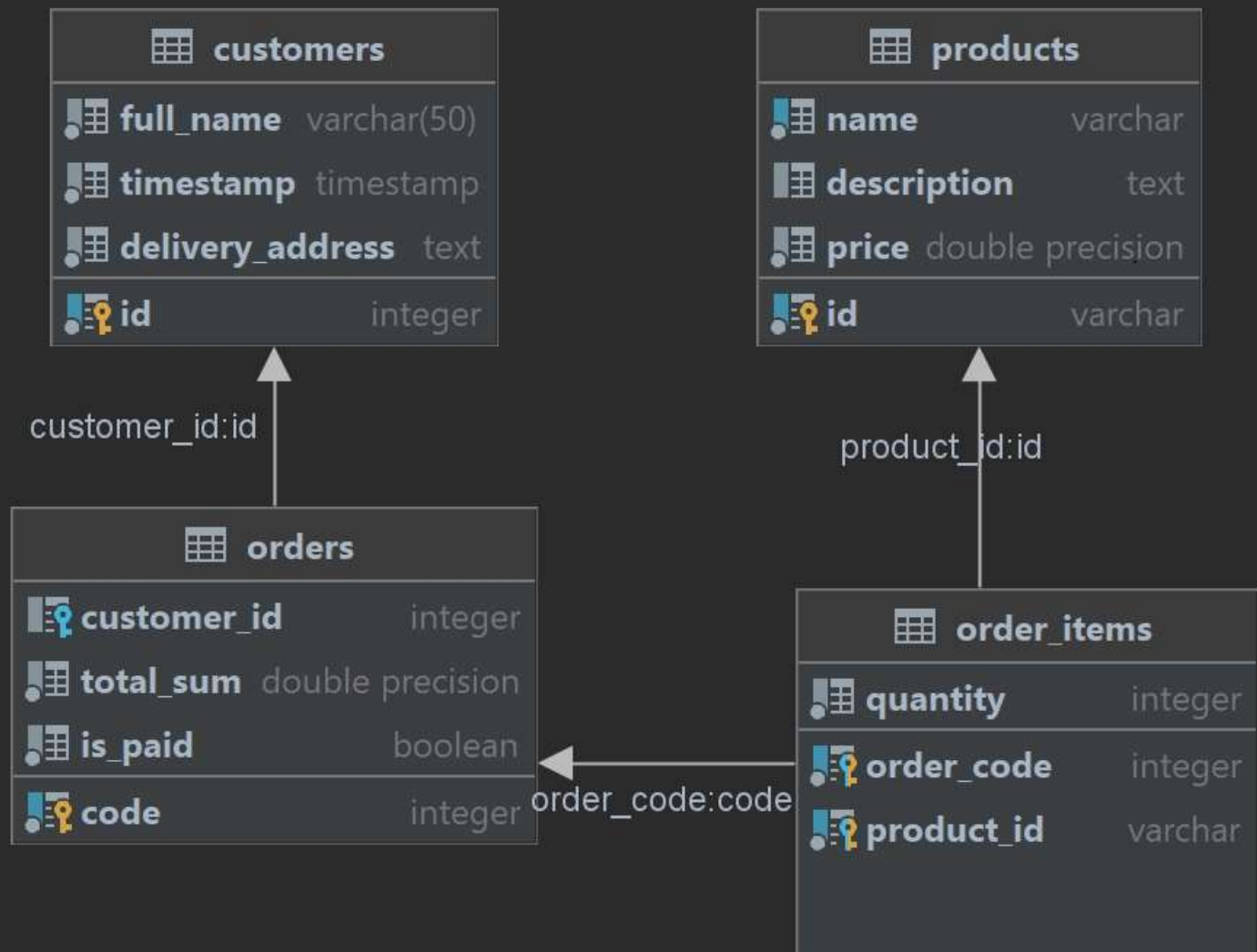- DDL (Data Definition Language) is used to <u>declare</u> <u>data structures</u>: renaming, creation, dropping.

- DML (Data Manipulation Language) is used to <u>manipulate with data</u> of <u>data structures</u>: merging, updating, deletion, insertion.

customers
- full_name — varchar(50)
- timestamp — timestamp
- delivery_address — text
- id — integer

products
- name — varchar
- description — text
- price — double precision
- id — varchar

orders
- customer_id — integer
- total_sum — double precision
- is_paid — boolean
- code — integer

order_items
- quantity — integer
- order_code — integer
- product_id — varchar

customer_id:id

product_id:id

order_code:code

```sql
create table customers(
    id int primary key NOT NULL,
    full_name varchar(50) NOT NULL,
    timestamp timestamp NOT NULL ,
    delivery_address text NOT NULL,
    UNIQUE (id)
);

create table orders(
    code int primary key NOT NULL ,
    customer_id int,
    total_sum double precision NOT NULL ,
    is_paid boolean NOT NULL ,
    foreign key  (customer_id) references customers(id),
    UNIQUE (code)
);

create table products(
    id varchar primary key NOT NULL ,
    name varchar NOT NULL ,
    description text ,
    price double precision NOT NULL,
    UNIQUE (id, name)
);

create table order_items(
    order_code int NOT NULL ,
    product_id varchar NOT NULL ,
    quantity int NOT NULL CHECK ( quantity > 0 ) ,
    primary key (order_code, product_id),
    foreign key (order_code) references orders(code),
    foreign key (product_id) references products(id),
    UNIQUE (order_code, product_id)
);
```

```sql
create type sex as enum ('male', 'female');
create table students(
    full_name     varchar(50) primary key,
    age           smallint,
    birth_date    DATE,
    gender        sex,
    av_grade      real,
    info_about_yourself text,
    add_info text,
    dormitory_need boolean
);

create table instructors(
    name varchar(50) primary key,
    languages text,
    work_exp text,
    remote_lessons boolean
);

create table lesson_participants(
    lesson_title varchar(50) primary key,
    teaching_instructor varchar(50),
    studying_students int,
    room_number int,
    foreign key (teaching_instructor) references instructors(name)
);
```

```sql
INSERT INTO customers (id, full_name, timestamp, delivery_address)
VALUES (11111, 'Aisha Khan', '2016-06-22 19:10:25-07', 'st. Ualikhanov, 21');

INSERT INTO products (id, name, description, price)
VALUES ('171715', 'doll', '', 855);

INSERT INTO products (id, name, description, price)
VALUES ('171716', 'car toy', '', 680);

INSERT INTO orders (code, customer_id, total_sum, is_paid)
VALUES (1122333, 11111, 15.4555,  true);

INSERT INTO order_items (order_code, product_id, quantity)
VALUES (1122333, '171715', 5);

UPDATE products
SET description = 'color is red'
WHERE name = 'car toy'
RETURNING *;

DELETE FROM products
WHERE id = '171716';
```