**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»**

Автор: Едигарева Д.Р.

Факультет: ИКТ

Группа: К3239

Преподаватель: Говорова М.М.



Санкт-Петербург 2023

**Оглавление**

Цель работы 3

Овладеть практическими навыками создания таблиц базы данных PostgreSQL 1Х, заполнения их рабочими данными, резервного копирования и восстановления БД. 3

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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

1. Создать базу данных с использованием pgAdmin 4 (согласно индивидуальному заданию).
2. Создать схему в составе базы данных.
3. Создать таблицы базы данных.
4. Установить ограничения на данные: Primary Key, Unique, Check, Foreign Key.
5. Заполнить таблицы БД рабочими данными.
6. 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  .

1. Восстановить БД.

# Вариант 12. БД «Прокат автомобилей»

**Описание предметной области:**

 Компания предоставляет прокат автомобилей. В пункт проката обращаются клиенты, данные о которых регистрируют в базе. Цена проката зависит от марки автомобиля, технических характеристик и года выпуска.

Для проката авто с клиентом заключается договор, в котором фиксируется период проката, вид страховки, стоимость страховки, залоговая стоимость. Залоговая стоимость возвращается полностью или частично клиенту, в зависимости от страховки, аварий и штрафов. Если залоговая стоимость уже возвращена клиенту, но на авто в компанию пришел штраф, то он оплачивается компанией, а не клиентом.  При передаче авто клиенту составляется акт о передаче автомобиля клиенту. При возвращении автомобиля также составляется акт о передаче авто компании.

Если клиент не вернул автомобиль в срок и не оформил продление, ему назначается штраф за каждый час просрочки.

Постоянным клиентам предоставляются скидки.

В системе необходимо хранить историю нарушений (со штрафами за вид нарушения ПДД) и аварий автомобилей. Нарушение может быть совершено во время аварии. Необходимо хранить информацию, кто оплачивает штраф: компания или клиент.

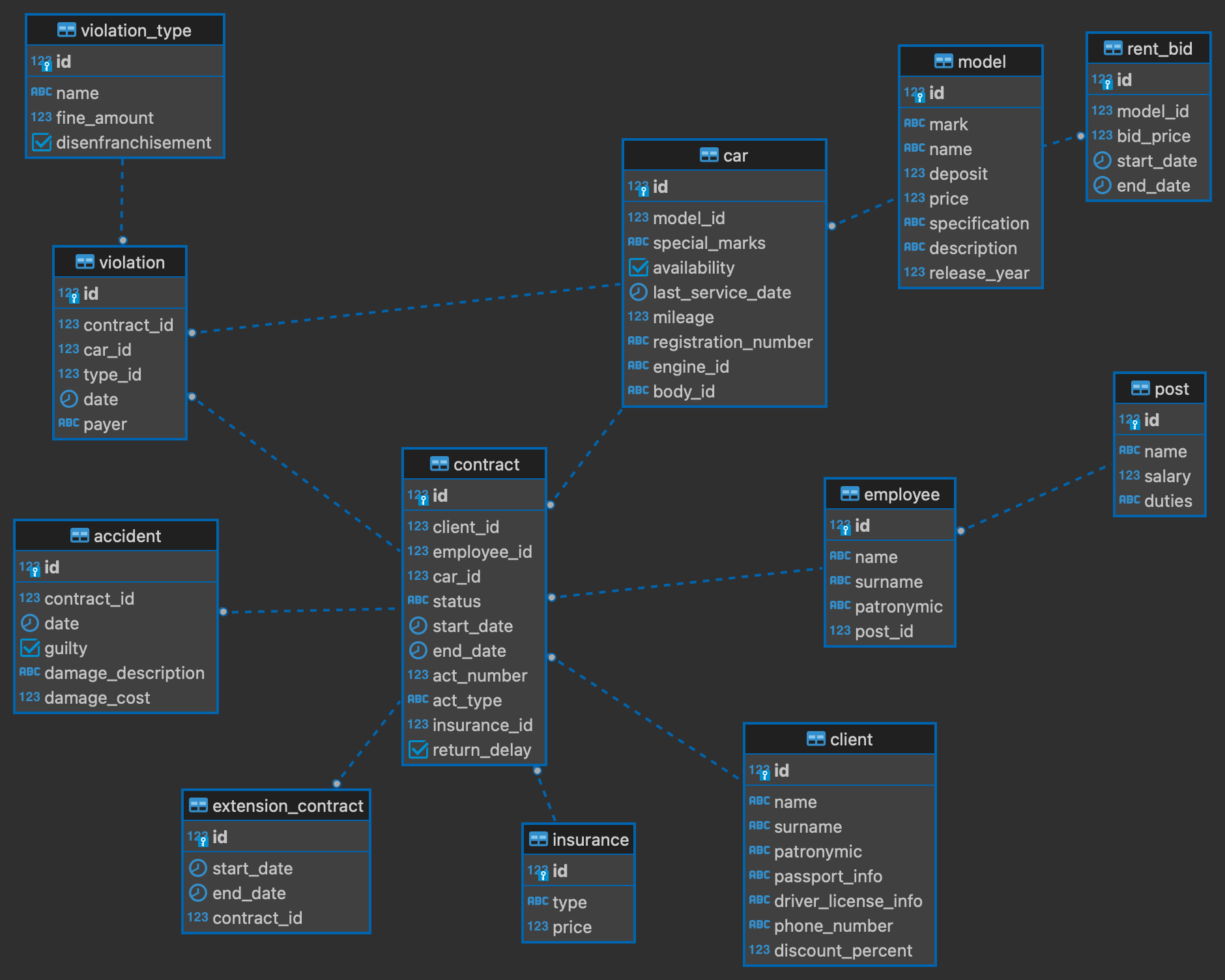
Цены на прокат автомобилей могут меняться.

БД должна содержать следующий минимальный набор сведений: ФИО. Паспортные данные. Код должности. Наименование должности. Оклад. Обязанности. Код марки. Наименование. Технические характеристики. Описание. Код автомобиля. Регистрационный номер. Номер кузова. Номер двигателя.  Год выпуска. Пробег. Цена автомобиля. Цена проката. Дата последнего ТО. Специальные отметки. Отметка о возврате. Код клиента. ФИО. Адрес. Телефон. Паспортные данные. Дата и время выдачи автомобиля. На сколько часов. Дата и время возврата автомобиля. Данные о нарушениях. Данные об авариях. Дата продления. Часов продления.

# Выполнение

Название создаваемой БД – «Каршеринг» («Carsharing»)

Схема логической модели базы данных, сгенерированная в Generate ERD



## Листинг

--

-- PostgreSQL database dump

--

-- Dumped from database version 16.0

-- Dumped by pg\_dump version 16.0

-- Started on 2023-12-07 15:48:38 MSK

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 3739 (class 1262 OID 16404)

-- Name: db\_carsharing; Type: DATABASE; Schema: -; Owner: -

--

CREATE DATABASE db\_carsharing WITH TEMPLATE = template0 ENCODING = 'UTF8' LOCALE\_PROVIDER = libc LOCALE = 'C';

\connect db\_carsharing

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: -

--

CREATE SCHEMA public;

--

-- TOC entry 3740 (class 0 OID 0)

-- Dependencies: 4

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

--

COMMENT ON SCHEMA public IS 'standard public schema';

SET default\_tablespace = '';

SET default\_table\_access\_method = heap;

--

-- TOC entry 236 (class 1259 OID 18833)

-- Name: accident; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.accident (

id integer NOT NULL,

contract\_id integer NOT NULL,

date timestamp without time zone NOT NULL,

guilty boolean NOT NULL,

damage\_description character varying(500) NOT NULL,

damage\_cost double precision NOT NULL,

CONSTRAINT ck\_accident\_date CHECK ((date <= now())),

CONSTRAINT ck\_damage\_cost CHECK ((damage\_cost >= (0)::double precision))

);

--

-- TOC entry 235 (class 1259 OID 18832)

-- Name: accident\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.accident\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3741 (class 0 OID 0)

-- Dependencies: 235

-- Name: accident\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.accident\_id\_seq OWNED BY public.accident.id;

--

-- TOC entry 230 (class 1259 OID 18774)

-- Name: car; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.car (

id integer NOT NULL,

model\_id integer NOT NULL,

special\_marks character varying(500),

availability boolean NOT NULL,

last\_service\_date timestamp without time zone NOT NULL,

mileage integer NOT NULL,

registration\_number character varying(9) NOT NULL,

engine\_id character varying(8) NOT NULL,

body\_id character varying(8) NOT NULL

);

--

-- TOC entry 229 (class 1259 OID 18773)

-- Name: car\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.car\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3742 (class 0 OID 0)

-- Dependencies: 229

-- Name: car\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.car\_id\_seq OWNED BY public.car.id;

--

-- TOC entry 220 (class 1259 OID 18720)

-- Name: client; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.client (

id integer NOT NULL,

name character varying(20) NOT NULL,

surname character varying(20) NOT NULL,

patronymic character varying(20) NOT NULL,

passport\_info character varying(50) NOT NULL,

driver\_license\_info character varying(50) NOT NULL,

phone\_number character varying(20) NOT NULL,

discount\_percent double precision NOT NULL

);

--

-- TOC entry 219 (class 1259 OID 18719)

-- Name: client\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.client\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3743 (class 0 OID 0)

-- Dependencies: 219

-- Name: client\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.client\_id\_seq OWNED BY public.client.id;

--

-- TOC entry 232 (class 1259 OID 18790)

-- Name: contract; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.contract (

id integer NOT NULL,

client\_id integer NOT NULL,

employee\_id integer NOT NULL,

car\_id integer NOT NULL,

status character varying(20) NOT NULL,

start\_date timestamp without time zone NOT NULL,

end\_date timestamp without time zone NOT NULL,

act\_number integer NOT NULL,

act\_type character varying(50) NOT NULL,

insurance\_id integer NOT NULL,

return\_delay boolean NOT NULL,

CONSTRAINT ck\_act\_type CHECK (((act\_type)::text = ANY ((ARRAY['Rent'::character varying, 'Return'::character varying, 'Extension'::character varying])::text[]))),

CONSTRAINT ck\_contract\_status CHECK (((status)::text = ANY ((ARRAY['Active'::character varying, 'Done'::character varying, 'Canceled'::character varying])::text[]))),

CONSTRAINT ck\_start\_end\_dates CHECK ((start\_date <= end\_date))

);

--

-- TOC entry 231 (class 1259 OID 18789)

-- Name: contract\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.contract\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3744 (class 0 OID 0)

-- Dependencies: 231

-- Name: contract\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.contract\_id\_seq OWNED BY public.contract.id;

--

-- TOC entry 226 (class 1259 OID 18748)

-- Name: employee; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.employee (

id integer NOT NULL,

name character varying(20) NOT NULL,

surname character varying(20) NOT NULL,

patronymic character varying(20) NOT NULL,

post\_id integer NOT NULL

);

--

-- TOC entry 225 (class 1259 OID 18747)

-- Name: employee\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.employee\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3745 (class 0 OID 0)

-- Dependencies: 225

-- Name: employee\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.employee\_id\_seq OWNED BY public.employee.id;

--

-- TOC entry 234 (class 1259 OID 18820)

-- Name: extension\_contract; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.extension\_contract (

id integer NOT NULL,

start\_date timestamp without time zone NOT NULL,

end\_date timestamp without time zone NOT NULL,

contract\_id integer NOT NULL,

CONSTRAINT ck\_start\_end\_dates CHECK ((start\_date <= end\_date))

);

--

-- TOC entry 233 (class 1259 OID 18819)

-- Name: extension\_contract\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.extension\_contract\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3746 (class 0 OID 0)

-- Dependencies: 233

-- Name: extension\_contract\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.extension\_contract\_id\_seq OWNED BY public.extension\_contract.id;

--

-- TOC entry 222 (class 1259 OID 18729)

-- Name: insurance; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.insurance (

id integer NOT NULL,

type character varying(50) NOT NULL,

price double precision NOT NULL,

CONSTRAINT ck\_price\_non\_negative CHECK ((price >= (0)::double precision))

);

--

-- TOC entry 221 (class 1259 OID 18728)

-- Name: insurance\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.insurance\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3747 (class 0 OID 0)

-- Dependencies: 221

-- Name: insurance\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.insurance\_id\_seq OWNED BY public.insurance.id;

--

-- TOC entry 224 (class 1259 OID 18737)

-- Name: model; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.model (

id integer NOT NULL,

mark character varying(50) NOT NULL,

name character varying(50) NOT NULL,

deposit double precision NOT NULL,

price double precision NOT NULL,

specification character varying(500) NOT NULL,

description character varying(500) NOT NULL,

release\_year integer NOT NULL,

CONSTRAINT ck\_deposit\_non\_negative CHECK ((deposit >= (0)::double precision)),

CONSTRAINT ck\_price\_non\_negative CHECK ((price >= (0)::double precision))

);

--

-- TOC entry 223 (class 1259 OID 18736)

-- Name: model\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.model\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3748 (class 0 OID 0)

-- Dependencies: 223

-- Name: model\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.model\_id\_seq OWNED BY public.model.id;

--

-- TOC entry 218 (class 1259 OID 18709)

-- Name: post; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.post (

id integer NOT NULL,

name character varying(50) NOT NULL,

salary double precision NOT NULL,

duties character varying(500) NOT NULL

);

--

-- TOC entry 217 (class 1259 OID 18708)

-- Name: post\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.post\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3749 (class 0 OID 0)

-- Dependencies: 217

-- Name: post\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.post\_id\_seq OWNED BY public.post.id;

--

-- TOC entry 228 (class 1259 OID 18760)

-- Name: rent\_bid; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.rent\_bid (

id integer NOT NULL,

model\_id integer NOT NULL,

bid\_price double precision NOT NULL,

start\_date timestamp without time zone NOT NULL,

end\_date timestamp without time zone NOT NULL,

CONSTRAINT ck\_bid\_price\_non\_negative CHECK ((bid\_price >= (0)::double precision)),

CONSTRAINT ck\_start\_end\_dates CHECK ((start\_date <= end\_date))

);

--

-- TOC entry 227 (class 1259 OID 18759)

-- Name: rent\_bid\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.rent\_bid\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3750 (class 0 OID 0)

-- Dependencies: 227

-- Name: rent\_bid\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.rent\_bid\_id\_seq OWNED BY public.rent\_bid.id;

--

-- TOC entry 238 (class 1259 OID 18849)

-- Name: violation; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.violation (

id integer NOT NULL,

contract\_id integer NOT NULL,

car\_id integer NOT NULL,

type\_id integer NOT NULL,

date timestamp without time zone NOT NULL,

payer character varying(50) NOT NULL,

CONSTRAINT ck\_payer CHECK (((payer)::text = ANY ((ARRAY['Company'::character varying, 'User'::character varying, 'Third-party'::character varying])::text[]))),

CONSTRAINT ck\_violation\_date CHECK ((date <= now()))

);

--

-- TOC entry 237 (class 1259 OID 18848)

-- Name: violation\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.violation\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3751 (class 0 OID 0)

-- Dependencies: 237

-- Name: violation\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.violation\_id\_seq OWNED BY public.violation.id;

--

-- TOC entry 216 (class 1259 OID 18700)

-- Name: violation\_type; Type: TABLE; Schema: public; Owner: -

--

CREATE TABLE public.violation\_type (

id integer NOT NULL,

name character varying(50) NOT NULL,

fine\_amount double precision NOT NULL,

disenfranchisement boolean NOT NULL

);

--

-- TOC entry 215 (class 1259 OID 18699)

-- Name: violation\_type\_id\_seq; Type: SEQUENCE; Schema: public; Owner: -

--

CREATE SEQUENCE public.violation\_type\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

--

-- TOC entry 3752 (class 0 OID 0)

-- Dependencies: 215

-- Name: violation\_type\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: -

--

ALTER SEQUENCE public.violation\_type\_id\_seq OWNED BY public.violation\_type.id;

--

-- TOC entry 3508 (class 2604 OID 18836)

-- Name: accident id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.accident ALTER COLUMN id SET DEFAULT nextval('public.accident\_id\_seq'::regclass);

--

-- TOC entry 3505 (class 2604 OID 18777)

-- Name: car id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.car ALTER COLUMN id SET DEFAULT nextval('public.car\_id\_seq'::regclass);

--

-- TOC entry 3500 (class 2604 OID 18723)

-- Name: client id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.client ALTER COLUMN id SET DEFAULT nextval('public.client\_id\_seq'::regclass);

--

-- TOC entry 3506 (class 2604 OID 18793)

-- Name: contract id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.contract ALTER COLUMN id SET DEFAULT nextval('public.contract\_id\_seq'::regclass);

--

-- TOC entry 3503 (class 2604 OID 18751)

-- Name: employee id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.employee ALTER COLUMN id SET DEFAULT nextval('public.employee\_id\_seq'::regclass);

--

-- TOC entry 3507 (class 2604 OID 18823)

-- Name: extension\_contract id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.extension\_contract ALTER COLUMN id SET DEFAULT nextval('public.extension\_contract\_id\_seq'::regclass);

--

-- TOC entry 3501 (class 2604 OID 18732)

-- Name: insurance id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.insurance ALTER COLUMN id SET DEFAULT nextval('public.insurance\_id\_seq'::regclass);

--

-- TOC entry 3502 (class 2604 OID 18740)

-- Name: model id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.model ALTER COLUMN id SET DEFAULT nextval('public.model\_id\_seq'::regclass);

--

-- TOC entry 3499 (class 2604 OID 18712)

-- Name: post id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.post ALTER COLUMN id SET DEFAULT nextval('public.post\_id\_seq'::regclass);

--

-- TOC entry 3504 (class 2604 OID 18763)

-- Name: rent\_bid id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.rent\_bid ALTER COLUMN id SET DEFAULT nextval('public.rent\_bid\_id\_seq'::regclass);

--

-- TOC entry 3509 (class 2604 OID 18852)

-- Name: violation id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation ALTER COLUMN id SET DEFAULT nextval('public.violation\_id\_seq'::regclass);

--

-- TOC entry 3498 (class 2604 OID 18703)

-- Name: violation\_type id; Type: DEFAULT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation\_type ALTER COLUMN id SET DEFAULT nextval('public.violation\_type\_id\_seq'::regclass);

--

-- TOC entry 3731 (class 0 OID 18833)

-- Dependencies: 236

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

--

INSERT INTO public.accident VALUES (1, 1, '2023-10-01 00:00:00', true, 'Scratches', 1000);

--

-- TOC entry 3725 (class 0 OID 18774)

-- Dependencies: 230

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

--

INSERT INTO public.car VALUES (1, 1, 'Scratch on the door', true, '2021-01-01 00:00:00', 1567, 'A123BC48', '1345gh', '1422jdf');

INSERT INTO public.car VALUES (2, 2, '', true, '2022-12-24 00:00:00', 100, 'A123BC49', '7328di', '9237isd');

INSERT INTO public.car VALUES (3, 3, '', true, '2023-02-08 00:00:00', 123, 'A273XA55', '1234df', '1234df');

INSERT INTO public.car VALUES (4, 4, '', true, '2021-12-31 00:00:00', 345, 'X244BC50', '1523jy', '1334sff');

INSERT INTO public.car VALUES (5, 5, 'Rust on the door', true, '2021-07-12 00:00:00', 3421, 'B213XE48', '1323rf', '1454fgf');

--

-- TOC entry 3715 (class 0 OID 18720)

-- Dependencies: 220

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

--

INSERT INTO public.client VALUES (1, 'John', 'Doe', 'Smith', '123456', 'ABC123', '555-555-5555', 10);

INSERT INTO public.client VALUES (2, 'Alice', 'Johnson', 'Brown', '789012', 'XYZ789', '555-555-5556', 5);

INSERT INTO public.client VALUES (3, 'Sarah', 'Williams', 'Davis', '456789', 'LMN456', '555-555-5557', 8);

INSERT INTO public.client VALUES (4, 'Michael', 'Johnson', 'Miller', '987654', 'OPQ987', '555-555-5558', 12);

INSERT INTO public.client VALUES (5, 'Emily', 'Smith', 'Clark', '123987', 'RST123', '555-555-5559', 15);

--

-- TOC entry 3727 (class 0 OID 18790)

-- Dependencies: 232

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

--

INSERT INTO public.contract VALUES (1, 1, 2, 3, 'Active', '2023-10-01 00:00:00', '2023-10-15 00:00:00', 101, 'Rent', 4, false);

INSERT INTO public.contract VALUES (2, 2, 3, 4, 'Done', '2023-09-15 00:00:00', '2023-09-30 00:00:00', 102, 'Return', 5, true);

INSERT INTO public.contract VALUES (3, 3, 4, 5, 'Canceled', '2023-08-01 00:00:00', '2023-08-10 00:00:00', 103, 'Extension', 1, false);

INSERT INTO public.contract VALUES (4, 4, 5, 1, 'Active', '2023-07-05 00:00:00', '2023-07-20 00:00:00', 104, 'Rent', 2, true);

INSERT INTO public.contract VALUES (5, 5, 1, 2, 'Done', '2023-06-10 00:00:00', '2023-06-25 00:00:00', 105, 'Return', 3, false);

INSERT INTO public.contract VALUES (6, 2, 3, 4, 'Canceled', '2023-05-15 00:00:00', '2023-05-30 00:00:00', 106, 'Extension', 4, true);

INSERT INTO public.contract VALUES (7, 3, 4, 5, 'Active', '2023-04-20 00:00:00', '2023-04-30 00:00:00', 107, 'Rent', 5, false);

INSERT INTO public.contract VALUES (8, 4, 5, 1, 'Done', '2023-03-01 00:00:00', '2023-03-15 00:00:00', 108, 'Return', 1, true);

INSERT INTO public.contract VALUES (9, 5, 1, 2, 'Canceled', '2023-02-10 00:00:00', '2023-02-20 00:00:00', 109, 'Extension', 2, false);

--

-- TOC entry 3721 (class 0 OID 18748)

-- Dependencies: 226

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

--

INSERT INTO public.employee VALUES (1, 'John', 'Doe', 'Smith', 1);

INSERT INTO public.employee VALUES (2, 'Alice', 'Johnson', 'Brown', 2);

INSERT INTO public.employee VALUES (3, 'Sarah', 'Williams', 'Davis', 3);

INSERT INTO public.employee VALUES (4, 'Michael', 'Johnson', 'Miller', 4);

INSERT INTO public.employee VALUES (5, 'Emily', 'Smith', 'Clark', 5);

--

-- TOC entry 3729 (class 0 OID 18820)

-- Dependencies: 234

-- Data for Name: extension\_contract; Type: TABLE DATA; Schema: public; Owner: -

--

INSERT INTO public.extension\_contract VALUES (1, '2023-10-01 00:00:00', '2023-10-15 00:00:00', 1);

INSERT INTO public.extension\_contract VALUES (2, '2023-09-15 00:00:00', '2023-09-30 00:00:00', 2);

--

-- TOC entry 3717 (class 0 OID 18729)

-- Dependencies: 222

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

--

INSERT INTO public.insurance VALUES (1, 'Liability', 100);

INSERT INTO public.insurance VALUES (2, 'Comprehensive', 200);

INSERT INTO public.insurance VALUES (3, 'Collision', 150);

INSERT INTO public.insurance VALUES (4, 'Uninsured Motorist', 80);

INSERT INTO public.insurance VALUES (5, 'Personal Injury Protection', 120);

--

-- TOC entry 3719 (class 0 OID 18737)

-- Dependencies: 224

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

--

INSERT INTO public.model VALUES (1, 'Toyota', 'Camry', 500, 30000, 'Sedan', '4-door car', 2022);

INSERT INTO public.model VALUES (2, 'Ford', 'Focus', 400, 25000, 'Hatchback', '5-door car', 2021);

INSERT INTO public.model VALUES (3, 'Honda', 'Civic', 450, 28000, 'Sedan', '4-door car', 2022);

INSERT INTO public.model VALUES (4, 'Chevrolet', 'Malibu', 480, 29000, 'Sedan', '4-door car', 2021);

INSERT INTO public.model VALUES (5, 'Hyundai', 'Elantra', 460, 27000, 'Sedan', '4-door car', 2022);

--

-- TOC entry 3713 (class 0 OID 18709)

-- Dependencies: 218

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

--

INSERT INTO public.post VALUES (1, 'Manager', 120000, 'Management duties');

INSERT INTO public.post VALUES (2, 'Technician', 60000, 'Technical duties');

INSERT INTO public.post VALUES (3, 'Customer Support', 45000, 'Assisting customers');

INSERT INTO public.post VALUES (4, 'Accountant', 70000, 'Financial management');

INSERT INTO public.post VALUES (5, 'Driver', 50000, 'Driving vehicles');

--

-- TOC entry 3723 (class 0 OID 18760)

-- Dependencies: 228

-- Data for Name: rent\_bid; Type: TABLE DATA; Schema: public; Owner: -

--

INSERT INTO public.rent\_bid VALUES (1, 1, 100, '2023-10-01 00:00:00', '2023-10-15 00:00:00');

INSERT INTO public.rent\_bid VALUES (2, 2, 200, '2023-09-15 00:00:00', '2023-09-30 00:00:00');

INSERT INTO public.rent\_bid VALUES (3, 3, 150, '2023-10-01 00:00:00', '2023-10-15 00:00:00');

INSERT INTO public.rent\_bid VALUES (4, 4, 80, '2023-09-15 00:00:00', '2023-09-30 00:00:00');

INSERT INTO public.rent\_bid VALUES (5, 5, 120, '2023-10-01 00:00:00', '2023-10-15 00:00:00');

--

-- TOC entry 3733 (class 0 OID 18849)

-- Dependencies: 238

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

--

INSERT INTO public.violation VALUES (1, 1, 1, 1, '2023-10-01 00:00:00', 'Company');

--

-- TOC entry 3711 (class 0 OID 18700)

-- Dependencies: 216

-- Data for Name: violation\_type; Type: TABLE DATA; Schema: public; Owner: -

--

INSERT INTO public.violation\_type VALUES (1, 'Speeding', 100, false);

INSERT INTO public.violation\_type VALUES (2, 'Parking Violation', 50, false);

INSERT INTO public.violation\_type VALUES (3, 'DUI', 500, true);

INSERT INTO public.violation\_type VALUES (4, 'Running a Red Light', 150, false);

INSERT INTO public.violation\_type VALUES (5, 'No Seatbelt', 25, false);

INSERT INTO public.violation\_type VALUES (6, 'Illegal U-Turn', 75, false);

INSERT INTO public.violation\_type VALUES (7, 'Driving without Insurance', 300, false);

--

-- TOC entry 3753 (class 0 OID 0)

-- Dependencies: 235

-- Name: accident\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.accident\_id\_seq', 1, true);

--

-- TOC entry 3754 (class 0 OID 0)

-- Dependencies: 229

-- Name: car\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.car\_id\_seq', 5, true);

--

-- TOC entry 3755 (class 0 OID 0)

-- Dependencies: 219

-- Name: client\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.client\_id\_seq', 5, true);

--

-- TOC entry 3756 (class 0 OID 0)

-- Dependencies: 231

-- Name: contract\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.contract\_id\_seq', 9, true);

--

-- TOC entry 3757 (class 0 OID 0)

-- Dependencies: 225

-- Name: employee\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.employee\_id\_seq', 5, true);

--

-- TOC entry 3758 (class 0 OID 0)

-- Dependencies: 233

-- Name: extension\_contract\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.extension\_contract\_id\_seq', 2, true);

--

-- TOC entry 3759 (class 0 OID 0)

-- Dependencies: 221

-- Name: insurance\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.insurance\_id\_seq', 5, true);

--

-- TOC entry 3760 (class 0 OID 0)

-- Dependencies: 223

-- Name: model\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.model\_id\_seq', 5, true);

--

-- TOC entry 3761 (class 0 OID 0)

-- Dependencies: 217

-- Name: post\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.post\_id\_seq', 5, true);

--

-- TOC entry 3762 (class 0 OID 0)

-- Dependencies: 227

-- Name: rent\_bid\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.rent\_bid\_id\_seq', 5, true);

--

-- TOC entry 3763 (class 0 OID 0)

-- Dependencies: 237

-- Name: violation\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.violation\_id\_seq', 1, true);

--

-- TOC entry 3764 (class 0 OID 0)

-- Dependencies: 215

-- Name: violation\_type\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: -

--

SELECT pg\_catalog.setval('public.violation\_type\_id\_seq', 7, true);

--

-- TOC entry 3552 (class 2606 OID 18842)

-- Name: accident accident\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.accident

ADD CONSTRAINT accident\_pkey PRIMARY KEY (id);

--

-- TOC entry 3544 (class 2606 OID 18781)

-- Name: car car\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.car

ADD CONSTRAINT car\_pkey PRIMARY KEY (id);

--

-- TOC entry 3532 (class 2606 OID 18725)

-- Name: client client\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.client

ADD CONSTRAINT client\_pkey PRIMARY KEY (id);

--

-- TOC entry 3548 (class 2606 OID 18798)

-- Name: contract contract\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.contract

ADD CONSTRAINT contract\_pkey PRIMARY KEY (id);

--

-- TOC entry 3540 (class 2606 OID 18753)

-- Name: employee employee\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.employee

ADD CONSTRAINT employee\_pkey PRIMARY KEY (id);

--

-- TOC entry 3550 (class 2606 OID 18826)

-- Name: extension\_contract extension\_contract\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.extension\_contract

ADD CONSTRAINT extension\_contract\_pkey PRIMARY KEY (id);

--

-- TOC entry 3536 (class 2606 OID 18735)

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

--

ALTER TABLE ONLY public.insurance

ADD CONSTRAINT insurance\_pkey PRIMARY KEY (id);

--

-- TOC entry 3538 (class 2606 OID 18746)

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

--

ALTER TABLE ONLY public.model

ADD CONSTRAINT model\_pkey PRIMARY KEY (id);

--

-- TOC entry 3528 (class 2606 OID 18716)

-- Name: post post\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.post

ADD CONSTRAINT post\_pkey PRIMARY KEY (id);

--

-- TOC entry 3542 (class 2606 OID 18767)

-- Name: rent\_bid rent\_bid\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.rent\_bid

ADD CONSTRAINT rent\_bid\_pkey PRIMARY KEY (id);

--

-- TOC entry 3546 (class 2606 OID 18783)

-- Name: car uq\_car\_registration\_number; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.car

ADD CONSTRAINT uq\_car\_registration\_number UNIQUE (registration\_number);

--

-- TOC entry 3534 (class 2606 OID 18727)

-- Name: client uq\_client\_passport\_info; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.client

ADD CONSTRAINT uq\_client\_passport\_info UNIQUE (passport\_info);

--

-- TOC entry 3530 (class 2606 OID 18718)

-- Name: post uq\_post\_name; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.post

ADD CONSTRAINT uq\_post\_name UNIQUE (name);

--

-- TOC entry 3524 (class 2606 OID 18707)

-- Name: violation\_type uq\_violation\_type\_name; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation\_type

ADD CONSTRAINT uq\_violation\_type\_name UNIQUE (name);

--

-- TOC entry 3554 (class 2606 OID 18856)

-- Name: violation violation\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation

ADD CONSTRAINT violation\_pkey PRIMARY KEY (id);

--

-- TOC entry 3526 (class 2606 OID 18705)

-- Name: violation\_type violation\_type\_pkey; Type: CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation\_type

ADD CONSTRAINT violation\_type\_pkey PRIMARY KEY (id);

--

-- TOC entry 3563 (class 2606 OID 18843)

-- Name: accident accident\_contract\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.accident

ADD CONSTRAINT accident\_contract\_id\_fkey FOREIGN KEY (contract\_id) REFERENCES public.contract(id);

--

-- TOC entry 3557 (class 2606 OID 18784)

-- Name: car car\_model\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.car

ADD CONSTRAINT car\_model\_id\_fkey FOREIGN KEY (model\_id) REFERENCES public.model(id);

--

-- TOC entry 3558 (class 2606 OID 18809)

-- Name: contract contract\_car\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.contract

ADD CONSTRAINT contract\_car\_id\_fkey FOREIGN KEY (car\_id) REFERENCES public.car(id);

--

-- TOC entry 3559 (class 2606 OID 18799)

-- Name: contract contract\_client\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.contract

ADD CONSTRAINT contract\_client\_id\_fkey FOREIGN KEY (client\_id) REFERENCES public.client(id);

--

-- TOC entry 3560 (class 2606 OID 18804)

-- Name: contract contract\_employee\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.contract

ADD CONSTRAINT contract\_employee\_id\_fkey FOREIGN KEY (employee\_id) REFERENCES public.employee(id);

--

-- TOC entry 3561 (class 2606 OID 18814)

-- Name: contract contract\_insurance\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.contract

ADD CONSTRAINT contract\_insurance\_id\_fkey FOREIGN KEY (insurance\_id) REFERENCES public.insurance(id);

--

-- TOC entry 3555 (class 2606 OID 18754)

-- Name: employee employee\_post\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.employee

ADD CONSTRAINT employee\_post\_id\_fkey FOREIGN KEY (post\_id) REFERENCES public.post(id);

--

-- TOC entry 3562 (class 2606 OID 18827)

-- Name: extension\_contract extension\_contract\_contract\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.extension\_contract

ADD CONSTRAINT extension\_contract\_contract\_id\_fkey FOREIGN KEY (contract\_id) REFERENCES public.contract(id);

--

-- TOC entry 3556 (class 2606 OID 18768)

-- Name: rent\_bid rent\_bid\_model\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.rent\_bid

ADD CONSTRAINT rent\_bid\_model\_id\_fkey FOREIGN KEY (model\_id) REFERENCES public.model(id);

--

-- TOC entry 3564 (class 2606 OID 18862)

-- Name: violation violation\_car\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation

ADD CONSTRAINT violation\_car\_id\_fkey FOREIGN KEY (car\_id) REFERENCES public.car(id);

--

-- TOC entry 3565 (class 2606 OID 18857)

-- Name: violation violation\_contract\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation

ADD CONSTRAINT violation\_contract\_id\_fkey FOREIGN KEY (contract\_id) REFERENCES public.contract(id);

--

-- TOC entry 3566 (class 2606 OID 18867)

-- Name: violation violation\_type\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: -

--

ALTER TABLE ONLY public.violation

ADD CONSTRAINT violation\_type\_id\_fkey FOREIGN KEY (type\_id) REFERENCES public.violation\_type(id);

-- Completed on 2023-12-07 15:48:38 MSK

--

-- PostgreSQL database dump complete

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# Вывод

В данной лабораторной работе мы создали базу данных с использованием pgAdmin 4 (согласно индивидуальному заданию “Каршеринг”). В базе данных были созданы схема и таблицы, установлены ограничения на данные: Primary Key, Unique, Check, Foreign Key. БД была заполнена рабочими данными с помощью запросов к базе. Была создана резервная копия БД, также БД была восстановлена