Laboratory work № 1

#1

Data Definition Language (DDL) is used to create database schema and can be used to define some constraints as well.

Data Manipulation Language (DML) is used to add, retrieve or update the data.

a) 3 DDL: CREATE (creates a table), DROP (removes a table), ALTER (changes a table).

b) 4 DML: DELETE (removes rows in the table), UPDATE (Changes existing values in the table), SELECT (Retrieves data from one or more tables), INSERT (Adds rows to the table).

#2

```
create table customers(
    id integer PRIMARY KEY,
    full_name varchar(50) NOT NULL,
    timestamp timestamp NOT NULL ,
    delivery_address text NOT NULL
);

create table products(
    id varchar PRIMARY KEY,
    name varchar(50) UNIQUE NOT NULL ,
    description text,
    price double precision NOT NULL CHECK (price > 0 )
);

create table orders(
    code integer PRIMARY KEY ,
    customer_id integer ,
    total_sum double precision NOT NULL ,
    is_paid boolean NOT NULL ,
    foreign key(customer_id) references customers(id)
);

create table order_items(
    order_code integer,
    product_id varchar,
    quantity integer NOT NULL,
    foreign key (order_code) references orders(code),
    foreign key (product_id) references products(id)
);
```

#3

```
a) create table students(
```

```
        full_student_name varchar(50) PRIMARY KEY,
        age smallint NOT NULL ,
        birth_date date NOT NULL ,
        gender varchar(10) NOT NULL ,
        average_grade numeric(2,1) NOT NULL ,
        information_about_ourself text,
        the_need_for_a_dormitory boolean NOT NULL ,
        additional_info text
    );
b) create table instructors(
        full_instructor_name varchar(50) PRIMARY KEY ,
        speaking_languages text NOT NULL ,
        work_experience smallint NOT NULL ,
        the_possibility_of_having_remote_lessons boolean NOT NULL
    );
c) create table lesson_participants(
        lesson_title varchar(50) NOT NULL ,
        teaching_instructor varchar(50) NOT NULL ,
        studying_students varchar(50) NOT NULL ,
        room_number smallint NOT NULL ,
        foreign key (teaching_instructor) references
    instructors(full_instructor_name),
        foreign key (studying_students) references
    students(full_student_name)
    );
```

d)

#4

insertion:

```
insert into customers
    values (23, 'Aibek', 'January, 23 2017 12:01:45', 'Gashinin, 34');
```

update:

```
update order_items
    set quantity = quantity + 5
    where quantity < 20;
```

deletion:

```
delete from order_items where quantity > 10;
```