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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ИТМО

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Оглавление

Цель работы

Овладеть практическими навыками создания таблиц базы данных PostgreSQL 1X, 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.

7. Восстановить БД.

Вариант 12. БД «Прокат автомобилей»

Описание предметной области:

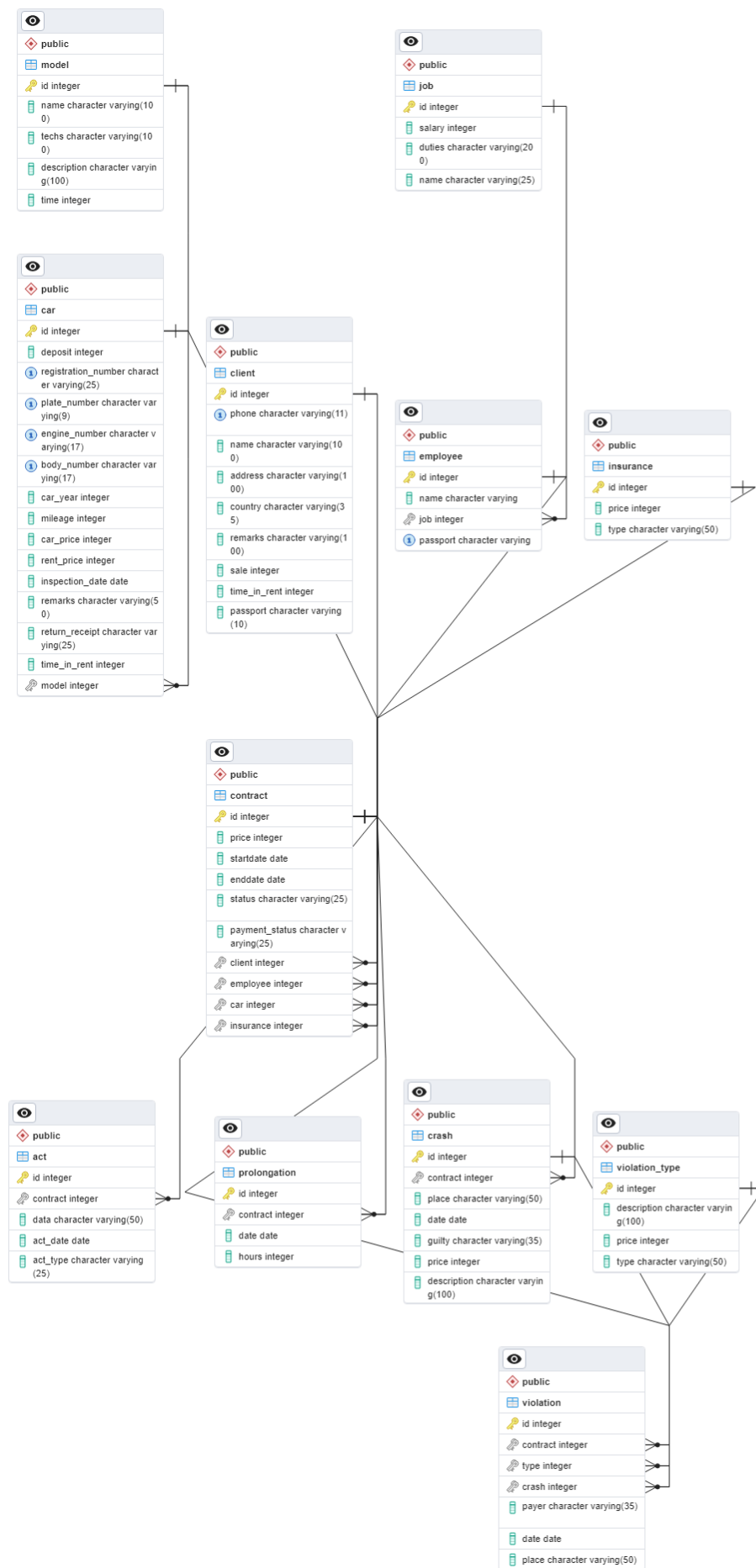Схема логической модели базы данных, сгенерированная в Generate ERD указана на рисунке 1.

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 2023-10-22 17:42:39

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 3435 (class 1262 OID 41289)
-- Name: dbalexyrkn; Type: DATABASE; Schema: -; Owner: postgres
--

CREATE DATABASE dbalexyrkn WITH TEMPLATE = template0 ENCODING = 'UTF8' LOCALE_PROVIDER
= libc LOCALE = 'C.UTF-8';


ALTER DATABASE dbalexyrkn OWNER TO postgres;

\connect dbalexyrkn

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
--

-- *not* creating schema, since initdb creates it


ALTER SCHEMA public OWNER TO postgres;

SET default_tablespace = '';

SET default_table_access_method = heap;
```

```sql
--
-- TOC entry 216 (class 1259 OID 41574)
-- Name: act; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Создание таблицы актов
CREATE TABLE public.act (
    id integer NOT NULL,
    contract integer NOT NULL,
    data character varying(50) NOT NULL,
    act_date date NOT NULL,
    act_type character varying(25) NOT NULL
);


ALTER TABLE public.act OWNER TO dbalexyrkn;


--
-- TOC entry 210 (class 1259 OID 41308)
-- Name: car; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Создание таблицы машин
CREATE TABLE public.car (
    id integer NOT NULL,
    deposit integer NOT NULL,
    registration_number character varying(25) NOT NULL,
    plate_number character varying(9) NOT NULL,
    engine_number character varying(17) NOT NULL,
    body_number character varying(17) NOT NULL,
    car_year integer NOT NULL,
    mileage integer DEFAULT 0 NOT NULL,
    car_price integer NOT NULL,
    rent_price integer NOT NULL,
    inspection_date date NOT NULL,
    remarks character varying(50),
    return_receipt character varying(25),
    time_in_rent integer DEFAULT 0 NOT NULL,
    model integer NOT NULL
);


ALTER TABLE public.car OWNER TO dbalexyrkn;


--
-- TOC entry 214 (class 1259 OID 41511)
-- Name: client; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Создание таблицы клиентов
CREATE TABLE public.client (
    id integer NOT NULL,
    phone character varying(11) NOT NULL,
    name character varying(100) NOT NULL,
    address character varying(100) NOT NULL,
    country character varying(35) NOT NULL,
    remarks character varying(100),
    sale integer DEFAULT 0 NOT NULL,
    time_in_rent integer DEFAULT 0 NOT NULL,
```

```sql
    passport character varying(10) NOT NULL,
    CONSTRAINT sale CHECK (((sale >= 0) AND (sale <= 100)))
);


ALTER TABLE public.client OWNER TO dbalexyrkn;

--
-- TOC entry 215 (class 1259 OID 41521)
-- Name: contract; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Создание таблицы договоров
CREATE TABLE public.contract (
    id integer NOT NULL,
    price integer NOT NULL,
    startdate date NOT NULL,
    enddate date NOT NULL,
    status character varying(25) NOT NULL,
    payment_status character varying(25) NOT NULL,
    client integer NOT NULL,
    employee integer NOT NULL,
    car integer NOT NULL,
    insurance integer NOT NULL,
    CONSTRAINT "start < end" CHECK ((startdate < enddate)),
    CONSTRAINT startdate CHECK ((startdate > '2023-10-20'::date))
);


ALTER TABLE public.contract OWNER TO dbalexyrkn;

--
-- TOC entry 218 (class 1259 OID 41595)
-- Name: crash; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Создание таблицы аварий
CREATE TABLE public.crash (
    id integer NOT NULL,
    contract integer NOT NULL,
    place character varying(50) NOT NULL,
    date date NOT NULL,
    guilty character varying(35) NOT NULL,
    price integer NOT NULL,
    description character varying(100) NOT NULL,
    CONSTRAINT price CHECK ((price > 0))
);


ALTER TABLE public.crash OWNER TO dbalexyrkn;

--
-- TOC entry 213 (class 1259 OID 41489)
-- Name: employee; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Создание таблицы сотрудников
CREATE TABLE public.employee (
    id integer NOT NULL,
    name character varying NOT NULL,
```

```sql
    job integer NOT NULL,
    passport character varying NOT NULL
);


ALTER TABLE public.employee OWNER TO dbalexyrkn;


--
-- TOC entry 211 (class 1259 OID 41477)
-- Name: insurance; Type: TABLE; Schema: public; Owner: dbalexyrkn
--

-- Создание таблицы страховок
CREATE TABLE public.insurance (
    id integer NOT NULL,
    price integer NOT NULL,
    type character varying(50) NOT NULL,
    CONSTRAINT price CHECK ((price > 0))
);


ALTER TABLE public.insurance OWNER TO dbalexyrkn;


--
-- TOC entry 212 (class 1259 OID 41483)
-- Name: job; Type: TABLE; Schema: public; Owner: dbalexyrkn
--

-- Создание таблицы должностей
CREATE TABLE public.job (
    id integer NOT NULL,
    salary integer NOT NULL,
    duties character varying(200) NOT NULL,
    name character varying(25) NOT NULL,
    CONSTRAINT salary CHECK ((salary > 0))
);


ALTER TABLE public.job OWNER TO dbalexyrkn;


--
-- TOC entry 209 (class 1259 OID 41290)
-- Name: model; Type: TABLE; Schema: public; Owner: dbalexyrkn
--

-- Создание таблицы марок машин
CREATE TABLE public.model (
    id integer NOT NULL,
    name character varying(100) NOT NULL,
    techs character varying(100) NOT NULL,
    description character varying(100) NOT NULL,
    "time" integer DEFAULT 0 NOT NULL
);


ALTER TABLE public.model OWNER TO dbalexyrkn;


--
-- TOC entry 217 (class 1259 OID 41584)
-- Name: prolongation; Type: TABLE; Schema: public; Owner: dbalexyrkn
```

```sql
--

-- Создание таблицы продление
CREATE TABLE public.prolongation (
    id integer NOT NULL,
    contract integer NOT NULL,
    date date NOT NULL,
    hours integer NOT NULL,
    CONSTRAINT hours CHECK ((hours > 0))
);


ALTER TABLE public.prolongation OWNER TO dbalexyrkn;

--
-- TOC entry 220 (class 1259 OID 41612)
-- Name: violation; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Создание таблицы нарушений
CREATE TABLE public.violation (
    id integer NOT NULL,
    contract integer NOT NULL,
    type integer NOT NULL,
    crash integer NOT NULL,
    payer character varying(35) NOT NULL,
    date date NOT NULL,
    place character varying(50) NOT NULL
);


ALTER TABLE public.violation OWNER TO dbalexyrkn;

--
-- TOC entry 219 (class 1259 OID 41606)
-- Name: violation_type; Type: TABLE; Schema: public; Owner: dbalexyrkn
--


-- Созданией таблицы типов нарушений
CREATE TABLE public.violation_type (
    id integer NOT NULL,
    description character varying(100) NOT NULL,
    price integer NOT NULL,
    type character varying(50) NOT NULL,
    CONSTRAINT price CHECK ((price > 0))
);


ALTER TABLE public.violation_type OWNER TO dbalexyrkn;

-- Вставка рабочий данных

--
-- TOC entry 3425 (class 0 OID 41574)
-- Dependencies: 216
-- Data for Name: act; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.act VALUES (1, 1, 'Some data content', '2023-10-06', 'Type A');
INSERT INTO public.act VALUES (2, 2, 'Another data content', '2023-10-12', 'Type B');
```

```sql
INSERT INTO public.act VALUES (3, 3, 'Yet another data content', '2023-10-08', 'Type C');



--
-- TOC entry 3419 (class 0 OID 41308)
-- Dependencies: 210
-- Data for Name: car; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.car VALUES (1, 500, 'XYZ1234', 'ABC-123', 'ENG001', 'BODY001', 2023, 1200, 25000, 1000, '2023-10-01', 'No remarks', 'false', 0, 1);
INSERT INTO public.car VALUES (2, 600, 'LMN5678', 'DEF-456', 'ENG002', 'BODY002', 2023, 5400, 30000, 1100, '2023-09-20', 'Good condition', 'false', 0, 2);
INSERT INTO public.car VALUES (3, 700, 'OPQ9101', 'GHI-789', 'ENG003', 'BODY003', 2022, 6800, 35000, 1300, '2023-07-18', 'Minor scratches', 'false', 0, 3);



--
-- TOC entry 3423 (class 0 OID 41511)
-- Dependencies: 214
-- Data for Name: client; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.client VALUES (1, '+1234567890', 'John Doe', '123 Elm St, Springfield', 'USA', NULL, 10, 0, 'P123456789');
INSERT INTO public.client VALUES (2, '+0987654321', 'Alice Brown', '456 Maple St, Metropolis', 'Canada', NULL, 5, 0, 'P234567890');
INSERT INTO public.client VALUES (3, '+1122334455', 'Charlie White', '789 Pine St, Gotham', 'UK', NULL, 7, 0, 'P345678901');



--
-- TOC entry 3424 (class 0 OID 41521)
-- Dependencies: 215
-- Data for Name: contract; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.contract VALUES (1, 250, '2023-10-21', '2023-10-25', 'Active', 'Paid', 1, 1, 1, 1);
INSERT INTO public.contract VALUES (2, 280, '2023-10-22', '2023-10-25', 'Active', 'Paid', 2, 2, 2, 2);
INSERT INTO public.contract VALUES (3, 320, '2023-11-05', '2023-11-09', 'Completed', 'Paid', 3, 3, 3, 3);



--
-- TOC entry 3427 (class 0 OID 41595)
-- Dependencies: 218
-- Data for Name: crash; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.crash VALUES (1, 1, 'Downtown', '2023-10-05', 'Client', 100, 'Minor dent on the rear bumper.');
INSERT INTO public.crash VALUES (2, 2, 'Suburbia', '2023-10-11', 'Nature', 150, 'Broken windshield from a tree branch.');
INSERT INTO public.crash VALUES (3, 3, 'Uptown', '2023-10-07', 'Client', 70, 'Scratch on the left door.');
```

```sql
--
-- TOC entry 3422 (class 0 OID 41489)
-- Dependencies: 213
-- Data for Name: employee; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.employee VALUES (1, 'Jane Smith', 1, 'P987654321');
INSERT INTO public.employee VALUES (2, 'Eve Green', 2, 'P876543210');
INSERT INTO public.employee VALUES (3, 'Lucas Gray', 3, 'P765432109');


--
-- TOC entry 3420 (class 0 OID 41477)
-- Dependencies: 211
-- Data for Name: insurance; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.insurance VALUES (1, 150, 'Basic Coverage');
INSERT INTO public.insurance VALUES (2, 250, 'Premium Coverage');
INSERT INTO public.insurance VALUES (3, 200, 'Intermediate Coverage');


--
-- TOC entry 3421 (class 0 OID 41483)
-- Dependencies: 212
-- Data for Name: job; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.job VALUES (1, 50000, 'Manage car inventory', 'Manager');
INSERT INTO public.job VALUES (2, 40000, 'Car maintenance and repair', 'Mechanic');
INSERT INTO public.job VALUES (3, 30000, 'Customer relations and bookings',
'Receptionist');


--
-- TOC entry 3418 (class 0 OID 41290)
-- Dependencies: 209
-- Data for Name: model; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.model VALUES (1, 'Sedan X', 'Hybrid', 'A compact sedan with a hybrid
powertrain.', 0);
INSERT INTO public.model VALUES (2, 'Coupe Z', 'Electric', 'Two-door sports car with an
electric powertrain.', 0);
INSERT INTO public.model VALUES (3, 'SUV Y', 'Diesel', 'Spacious SUV with a diesel
engine.', 0);


--
-- TOC entry 3426 (class 0 OID 41584)
-- Dependencies: 217
-- Data for Name: prolongation; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.prolongation VALUES (1, 1, '2023-10-07', 24);
INSERT INTO public.prolongation VALUES (2, 2, '2023-10-13', 48);
INSERT INTO public.prolongation VALUES (3, 3, '2023-10-10', 36);


--
```

```sql
--
-- TOC entry 3429 (class 0 OID 41612)
-- Dependencies: 220
-- Data for Name: violation; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.violation VALUES (1, 1, 1, 1, 'Client', '2023-10-05', 'Downtown');
INSERT INTO public.violation VALUES (2, 2, 2, 2, 'Client', '2023-10-14', 'Highway');
INSERT INTO public.violation VALUES (3, 3, 3, 3, 'Client', '2023-10-07', 'Main
Street');


--
-- TOC entry 3428 (class 0 OID 41606)
-- Dependencies: 219
-- Data for Name: violation_type; Type: TABLE DATA; Schema: public; Owner: dbalexyrkn
--

INSERT INTO public.violation_type VALUES (1, 'Parking violation', 50, 'Parking');
INSERT INTO public.violation_type VALUES (2, 'Speeding violation', 100, 'Speeding');
INSERT INTO public.violation_type VALUES (3, 'Red light violation', 80, 'Traffic
Light');


-- Добавление ограничений и FK, PK

--
-- TOC entry 3258 (class 2606 OID 41578)
-- Name: act Act_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.act
    ADD CONSTRAINT "Act_pkey" PRIMARY KEY (id);


--
-- TOC entry 3234 (class 2606 OID 41465)
-- Name: car Body number; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.car
    ADD CONSTRAINT "Body number" UNIQUE (body_number);


--
-- TOC entry 3236 (class 2606 OID 41314)
-- Name: car Car_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.car
    ADD CONSTRAINT "Car_pkey" PRIMARY KEY (id);


--
-- TOC entry 3252 (class 2606 OID 41518)
-- Name: client Client_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.client
    ADD CONSTRAINT "Client_pkey" PRIMARY KEY (id);
```

```
--
-- TOC entry 3256 (class 2606 OID 41527)
-- Name: contract Contract_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.contract
    ADD CONSTRAINT "Contract_pkey" PRIMARY KEY (id);



--
-- TOC entry 3262 (class 2606 OID 41600)
-- Name: crash Crash_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.crash
    ADD CONSTRAINT "Crash_pkey" PRIMARY KEY (id);



--
-- TOC entry 3248 (class 2606 OID 41495)
-- Name: employee Employee_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.employee
    ADD CONSTRAINT "Employee_pkey" PRIMARY KEY (id);



--
-- TOC entry 3238 (class 2606 OID 41463)
-- Name: car Engine number; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.car
    ADD CONSTRAINT "Engine number" UNIQUE (engine_number);



--
-- TOC entry 3244 (class 2606 OID 41482)
-- Name: insurance Insurance_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.insurance
    ADD CONSTRAINT "Insurance_pkey" PRIMARY KEY (id);



--
-- TOC entry 3246 (class 2606 OID 41488)
-- Name: job Job_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.job
    ADD CONSTRAINT "Job_pkey" PRIMARY KEY (id);



--
-- TOC entry 3232 (class 2606 OID 41295)
-- Name: model Model_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--
```

```sql
ALTER TABLE ONLY public.model
    ADD CONSTRAINT "Model_pkey" PRIMARY KEY (id);


--
-- TOC entry 3240 (class 2606 OID 41461)
-- Name: car Plate number; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.car
    ADD CONSTRAINT "Plate number" UNIQUE (plate_number);


--
-- TOC entry 3260 (class 2606 OID 41589)
-- Name: prolongation Prolongation_pkey; Type: CONSTRAINT; Schema: public; Owner:
dbalexyrkn
--

ALTER TABLE ONLY public.prolongation
    ADD CONSTRAINT "Prolongation_pkey" PRIMARY KEY (id);


--
-- TOC entry 3242 (class 2606 OID 41459)
-- Name: car Registration number; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.car
    ADD CONSTRAINT "Registration number" UNIQUE (registration_number);


--
-- TOC entry 3266 (class 2606 OID 41616)
-- Name: violation Violation_pkey; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.violation
    ADD CONSTRAINT "Violation_pkey" PRIMARY KEY (id);


--
-- TOC entry 3264 (class 2606 OID 41611)
-- Name: violation_type Violation_type_pkey; Type: CONSTRAINT; Schema: public; Owner:
dbalexyrkn
--

ALTER TABLE ONLY public.violation_type
    ADD CONSTRAINT "Violation_type_pkey" PRIMARY KEY (id);


--
-- TOC entry 3217 (class 2606 OID 41475)
-- Name: car car_price; Type: CHECK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE public.car
    ADD CONSTRAINT car_price CHECK ((car_price >= 0)) NOT VALID;
```

```sql
--
-- TOC entry 3218 (class 2606 OID 41472)
-- Name: car car_year; Type: CHECK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--


ALTER TABLE public.car
    ADD CONSTRAINT car_year CHECK ((car_year >= 1950)) NOT VALID;



--
-- TOC entry 3219 (class 2606 OID 41473)
-- Name: car mileage; Type: CHECK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--


ALTER TABLE public.car
    ADD CONSTRAINT mileage CHECK ((mileage >= 0)) NOT VALID;



--
-- TOC entry 3250 (class 2606 OID 41633)
-- Name: employee passport; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--


ALTER TABLE ONLY public.employee
    ADD CONSTRAINT passport UNIQUE (passport);



--
-- TOC entry 3254 (class 2606 OID 41520)
-- Name: client phone; Type: CONSTRAINT; Schema: public; Owner: dbalexyrkn
--


ALTER TABLE ONLY public.client
    ADD CONSTRAINT phone UNIQUE (phone);



--
-- TOC entry 3225 (class 2606 OID 41548)
-- Name: contract price; Type: CHECK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--


ALTER TABLE public.contract
    ADD CONSTRAINT price CHECK ((price > 0)) NOT VALID;



--
-- TOC entry 3220 (class 2606 OID 41474)
-- Name: car rent_price; Type: CHECK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--


ALTER TABLE public.car
    ADD CONSTRAINT rent_price CHECK ((rent_price >= 0)) NOT VALID;



--
-- TOC entry 3221 (class 2606 OID 41476)
-- Name: car time_in_rent; Type: CHECK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--


ALTER TABLE public.car
```

```sql
    ADD CONSTRAINT time_in_rent CHECK ((time_in_rent >= 0)) NOT VALID;


--
-- TOC entry 3267 (class 2606 OID 41466)
-- Name: car Model; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.car
    ADD CONSTRAINT "Model" FOREIGN KEY (model) REFERENCES public.model(id) ON DELETE
CASCADE NOT VALID;



--
-- TOC entry 3269 (class 2606 OID 41564)
-- Name: contract car; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.contract
    ADD CONSTRAINT car FOREIGN KEY (car) REFERENCES public.car(id) ON DELETE SET NULL
NOT VALID;



--
-- TOC entry 3270 (class 2606 OID 41554)
-- Name: contract client; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.contract
    ADD CONSTRAINT client FOREIGN KEY (client) REFERENCES public.client(id) ON DELETE
SET NULL NOT VALID;



--
-- TOC entry 3273 (class 2606 OID 41579)
-- Name: act contract; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.act
    ADD CONSTRAINT contract FOREIGN KEY (contract) REFERENCES public.contract(id) ON
DELETE CASCADE;



--
-- TOC entry 3274 (class 2606 OID 41590)
-- Name: prolongation contract; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.prolongation
    ADD CONSTRAINT contract FOREIGN KEY (contract) REFERENCES public.contract(id) ON
DELETE CASCADE;



--
-- TOC entry 3275 (class 2606 OID 41601)
-- Name: crash contract; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.crash
```

```sql
    ADD CONSTRAINT contract FOREIGN KEY (contract) REFERENCES public.contract(id) ON
DELETE SET NULL;


--
-- TOC entry 3276 (class 2606 OID 41617)
-- Name: violation contract; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.violation
    ADD CONSTRAINT contract FOREIGN KEY (contract) REFERENCES public.contract(id) ON
DELETE SET NULL;


--
-- TOC entry 3277 (class 2606 OID 41627)
-- Name: violation crash; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.violation
    ADD CONSTRAINT crash FOREIGN KEY (crash) REFERENCES public.crash(id) ON DELETE
CASCADE;


--
-- TOC entry 3271 (class 2606 OID 41559)
-- Name: contract employee; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.contract
    ADD CONSTRAINT employee FOREIGN KEY (employee) REFERENCES public.employee(id) ON
DELETE SET NULL NOT VALID;


--
-- TOC entry 3272 (class 2606 OID 41569)
-- Name: contract insurance; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.contract
    ADD CONSTRAINT insurance FOREIGN KEY (insurance) REFERENCES public.insurance(id) ON
DELETE SET NULL NOT VALID;


--
-- TOC entry 3268 (class 2606 OID 41549)
-- Name: employee job; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.employee
    ADD CONSTRAINT job FOREIGN KEY (job) REFERENCES public.job(id) ON DELETE CASCADE
NOT VALID;


--
-- TOC entry 3278 (class 2606 OID 41622)
-- Name: violation type; Type: FK CONSTRAINT; Schema: public; Owner: dbalexyrkn
--

ALTER TABLE ONLY public.violation
```

```
    ADD CONSTRAINT type FOREIGN KEY (type) REFERENCES public.violation_type(id) ON
DELETE SET NULL;



--
-- TOC entry 3436 (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 2023-10-22 17:42:39

--
-- PostgreSQL database dump complete
--
```

Вывод

В ходе лабораторной работы я освоил работу с базами данных в PostgreSQL через pgAdmin 4. Создал структуру базы с таблицами и ограничениями, заполнил их данными, создал резервные копии и успешно восстановил БД, подтвердив корректность всех шагов.