Lab 2 Bazarbai Aruzhan

Task 1.

Explain the difference between DDL and DML

1)DDL(data definition language)-helps to define the structures or schema of the database. We use it to create scheme of database/table. And to define columns of the table.

DDL commands:

-CREATE – create table or database;

-DROP- drop table or database;

-ALTER- change the definition of an existing table(we can add/ drop column/default etc.)

2)DML(data manipulation language)-allow to manipulate data in database.

DML commands:

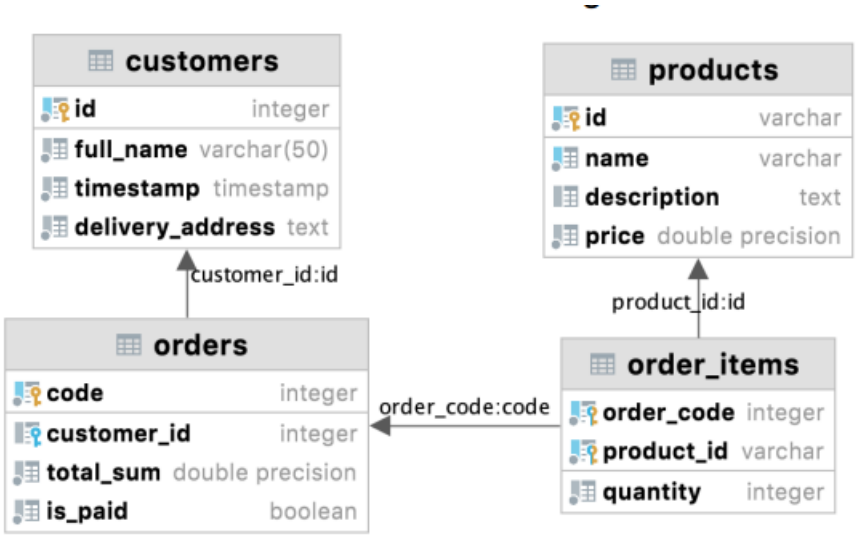
-INSERT- insert data to table

-UPDATE-update existing rows in table(individual or all)

-DELETE-delete rows of table

-SELECT- select and outputs data that satisfies the query

Task 2.



grey circle - not null, blue column - unique; quantity, total_sum, price > 0

```
create table customers(
    id integer primary key ,
   full_name varchar(50) not null ,
   timestamp timestamp not null ,
   delivery_address text not null

);

create table orders(
```

```
    code integer primary key ,
    customer_id integer references customers(id),
    total_sum double precision not null  check (total_sum>0),
    is_paid boolean  not null
);

create table products(
    id varchar primary key ,
    name varchar unique not null ,
    description text,
    price double precision not null check (price>0)
);

create table order_items(
    order_code integer references orders(code),
    product_id varchar references products(id),
    primary key (order_code,product_id),
    quantity integer not null check (quantity>0)
);
```

task 3

a. a students table storing data such as full name, age, birth date, gender, average grade, information about yourself, the need for a dormitory, additional info.

b. an instructors table storing data such as full name, speaking languages, work experience, the possibility of having remote lessons.

c. a lesson participants table storing data such as lesson title, teaching instructor, studying students, room number

```
--condition a
create table students(
    student_id integer primary key ,
    full_name text not null ,
    age integer not null,
    birth_date date not null,
    gender varchar(10) not null,
    average_grade numeric(3,2) not null check (average_grade>2), --for
example 3.56,2.85
    info text not null,
    need_for_dormitory boolean not null,
    add_info text
);
--condition b
create table instructors(
    instructor_id integer primary key ,
    full_name text not null ,
    speaking_language varchar(50) not null,
    work_experience integer not null ,
    remote_lesson boolean not null
);
--condition c
create table lesson(
    lesson_title varchar(50) not null ,
    instructor_id integer references instructors,
    student_id integer references students,
    room_number integer not null
);
```

Task 4

Give examples of insertion, update and deletion of data on tables from exercise 2.

```
insert into products(id,name,description,price)
values('100115','book','dictionary','33.355');
update products set name='book1' where name='book';
delete from products where id='100115';
```