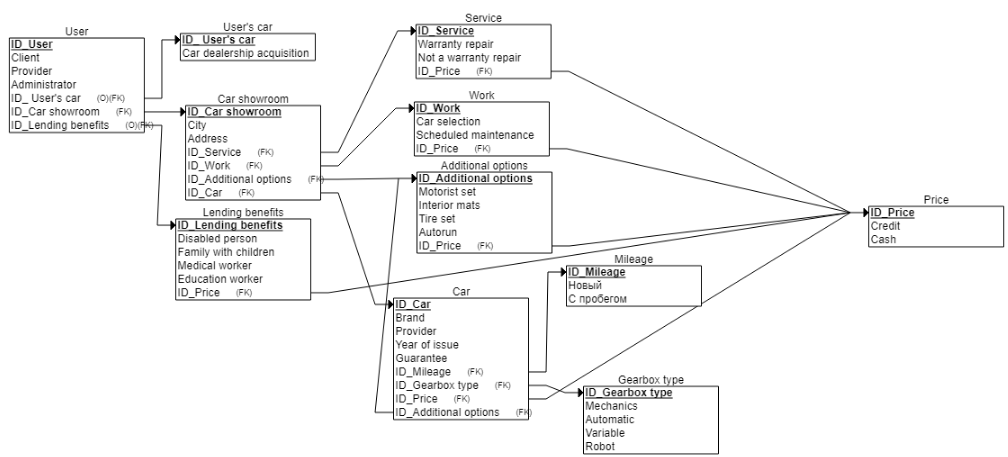
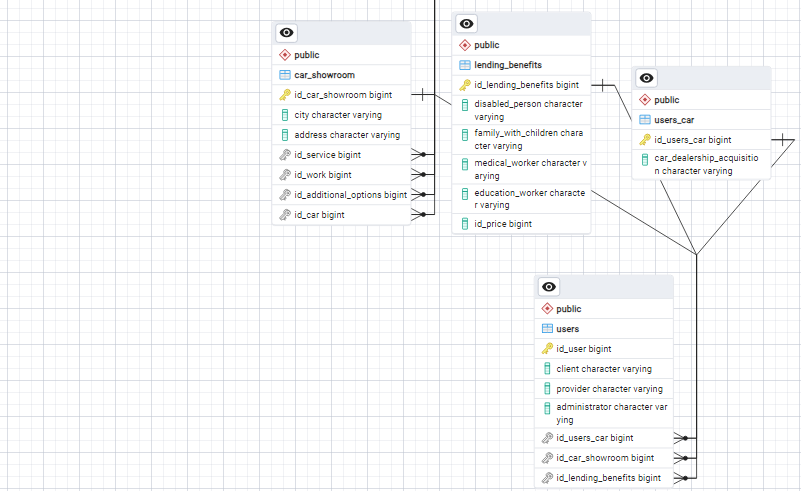
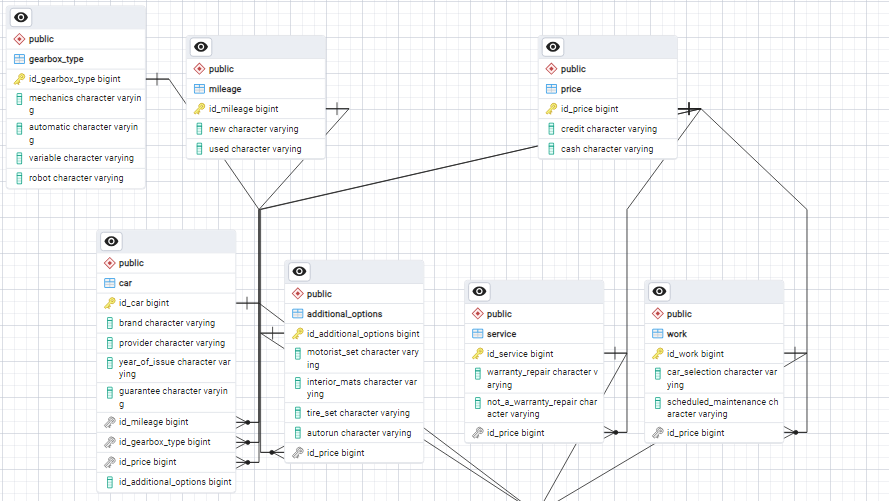
|  |  |  |
| --- | --- | --- |
| Лабораторная работа №3  Физическое проектирование базы данных | Ф.И.О. | Сидский Н. А. |
| Группа | ИВТ-261 |
| Преподаватель | Аль-Мерри Гаис М. С. |
| Дата сдачи | 16.04.2024 |

Реляционная схема из лабораторной работы №2

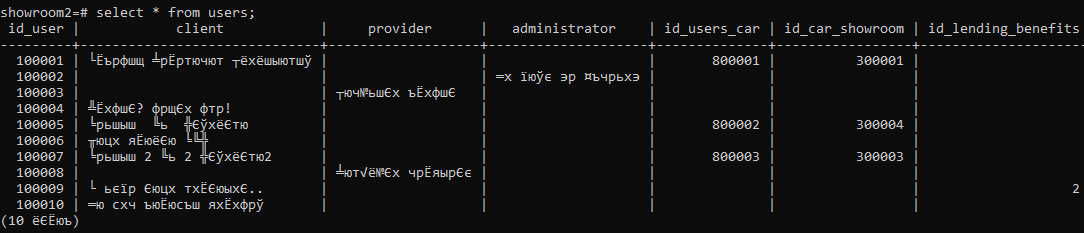


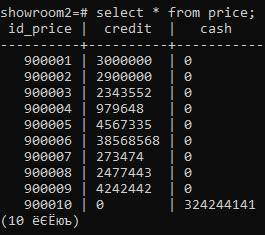
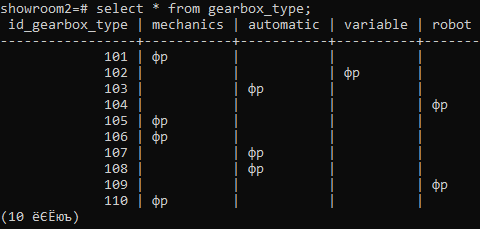
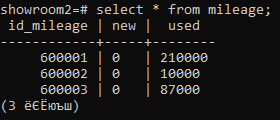
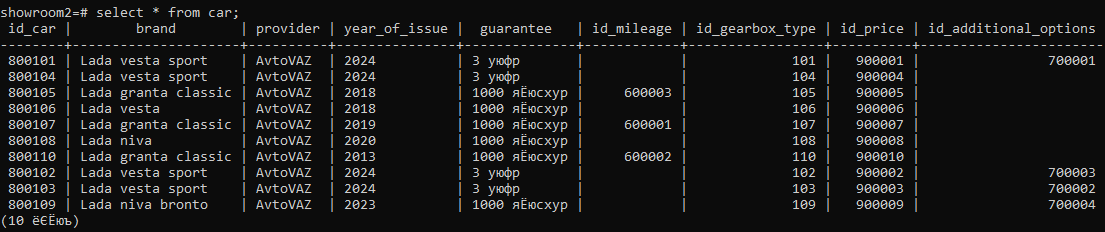
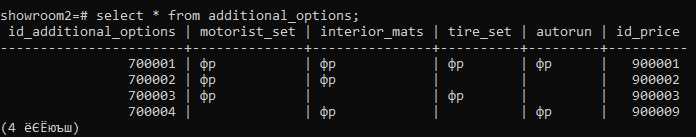
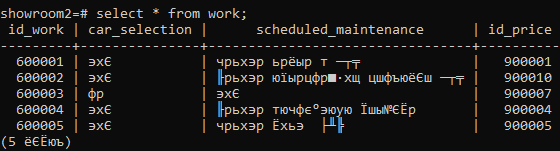
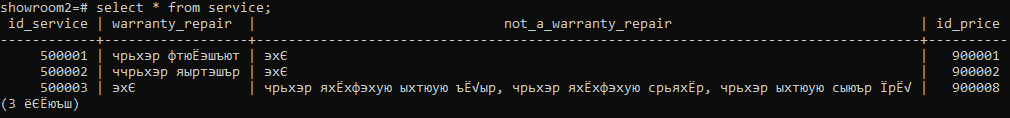
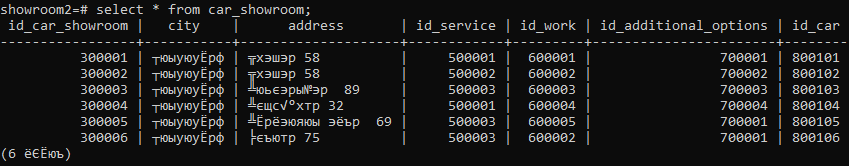
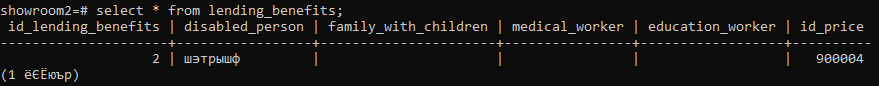
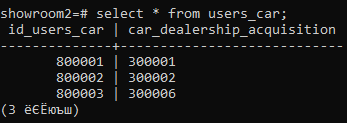
Полученная реляционная схема из pgAdmin



Данные реляционные схемы полностью совпадают.

Данные, хранящиеся в данной БД:





Реляционная схема одногруппника:

Изображение выглядит как текст, Шрифт, линия, Самоклеющийся листок

Автоматически созданное описание

Реализация БД одногруппника с помощью скриптов:

-- создаём таблицы с колонками

create table cargo (

cargo\_id INT,

cargo\_name varchar,

weight DECIMAL(18,2),

fk\_order int,

PRIMARY KEY (cargo\_id)

);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (1, 1, 1, 1);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (2, 2, 2, 2);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (3, 3, 3, 3);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (4, 4, 4, 4);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (5, 5, 5, 5);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (6, 6, 6, 6);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (7, 7, 7, 7);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (8, 8, 8, 8);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (9, 9, 9, 9);

insert into cargo (cargo\_id, cargo\_name, weight, fk\_order) values (10, 10, 10, 10);

--ALTER TABLE cargo ADD CONSTRAINT pk\_cargo PRIMARY KEY (cargo\_id); -- создали первичным ключом cargo\_id

create table transport\_on\_route (

transport\_on\_route\_id INT,

fk\_route INT,

fk\_transport\_number varchar,

PRIMARY KEY (transport\_on\_route\_id)

);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200000, 500000, 400000);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200001, 500001, 400001);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200002, 500002, 400002);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200003, 500003, 400003);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200004, 500004, 400004);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200005, 500005, 400005);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200006, 500006, 400006);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200007, 500007, 400007);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200008, 500008, 400008);

insert into transport\_on\_route (transport\_on\_route\_id, fk\_route, fk\_transport\_number) values (200009, 500009, 400009);

--ALTER TABLE transport\_on\_route ADD CONSTRAINT pk\_transport\_on\_route PRIMARY KEY (transport\_on\_route\_id); -- создали первичным ключом transport\_on\_route\_id

create table ordder (

order\_id INT,

price DECIMAL (18,2),

total\_weight DECIMAL (18,2),

status varchar(40),

fk\_email varchar(100),

fk\_route\_id INT,

PRIMARY KEY (order\_id)

);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300000, 12, 11, 'ykrali', 'q@ya.ru', 500000);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300001, 12, 11, 'ykrali', 'w@ya.ru', 500001);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300002, 12, 11, 'ykrali', 'e@ya.ru', 500002);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300003, 12, 11, 'ykrali', 'r@ya.ru', 500003);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300004, 12, 11, 'ykrali', 't@ya.ru', 500004);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300005, 12, 11, 'ykrali', 'y@ya.ru', 500005);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300006, 12, 11, 'ykrali', 'u@ya.ru', 500006);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300007, 12, 11, 'ykrali', 'i@ya.ru', 500007);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300008, 12, 11, 'ykrali', 'o@ya.ru', 500008);

insert into ordder (order\_id, price, total\_weight, status, fk\_email, fk\_route\_id) values (300009, 12, 11, 'ykrali', 'p@ya.ru', 500009);

--ALTER TABLE ordder ADD CONSTRAINT pk\_ordder PRIMARY KEY (order\_id); -- создали первичным ключом order\_id

create table transport (

transport\_number INT,

lifting\_capacity DECIMAL (100,2),

fk\_email varchar(100),

fk\_brand\_id INT,

--fk\_brand\_id INT,

PRIMARY KEY (transport\_number)

);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400000, 43, 'q@ya.ru', 600000);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400001, 33, 'w@ya.ru', 600001);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400002, 43, 'e@ya.ru', 600002);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400003, 46, 'r@ya.ru', 600003);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400004, 43, 't@ya.ru', 600004);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400005, 43, 'y@ya.ru', 600005);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400006, 43, 'u@ya.ru', 600006);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400007, 48, 'i@ya.ru', 600007);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400008, 43, 'o@ya.ru', 600008);

insert into transport (transport\_number, lifting\_capacity, fk\_email, fk\_brand\_id) values (400009, 43, 'p@ya.ru', 600009);

--ALTER TABLE transport ADD CONSTRAINT pk\_transport PRIMARY KEY (transport\_number); -- создали первичным ключом transport\_number

create table route (

route\_id INT,

starting\_point int,

end\_point int,

PRIMARY KEY (route\_id)

);

insert into route (route\_id, starting\_point, end\_point) values (500000, 100, 200);

insert into route (route\_id, starting\_point, end\_point) values (500001, 101, 201);

insert into route (route\_id, starting\_point, end\_point) values (500002, 102, 202);

insert into route (route\_id, starting\_point, end\_point) values (500003, 103, 203);

insert into route (route\_id, starting\_point, end\_point) values (500004, 104, 204);

insert into route (route\_id, starting\_point, end\_point) values (500005, 105, 205);

insert into route (route\_id, starting\_point, end\_point) values (500006, 106, 206);

insert into route (route\_id, starting\_point, end\_point) values (500007, 107, 207);

insert into route (route\_id, starting\_point, end\_point) values (500008, 108, 208);

insert into route (route\_id, starting\_point, end\_point) values (500009, 109, 209);

--ALTER TABLE route ADD CONSTRAINT pk\_route PRIMARY KEY (route\_id); -- создали первичным ключом route\_id

create table users (

email varchar(100),

pasword varchar(100),

surname varchar(40),

first\_name varchar(40),

second\_name varchar(40),

rolle varchar(200),

PRIMARY KEY (email)

);

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('q@ya.ru', 'q', 'q', 'qq', 'qqq', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('w@ya.ru', 'w', 'w', 'qw', 'qqw', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('e@ya.ru', 'e', 'e', 'qe', 'qqe', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('r@ya.ru', 'r', 'r', 'qr', 'qqr', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('t@ya.ru', 't', 't', 'qt', 'qqt', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('y@ya.ru', 'y', 'y', 'qy', 'qqy', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('u@ya.ru', 'u', 'u', 'qu', 'qqu', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('i@ya.ru', 'i', 'i', 'qi', 'qqi', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('o@ya.ru', 'o', 'o', 'qo', 'qqo', 'user');

insert into users (email, pasword, surname, first\_name, second\_name, rolle) values ('p@ya.ru', 'p', 'p', 'qp', 'qqp', 'user');

--ALTER TABLE users ADD CONSTRAINT pk\_users PRIMARY KEY (email); -- создали первичным ключом email

create table brand (

brand\_id INT,

brand\_name varchar(100),

PRIMARY KEY (brand\_id)

);

insert into brand (brand\_id, brand\_name) values (600000, 'q');

insert into brand (brand\_id, brand\_name) values (600001, 'w');

insert into brand (brand\_id, brand\_name) values (600002, 'e');

insert into brand (brand\_id, brand\_name) values (600003, 'r');

insert into brand (brand\_id, brand\_name) values (600004, 't');

insert into brand (brand\_id, brand\_name) values (600005, 'y');

insert into brand (brand\_id, brand\_name) values (600006, 'u');

insert into brand (brand\_id, brand\_name) values (600007, 'i');

insert into brand (brand\_id, brand\_name) values (600008, 'o');

insert into brand (brand\_id, brand\_name) values (600009, 'p');

--ALTER TABLE brand ADD CONSTRAINT pk\_brand PRIMARY KEY (brand\_id); -- создали первичным ключом brand\_id

create table color (

color\_id INT,

color\_name varchar(100),

PRIMARY KEY (color\_id)

);

insert into color (color\_id, color\_name) values (700000, 'q');

insert into color (color\_id, color\_name) values (700001, 'w');

insert into color (color\_id, color\_name) values (700002, 'e');

insert into color (color\_id, color\_name) values (700003, 'r');

insert into color (color\_id, color\_name) values (700004, 't');

insert into color (color\_id, color\_name) values (700005, 'y');

insert into color (color\_id, color\_name) values (700006, 'u');

insert into color (color\_id, color\_name) values (700007, 'i');

insert into color (color\_id, color\_name) values (700008, 'o');

insert into color (color\_id, color\_name) values (700009, 'p');

--ALTER TABLE color ADD CONSTRAINT pk\_color PRIMARY KEY (color\_id); -- создали первичным ключом color\_id

create table destination (

destination\_id INT,

street varchar(100),

fk\_city\_id INT,

house\_number int,

PRIMARY KEY (destination\_id)

);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800000, 'q', 900000, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800001, 'w', 900001, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800002, 'e', 900002, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800003, 'r', 900003, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800004, 't', 900004, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800005, 'y', 900005, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800006, 'u', 900006, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800007, 'i', 900007, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800008, 'o', 900008, 1);

insert into destination (destination\_id, street, fk\_city\_id, house\_number) values (800009, 'p', 900009, 1);

--ALTER TABLE destination ADD CONSTRAINT pk\_destination PRIMARY KEY (destination\_id); -- создали первичным ключом destination\_id

create table city (

city\_id INT,

city\_name varchar(100),

PRIMARY KEY (city\_id)

);

insert into city (city\_id, city\_name) values (900000, 'q');

insert into city (city\_id, city\_name) values (900001, 'w');

insert into city (city\_id, city\_name) values (900002, 'e');

insert into city (city\_id, city\_name) values (900003, 'r');

insert into city (city\_id, city\_name) values (900004, 't');

insert into city (city\_id, city\_name) values (900005, 'y');

insert into city (city\_id, city\_name) values (900006, 'u');

insert into city (city\_id, city\_name) values (900007, 'i');

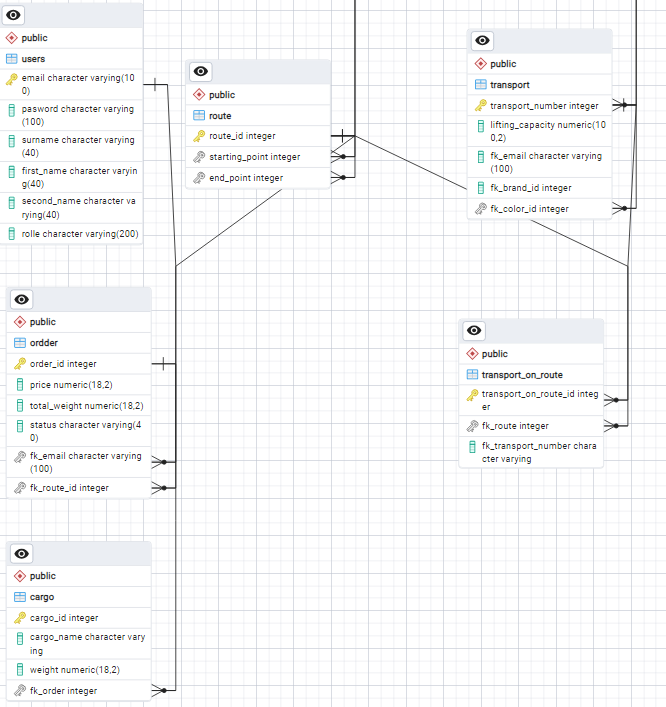
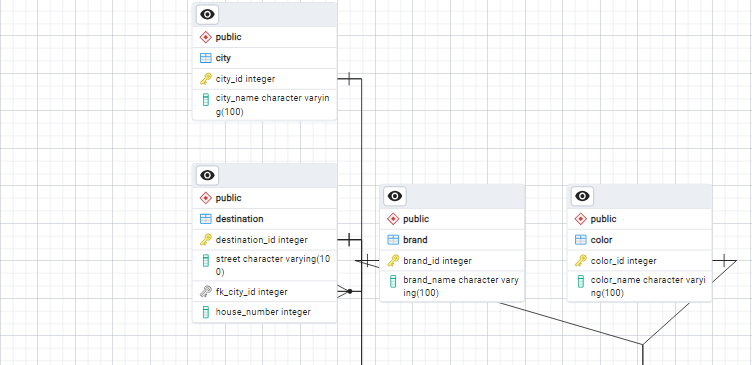
insert into city (city\_id, city\_name) values (900008, 'o');

insert into city (city\_id, city\_name) values (900009, 'p');

--ALTER TABLE city ADD CONSTRAINT pk\_city PRIMARY KEY (city\_id); -- создали первичным ключом city\_id

--добавить данные

Схема базы данных одногруппника, полученная в графической оболочке:



Запросы на изменение таблиц:

Изображение выглядит как текст, Шрифт, снимок экрана, черный

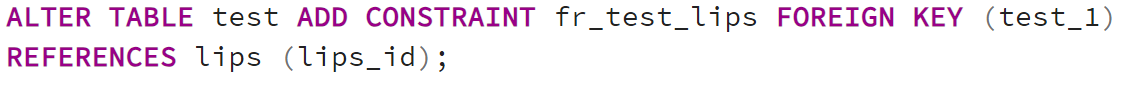
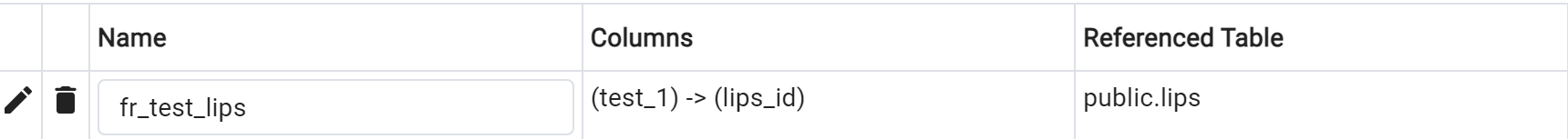
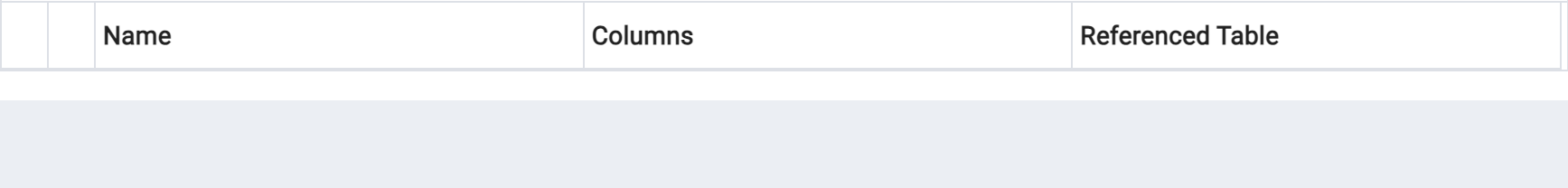
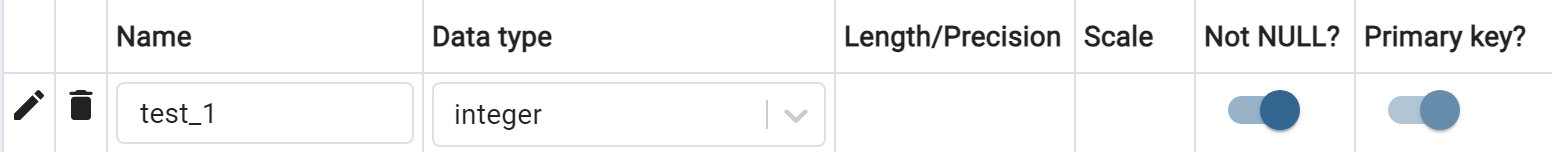
Автоматически созданное описание

1. Добавление столбца:
   * 
   * Изображение выглядит как текст, Шрифт, снимок экрана, типография

     Автоматически созданное описание
2. Изменение столбца:
   * 
   * Изображение выглядит как текст, снимок экрана, Шрифт, линия

     Автоматически созданное описание
   * Изображение выглядит как текст, снимок экрана, Шрифт, линия

     Автоматически созданное описание
3. Удаление столбца:
   * 
   * Изображение выглядит как текст, Шрифт, снимок экрана, типография

     Автоматически созданное описание
4. Добавление внешнего ключа:
   * 
   * 
5. Удаление внешнего ключа:
   * + 
     + 
6. Добавление первичного ключа:
   * 
   * 
7. Удаление первичного ключа:
   * 
   * 
8. Добавление, изменение или удаление другого ограничения (например, UNIQUE или CHECK):
   * 
   * 
9. **RENAME:**

* ****
* **Изображение выглядит как текст, снимок экрана, дисплей, число

  Автоматически созданное описание Изображение выглядит как текст, снимок экрана, дисплей, Шрифт

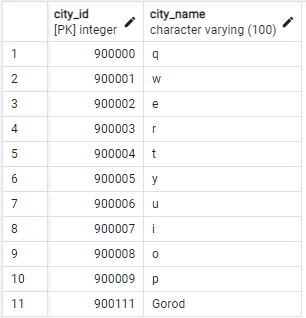
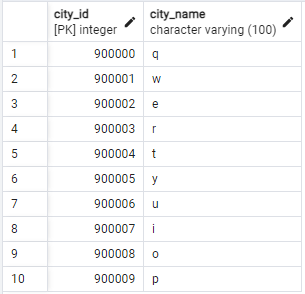
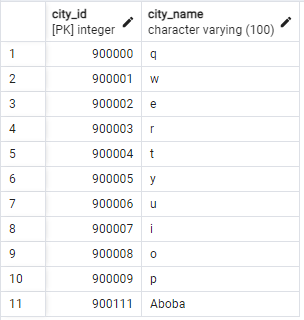
  Автоматически созданное описание**
* **-------------------------------------------------------------------------------**
* **Изображение выглядит как текст, Шрифт, снимок экрана, белый

  Автоматически созданное описание**
* **Изображение выглядит как текст, снимок экрана, Шрифт, линия

  Автоматически созданное описание Изображение выглядит как текст, снимок экрана, Шрифт, число

  Автоматически созданное описание**

Отчет лабораторной работы:

1. 
2. 
3. 