**Министерство науки и высшего образования Российской Федерации**

федеральное государственное автономное образовательное учреждение высшего образования

**«НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИТМО»**

**Отчет**

по лабораторной работе №3.2 «Создание таблиц базы данных PostgreSQL. Заполнение таблиц рабочими данными»

по дисциплине **«Проектирование и реализация баз данных»**

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# Цель работы

# Овладеть практическими навыками создания таблиц базы данных PostgreSQL 1Х, заполнения их рабочими данными, резервного копирования и восстановления БД.

# Практическое задание

# Создать базу данных с использованием pgAdmin 4 (согласно индивидуальному заданию).

# Создать схему в составе базы данных.

# Создать таблицы базы данных.

# Установить ограничения на данные: Primary Key, Unique, Check, Foreign Key.

# Заполнить таблицы БД рабочими данными.

# Создать резервную копию БД.

# Указание:

# Создать две резервные копии:

# - с расширением CUSTOM для восстановления БД;

# - с расширением PLAIN для листинга (в отчете);

# - при создании резервных копий БД настроить параметры Dump options для Type of objects и Queries.

# Восстановить БД.

# Вариант 12. БД «Прокат автомобилей»

**Описание предметной области:**

Схема логической модели базы данных, сгенерированная в Generate ERD указана на рисунке 1.

# 

# Рисунок 1 – Схема логической модели базы данных.

# Листинг дампа:

--

-- PostgreSQL database dump

--

-- Dumped from database version 14.9 (Ubuntu 14.9-0ubuntu0.22.04.1)

-- Dumped by pg\_dump version 16.0

-- Started on 2023-10-24 23:29:58

**SET** statement\_timeout = **0**;

**SET** lock\_timeout = **0**;

**SET** idle\_in\_transaction\_session\_timeout = **0**;

**SET** client\_encoding = 'UTF8';

**SET** standard\_conforming\_strings = **on**;

**SELECT** pg\_catalog.set\_config('search\_path', '', **false**);

**SET** check\_function\_bodies = **false**;

**SET** xmloption = content;

**SET** client\_min\_messages = warning;

**SET** row\_security = **off**;

--

-- TOC entry 3415 (class 1262 OID 49483)

-- Name: dbmishakorni; Type: DATABASE; Schema: -; Owner: postgres

--

**CREATE** **DATABASE** dbmishakorni **WITH** **TEMPLATE** = template0 **ENCODING** = 'UTF8' LOCALE\_PROVIDER = libc LOCALE = 'C.UTF-8';

**ALTER** **DATABASE** dbmishakorni **OWNER** **TO** postgres;

\**connect** dbmishakorni

**SET** statement\_timeout = **0**;

**SET** lock\_timeout = **0**;

**SET** idle\_in\_transaction\_session\_timeout = **0**;

**SET** client\_encoding = 'UTF8';

**SET** standard\_conforming\_strings = **on**;

**SELECT** pg\_catalog.set\_config('search\_path', '', **false**);

**SET** check\_function\_bodies = **false**;

**SET** xmloption = content;

**SET** client\_min\_messages = warning;

**SET** row\_security = **off**;

--

-- TOC entry 4 (class 2615 OID 2200)

-- Name: public; Type: SCHEMA; Schema: -; Owner: postgres

--

**CREATE** **SCHEMA** **public**;

**ALTER** **SCHEMA** **public** **OWNER** **TO** postgres;

--

-- TOC entry 3416 (class 0 OID 0)

-- Dependencies: 4

-- Name: SCHEMA public; Type: COMMENT; Schema: -; Owner: postgres

--

**COMMENT** **ON** **SCHEMA** **public** **IS** 'standard public schema';

**SET** default\_tablespace = '';

**SET** default\_table\_access\_method = heap;

--

-- TOC entry 219 (class 1259 OID 49595)

-- Name: acts; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.acts (

id integer **NOT** **NULL**,

**type** character varying(**30**) **NOT** **NULL**,

date date **NOT** **NULL**,

contract\_id integer **NOT** **NULL**

);

**ALTER** **TABLE** **public**.acts **OWNER** **TO** dbmishakorni;

--

-- TOC entry 215 (class 1259 OID 49540)

-- Name: cars; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.cars (

id integer **NOT** **NULL**,

body\_number character varying(**17**) **NOT** **NULL**,

register\_number character varying(**8**) **NOT** **NULL**,

engine\_number character varying(**17**) **NOT** **NULL**,

last\_to\_date date **NOT** **NULL**,

return\_remarks character varying(**100**),

model\_id integer **NOT** **NULL**,

insurance\_id integer **NOT** **NULL**

);

**ALTER** **TABLE** **public**.cars **OWNER** **TO** dbmishakorni;

--

-- TOC entry 211 (class 1259 OID 49500)

-- Name: clients; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.clients (

id integer **NOT** **NULL**,

discount integer **DEFAULT** **0** **NOT** **NULL**,

name character varying(**100**) **NOT** **NULL**,

address character varying(**100**) **NOT** **NULL**,

mobile\_phone character varying **NOT** **NULL**,

**CONSTRAINT** discount **CHECK** (((discount >= **0**) **AND** (discount <= **100**)))

);

**ALTER** **TABLE** **public**.clients **OWNER** **TO** dbmishakorni;

--

-- TOC entry 217 (class 1259 OID 49561)

-- Name: contracts; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.contracts (

id integer **NOT** **NULL**,

start\_date date **NOT** **NULL**,

end\_date date **NOT** **NULL**,

state\_status character varying(**50**) **NOT** **NULL**,

paid\_status character varying(**50**) **NOT** **NULL**,

car\_id integer **NOT** **NULL**,

client\_id integer **NOT** **NULL**,

worker\_id integer **NOT** **NULL**,

**CONSTRAINT** start\_date **CHECK** ((end\_date > start\_date))

);

**ALTER** **TABLE** **public**.contracts **OWNER** **TO** dbmishakorni;

--

-- TOC entry 218 (class 1259 OID 49582)

-- Name: crashes; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.crashes (

id integer **NOT** **NULL**,

**location** character varying(**75**) **NOT** **NULL**,

guilty character varying(**50**) **NOT** **NULL**,

date date **NOT** **NULL**,

price integer **NOT** **NULL**,

description character varying **NOT** **NULL**,

contract\_id integer **NOT** **NULL**,

**CONSTRAINT** price **CHECK** ((price > **0**))

);

**ALTER** **TABLE** **public**.crashes **OWNER** **TO** dbmishakorni;

--

-- TOC entry 214 (class 1259 OID 49532)

-- Name: insurances; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.insurances (

id integer **NOT** **NULL**,

price integer **NOT** **NULL**,

**type** character varying **NOT** **NULL**,

**CONSTRAINT** price **CHECK** ((price > **0**))

);

**ALTER** **TABLE** **public**.insurances **OWNER** **TO** dbmishakorni;

--

-- TOC entry 212 (class 1259 OID 49509)

-- Name: models; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.models (

id integer **NOT** **NULL**,

description character varying(**100**),

title character varying(**100**) **NOT** **NULL**,

**year** integer **NOT** **NULL**,

price integer **NOT** **NULL**,

brand character varying(**100**) **NOT** **NULL**,

**CONSTRAINT** price **CHECK** ((price > **0**)),

**CONSTRAINT** **year** **CHECK** ((**year** > **1900**))

);

**ALTER** **TABLE** **public**.models **OWNER** **TO** dbmishakorni;

--

-- TOC entry 209 (class 1259 OID 49484)

-- Name: positions; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.positions (

id integer **NOT** **NULL**,

salary integer **NOT** **NULL**,

tasks character varying(**100**) **NOT** **NULL**,

**CONSTRAINT** salary **CHECK** ((salary > **0**))

);

**ALTER** **TABLE** **public**.positions **OWNER** **TO** dbmishakorni;

--

-- TOC entry 213 (class 1259 OID 49520)

-- Name: prices; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.prices (

id integer **NOT** **NULL**,

model\_id integer **NOT** **NULL**,

rent\_price integer **NOT** **NULL**,

start\_date date **NOT** **NULL**,

end\_date date **NOT** **NULL**,

**CONSTRAINT** end\_date **CHECK** ((end\_date > start\_date)),

**CONSTRAINT** rent\_price **CHECK** ((rent\_price >= **0**))

);

**ALTER** **TABLE** **public**.prices **OWNER** **TO** dbmishakorni;

--

-- TOC entry 216 (class 1259 OID 49555)

-- Name: traffic\_violation; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.traffic\_violation (

id integer **NOT** **NULL**,

name character varying(**30**) **NOT** **NULL**,

price integer **NOT** **NULL**,

**CONSTRAINT** price **CHECK** ((price > **0**))

);

**ALTER** **TABLE** **public**.traffic\_violation **OWNER** **TO** dbmishakorni;

--

-- TOC entry 220 (class 1259 OID 49605)

-- Name: violations; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.violations (

id integer **NOT** **NULL**,

traffic\_violation\_id integer **NOT** **NULL**,

payer character varying(**50**) **NOT** **NULL**,

date date **NOT** **NULL**,

**location** character varying(**100**) **NOT** **NULL**,

crash\_id integer **NOT** **NULL**,

contract\_id integer **NOT** **NULL**

);

**ALTER** **TABLE** **public**.violations **OWNER** **TO** dbmishakorni;

--

-- TOC entry 210 (class 1259 OID 49490)

-- Name: workers; Type: TABLE; Schema: public; Owner: dbmishakorni

--

**CREATE** **TABLE** **public**.workers (

id integer **NOT** **NULL**,

name character varying(**50**) **NOT** **NULL**,

passport\_data character varying(**12**) **NOT** **NULL**,

position\_id integer **NOT** **NULL**

);

**ALTER** **TABLE** **public**.workers **OWNER** **TO** dbmishakorni;

--

-- TOC entry 3408 (class 0 OID 49595)

-- Dependencies: 219

-- Data for Name: acts; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.acts **VALUES** (**1**, 'ТипА', '2023-10-01', **1**);

**INSERT** **INTO** **public**.acts **VALUES** (**2**, 'ТипБ', '2023-10-02', **2**);

**INSERT** **INTO** **public**.acts **VALUES** (**3**, 'ТипВ', '2023-10-03', **3**);

**INSERT** **INTO** **public**.acts **VALUES** (**4**, 'ТипГ', '2023-10-04', **4**);

**INSERT** **INTO** **public**.acts **VALUES** (**5**, 'ТипД', '2023-10-05', **5**);

--

-- TOC entry 3404 (class 0 OID 49540)

-- Dependencies: 215

-- Data for Name: cars; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.cars **VALUES** (**1**, 'ТЕЛО1234567890123', 'РЕГ1234', 'ДВИГ1234567890123', '2023-10-01', **NULL**, **1**, **1**);

**INSERT** **INTO** **public**.cars **VALUES** (**2**, 'ТЕЛО2234567890123', 'РЕГ2234', 'ДВИГ2234567890123', '2023-10-02', **NULL**, **2**, **2**);

**INSERT** **INTO** **public**.cars **VALUES** (**3**, 'ТЕЛО3234567890123', 'РЕГ3234', 'ДВИГ3234567890123', '2023-10-03', **NULL**, **3**, **3**);

**INSERT** **INTO** **public**.cars **VALUES** (**4**, 'ТЕЛО4234567890123', 'РЕГ4234', 'ДВИГ4234567890123', '2023-10-04', **NULL**, **4**, **4**);

**INSERT** **INTO** **public**.cars **VALUES** (**5**, 'ТЕЛО5234567890123', 'РЕГ5234', 'ДВИГ5234567890123', '2023-10-05', **NULL**, **5**, **5**);

--

-- TOC entry 3400 (class 0 OID 49500)

-- Dependencies: 211

-- Data for Name: clients; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.clients **VALUES** (**1**, **5**, 'Иван Иванов', 'ул. Сосновая, 123', '+79001234567');

**INSERT** **INTO** **public**.clients **VALUES** (**2**, **10**, 'Ольга Петрова', 'пр. Ленина, 456', '+79007654321');

**INSERT** **INTO** **public**.clients **VALUES** (**3**, **15**, 'Дмитрий Смирнов', 'ул. Черёмушки, 789', '+79001112233');

**INSERT** **INTO** **public**.clients **VALUES** (**4**, **20**, 'Елена Козлова', 'ул. Зелёная, 101', '+79004445566');

**INSERT** **INTO** **public**.clients **VALUES** (**5**, **25**, 'Алексей Морозов', 'ул. Кленовая, 202', '+79007778899');

--

-- TOC entry 3406 (class 0 OID 49561)

-- Dependencies: 217

-- Data for Name: contracts; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.contracts **VALUES** (**1**, '2023-01-01', '2023-12-31', 'Активный', 'Оплачено', **1**, **1**, **1**);

**INSERT** **INTO** **public**.contracts **VALUES** (**2**, '2023-01-02', '2023-12-30', 'Завершён', 'Не оплачено', **2**, **2**, **2**);

**INSERT** **INTO** **public**.contracts **VALUES** (**3**, '2023-01-03', '2023-12-29', 'Активный', 'Оплачено', **3**, **3**, **3**);

**INSERT** **INTO** **public**.contracts **VALUES** (**4**, '2023-01-04', '2023-12-28', 'Завершён', 'Оплачено', **4**, **4**, **4**);

**INSERT** **INTO** **public**.contracts **VALUES** (**5**, '2023-01-05', '2023-12-27', 'Активный', 'Не оплачено', **5**, **5**, **5**);

--

-- TOC entry 3407 (class 0 OID 49582)

-- Dependencies: 218

-- Data for Name: crashes; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.crashes **VALUES** (**1**, 'Москва', 'Иван Иванов', '2023-01-01', **500**, 'Незначительные повреждения переднего бампера', **1**);

**INSERT** **INTO** **public**.crashes **VALUES** (**2**, 'Санкт-Петербург', 'Ольга Петрова', '2023-01-02', **1000**, 'Серьезные повреждения задней двери', **2**);

**INSERT** **INTO** **public**.crashes **VALUES** (**3**, 'Новосибирск', 'Дмитрий Смирнов', '2023-01-03', **750**, 'Царапины на боковой стороне', **3**);

**INSERT** **INTO** **public**.crashes **VALUES** (**4**, 'Казань', 'Елена Козлова', '2023-01-04', **250**, 'Сломанный задний фонарь', **4**);

**INSERT** **INTO** **public**.crashes **VALUES** (**5**, 'Нижний Новгород', 'Алексей Морозов', '2023-01-05', **300**, 'Проколотое колесо', **5**);

--

-- TOC entry 3403 (class 0 OID 49532)

-- Dependencies: 214

-- Data for Name: insurances; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.insurances **VALUES** (**1**, **5000**, 'ОСАГО');

**INSERT** **INTO** **public**.insurances **VALUES** (**2**, **10000**, 'КАСКО');

**INSERT** **INTO** **public**.insurances **VALUES** (**3**, **7000**, 'Зеленая карта');

**INSERT** **INTO** **public**.insurances **VALUES** (**4**, **15000**, 'Полное КАСКО');

**INSERT** **INTO** **public**.insurances **VALUES** (**5**, **2000**, 'Страхование от несчастных случаев');

--

-- TOC entry 3401 (class 0 OID 49509)

-- Dependencies: 212

-- Data for Name: models; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.models **VALUES** (**1**, 'Седан', 'МодельА', **2020**, **500000**, 'Lada');

**INSERT** **INTO** **public**.models **VALUES** (**2**, 'Хэтчбек', 'МодельБ', **2019**, **600000**, 'Toyota');

**INSERT** **INTO** **public**.models **VALUES** (**3**, 'Кроссовер', 'МодельВ', **2021**, **1000000**, 'BMW');

**INSERT** **INTO** **public**.models **VALUES** (**4**, 'Минивэн', 'МодельГ', **2018**, **750000**, 'Kia');

**INSERT** **INTO** **public**.models **VALUES** (**5**, 'Кабриолет', 'МодельД', **2022**, **1200000**, 'Mercedes');

--

-- TOC entry 3398 (class 0 OID 49484)

-- Dependencies: 209

-- Data for Name: positions; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.positions **VALUES** (**1**, **50000**, 'Продавец');

**INSERT** **INTO** **public**.positions **VALUES** (**2**, **60000**, 'Менеджер по продажам');

**INSERT** **INTO** **public**.positions **VALUES** (**3**, **70000**, 'Технический специалист');

**INSERT** **INTO** **public**.positions **VALUES** (**4**, **80000**, 'Менеджер по логистике');

**INSERT** **INTO** **public**.positions **VALUES** (**5**, **90000**, 'Руководитель отдела');

--

-- TOC entry 3402 (class 0 OID 49520)

-- Dependencies: 213

-- Data for Name: prices; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.prices **VALUES** (**1**, **1**, **1000**, '2023-01-01', '2023-01-31');

**INSERT** **INTO** **public**.prices **VALUES** (**2**, **2**, **1500**, '2023-02-01', '2023-02-28');

**INSERT** **INTO** **public**.prices **VALUES** (**3**, **3**, **2000**, '2023-03-01', '2023-03-31');

**INSERT** **INTO** **public**.prices **VALUES** (**4**, **4**, **1700**, '2023-04-01', '2023-04-30');

**INSERT** **INTO** **public**.prices **VALUES** (**5**, **5**, **2500**, '2023-05-01', '2023-05-31');

--

-- TOC entry 3405 (class 0 OID 49555)

-- Dependencies: 216

-- Data for Name: traffic\_violation; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.traffic\_violation **VALUES** (**1**, 'Превышение скорости', **500**);

**INSERT** **INTO** **public**.traffic\_violation **VALUES** (**2**, 'Парковка в неположенном месте', **1000**);

**INSERT** **INTO** **public**.traffic\_violation **VALUES** (**3**, 'Проезд на красный', **1500**);

**INSERT** **INTO** **public**.traffic\_violation **VALUES** (**4**, 'Непристегнутый ремень', **300**);

**INSERT** **INTO** **public**.traffic\_violation **VALUES** (**5**, 'Использование телефона', **700**);

--

-- TOC entry 3409 (class 0 OID 49605)

-- Dependencies: 220

-- Data for Name: violations; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.violations **VALUES** (**1**, **1**, 'Иван Иванов', '2023-01-01', 'Москва', **1**, **1**);

**INSERT** **INTO** **public**.violations **VALUES** (**2**, **2**, 'Ольга Петрова', '2023-01-02', 'Санкт-Петербург', **2**, **2**);

**INSERT** **INTO** **public**.violations **VALUES** (**3**, **3**, 'Дмитрий Смирнов', '2023-01-03', 'Новосибирск', **3**, **3**);

**INSERT** **INTO** **public**.violations **VALUES** (**4**, **4**, 'Елена Козлова', '2023-01-04', 'Казань', **4**, **4**);

**INSERT** **INTO** **public**.violations **VALUES** (**5**, **5**, 'Алексей Морозов', '2023-01-05', 'Нижний Новгород', **5**, **5**);

--

-- TOC entry 3399 (class 0 OID 49490)

-- Dependencies: 210

-- Data for Name: workers; Type: TABLE DATA; Schema: public; Owner: dbmishakorni

--

**INSERT** **INTO** **public**.workers **VALUES** (**1**, 'Мария Сергеева', '123456789012', **1**);

**INSERT** **INTO** **public**.workers **VALUES** (**2**, 'Петр Алексеев', '234567890123', **2**);

**INSERT** **INTO** **public**.workers **VALUES** (**3**, 'Светлана Васильева', '345678901234', **3**);

**INSERT** **INTO** **public**.workers **VALUES** (**4**, 'Андрей Петров', '456789012345', **4**);

**INSERT** **INTO** **public**.workers **VALUES** (**5**, 'Екатерина Иванова', '567890123456', **5**);

--

-- TOC entry 3224 (class 2606 OID 49489)

-- Name: positions Position\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.positions

**ADD** **CONSTRAINT** "Position\_pkey" **PRIMARY** **KEY** (id);

--

-- TOC entry 3244 (class 2606 OID 49599)

-- Name: acts acts\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.acts

**ADD** **CONSTRAINT** acts\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3236 (class 2606 OID 49544)

-- Name: cars cars\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.cars

**ADD** **CONSTRAINT** cars\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3228 (class 2606 OID 49508)

-- Name: clients clients\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.clients

**ADD** **CONSTRAINT** clients\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3240 (class 2606 OID 49566)

-- Name: contracts contracts\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.contracts

**ADD** **CONSTRAINT** contracts\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3242 (class 2606 OID 49589)

-- Name: crashes crash\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.crashes

**ADD** **CONSTRAINT** crash\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3234 (class 2606 OID 49539)

-- Name: insurances insurance\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.insurances

**ADD** **CONSTRAINT** insurance\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3230 (class 2606 OID 49515)

-- Name: models model\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.models

**ADD** **CONSTRAINT** model\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3232 (class 2606 OID 49526)

-- Name: prices price\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.prices

**ADD** **CONSTRAINT** price\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3238 (class 2606 OID 49560)

-- Name: traffic\_violation traffic\_violation\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.traffic\_violation

**ADD** **CONSTRAINT** traffic\_violation\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3246 (class 2606 OID 49609)

-- Name: violations violations\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.violations

**ADD** **CONSTRAINT** violations\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3226 (class 2606 OID 49494)

-- Name: workers workers\_pkey; Type: CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.workers

**ADD** **CONSTRAINT** workers\_pkey **PRIMARY** **KEY** (id);

--

-- TOC entry 3251 (class 2606 OID 49567)

-- Name: contracts car; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.contracts

**ADD** **CONSTRAINT** car **FOREIGN** **KEY** (car\_id) **REFERENCES** **public**.cars(id) **ON** **DELETE** **SET** **NULL**;

--

-- TOC entry 3252 (class 2606 OID 49572)

-- Name: contracts client; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.contracts

**ADD** **CONSTRAINT** client **FOREIGN** **KEY** (client\_id) **REFERENCES** **public**.clients(id) **ON** **DELETE** **SET** **NULL**;

--

-- TOC entry 3254 (class 2606 OID 49590)

-- Name: crashes contract; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.crashes

**ADD** **CONSTRAINT** contract **FOREIGN** **KEY** (contract\_id) **REFERENCES** **public**.contracts(id) **ON** **DELETE** **SET** **NULL**;

--

-- TOC entry 3255 (class 2606 OID 49600)

-- Name: acts contract; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.acts

**ADD** **CONSTRAINT** contract **FOREIGN** **KEY** (contract\_id) **REFERENCES** **public**.contracts(id) **ON** **DELETE** **CASCADE**;

--

-- TOC entry 3256 (class 2606 OID 49620)

-- Name: violations contract; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.violations

**ADD** **CONSTRAINT** contract **FOREIGN** **KEY** (contract\_id) **REFERENCES** **public**.contracts(id) **ON** **DELETE** **SET** **NULL**;

--

-- TOC entry 3257 (class 2606 OID 49615)

-- Name: violations crash; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.violations

**ADD** **CONSTRAINT** crash **FOREIGN** **KEY** (crash\_id) **REFERENCES** **public**.crashes(id) **ON** **DELETE** **CASCADE**;

--

-- TOC entry 3249 (class 2606 OID 49550)

-- Name: cars insurance; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.cars

**ADD** **CONSTRAINT** insurance **FOREIGN** **KEY** (insurance\_id) **REFERENCES** **public**.insurances(id) **ON** **DELETE** **SET** **NULL**;

--

-- TOC entry 3248 (class 2606 OID 49527)

-- Name: prices model; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.prices

**ADD** **CONSTRAINT** model **FOREIGN** **KEY** (model\_id) **REFERENCES** **public**.models(id) **ON** **DELETE** **CASCADE**;

--

-- TOC entry 3250 (class 2606 OID 49545)

-- Name: cars model; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.cars

**ADD** **CONSTRAINT** model **FOREIGN** **KEY** (model\_id) **REFERENCES** **public**.models(id) **ON** **DELETE** **CASCADE**;

--

-- TOC entry 3247 (class 2606 OID 49495)

-- Name: workers position; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.workers

**ADD** **CONSTRAINT** "position" **FOREIGN** **KEY** (position\_id) **REFERENCES** **public**.positions(id) **ON** **DELETE** **CASCADE**;

--

-- TOC entry 3258 (class 2606 OID 49610)

-- Name: violations traffic\_violation; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.violations

**ADD** **CONSTRAINT** traffic\_violation **FOREIGN** **KEY** (traffic\_violation\_id) **REFERENCES** **public**.traffic\_violation(id) **ON** **DELETE** **CASCADE**;

--

-- TOC entry 3253 (class 2606 OID 49577)

-- Name: contracts worker; Type: FK CONSTRAINT; Schema: public; Owner: dbmishakorni

--

**ALTER** **TABLE** **ONLY** **public**.contracts

**ADD** **CONSTRAINT** worker **FOREIGN** **KEY** (worker\_id) **REFERENCES** **public**.workers(id) **ON** **DELETE** **SET** **NULL**;

--

-- TOC entry 3417 (class 0 OID 0)

-- Dependencies: 4

-- Name: SCHEMA public; Type: ACL; Schema: -; Owner: postgres

--

**REVOKE** **USAGE** **ON** **SCHEMA** **public** **FROM** **PUBLIC**;

**GRANT** **ALL** **ON** **SCHEMA** **public** **TO** **PUBLIC**;

-- Completed on 2023-10-24 23:29:58

--

-- PostgreSQL database dump complete

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# Вывод

В рамках лабораторного задания я изучил взаимодействие с базами данных в PostgreSQL используя инструмент pgAdmin 4. Я разработал схему базы данных, включая таблицы и их ограничения, заполнил их информацией, создал бэкапы и успешно провёл процедуру восстановления, подтвердив правильность выполненных действий.