar(256),  
    price_excl decimal(5,2),  
    tax_rate int  
);
```

```
create table orders(  
    id int auto_increment primary key,  
    discount decimal(5,2)  
);
```

```
create table line_item(  
    id int auto_increment primary key,  
    discount decimal(5,2),  
    orders_id int,  
    product_id int,  
  
    constraint foreign key(orders_id) references orders(id),  
    constraint foreign key(product_id) references product(id)  
);
```

Relaties, relaties, relaties,...



Normalisatie

- Redudantie tegengaan
 - Tot 5 levels
 - meest gebruikte vorm => 3de normaalvorm
-

Table wijzigen

```
alter table address  
add isShippingAddress tinyint;
```

```
alter table orders  
add person_id int;
```

```
alter table orders  
add constraint fk_persons foreign key(person_id) references person(id);
```

Data consistentie afdwingen

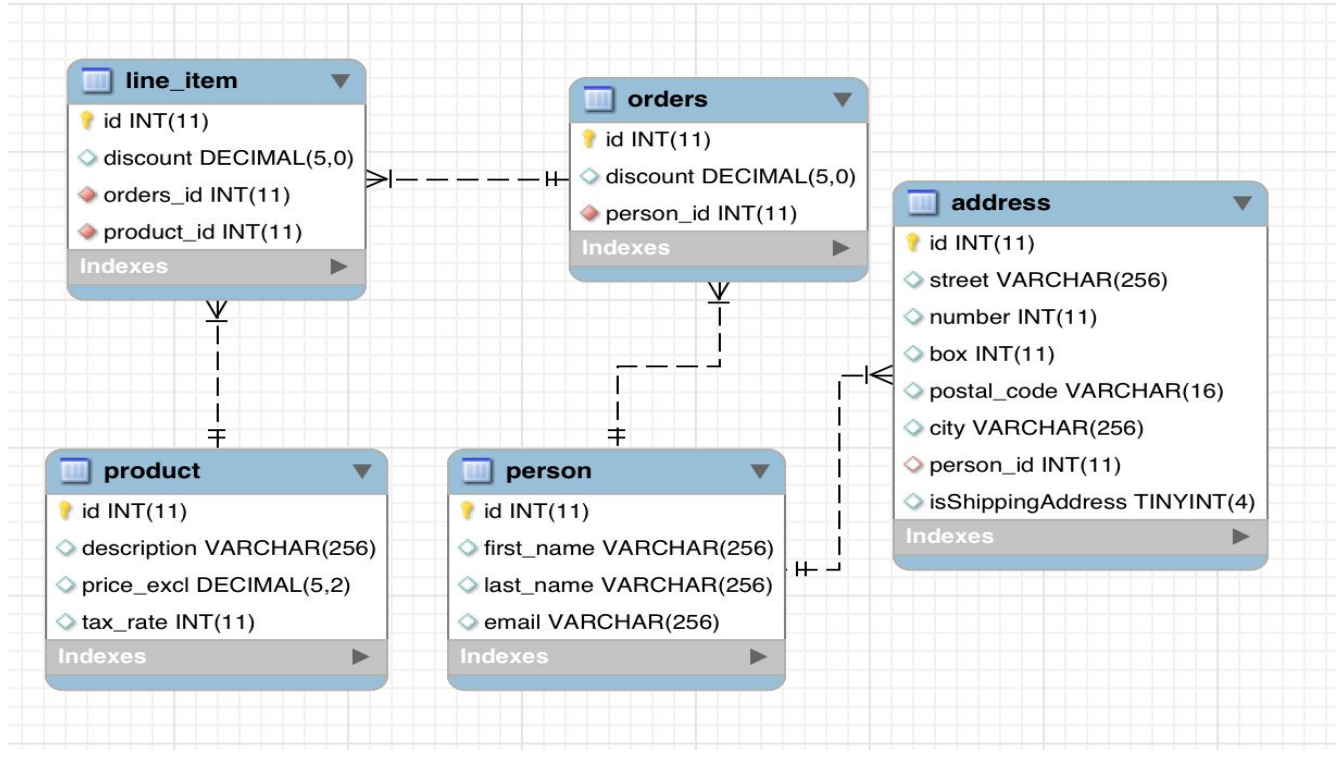
- Orders moeten altijd aan een persoon hangen
- Line-items moeten altijd aan een product en order hangen

```
alter table orders  
modify person_id int not null default 0;
```

```
alter table line_item  
modify orders_id int not null;
```

```
alter table line_item  
modify product_id int not null;
```

Wat hebben we bereikt?



QA time

