Министерство науки и высшего образования Российской Федерации
федеральное государственное автономное образовательное учреждение высшего образования
«НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИТМО»

Отчет

по лабораторной работе «Создание таблиц базы данных PostgreSQL. Заполнение таблиц рабочими данными»

по дисциплине «**Базы данных**»

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Цель работы: овладеть практическими навыками создания таблиц базы данных PostgreSQL 1X, заполнения их рабочими данными, резервного копирования и восстановления БД.

Оборудование: компьютерный класс.

Программное обеспечение: СУБД PostgreSQL 1X, pgAdmin 4.

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.

Ход работы:

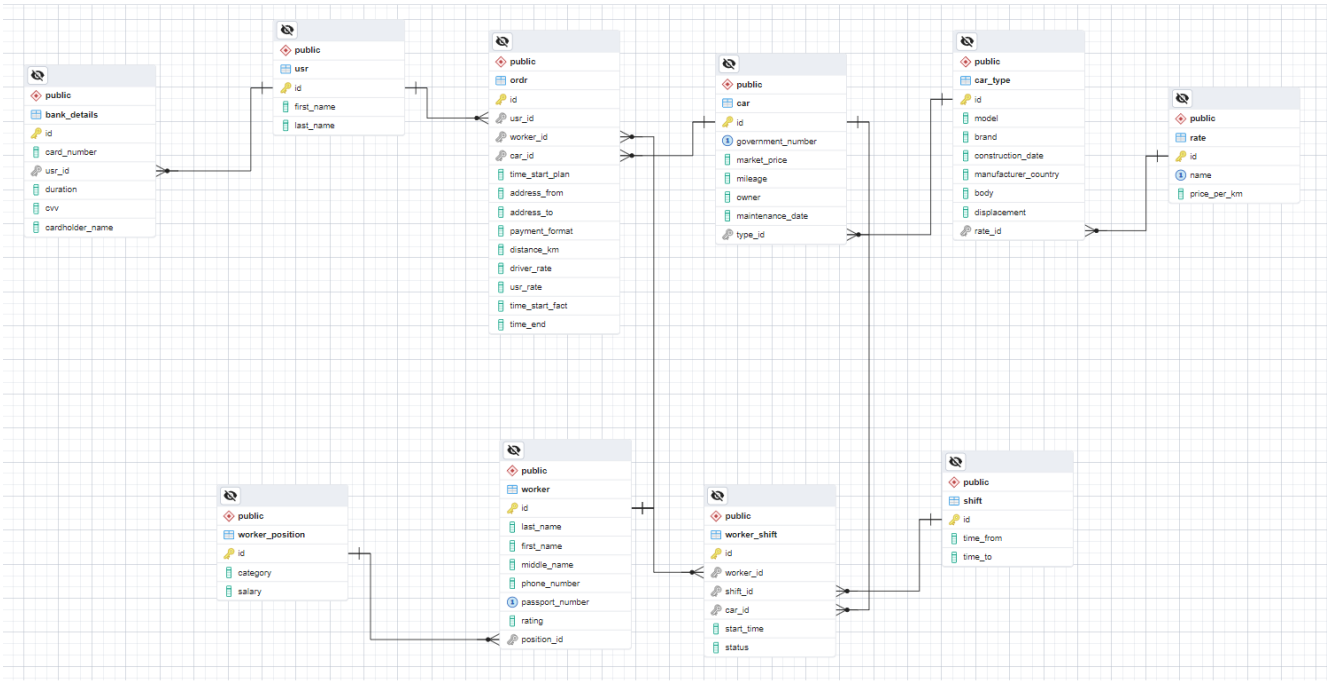
1. Создание базы данных

Для автоматизации создания базы данных я написал скрипт на языке Python, который отправляет запросы с командами создания таблиц. Полные команды можно посмотреть в приложении к отчету “create_tables.sql”. В нём содержится создание таблиц и ограничений CHECK, PRIMARY KEY, FOREIGN KEY.

2. Заполнение таблиц рабочими данными

Для заполнения таблиц рабочими данными я пользовался тем же приемом, что и в пункте 1 – написал скрипт для автоматизации процесса создания записей. При его помощи я создал и поместил в базу данных в общей сложности более 250 записей.

3. Логическая схема базы данных



4. Создание резервной копии базы данных

При помощи утилиты Pgadmin мной было создано две резервные копии – одна с расширением CUSTOM для восстановления БД, а вторая с расширением PLAIN для листинга в этом отчете. Сейчас я приведу вырезки из последней резервной копии – полный файл можно посмотреть в приложении к отчету “backup.txt”

```
--

-- PostgreSQL database dump

--


-- Dumped from database version 15.1 (Debian 15.1-1.pgdg110+1)

-- Dumped by pg_dump version 15.2


-- Started on 2023-03-15 18:44:57 UTC


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 3445 (class 1262 OID 16384)

-- Name: taxi; Type: DATABASE; Schema: -; Owner: root

--


CREATE DATABASE taxi WITH TEMPLATE = template0 ENCODING = 'UTF8'
LOCALE_PROVIDER = libc LOCALE = 'en_US.utf8';
```

```
ALTER DATABASE taxi OWNER TO root;

\connect taxi

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;

SET default_tablespace = '';

SET default_table_access_method = heap;

--
-- TOC entry 231 (class 1259 OID 16486)
-- Name: bank_details; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.bank_details (
    id integer NOT NULL,
    card_number character(16) NOT NULL,
    usr_id integer NOT NULL,
    duration character(5) NOT NULL,
    cvv character(3) NOT NULL,
    cardholder_name character varying(50) NOT NULL,
    CONSTRAINT ck_bank_details_duration CHECK ((duration ~~ '__/__'::text))
```

```
);


ALTER TABLE public.bank_details OWNER TO root;

--
-- TOC entry 230 (class 1259 OID 16485)
-- Name: bank_details_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.bank_details_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.bank_details_id_seq OWNER TO root;

--
-- TOC entry 3446 (class 0 OID 0)
-- Dependencies: 230
-- Name: bank_details_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.bank_details_id_seq OWNED BY public.bank_details.id;


--
-- TOC entry 225 (class 1259 OID 16441)
```

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

CREATE TABLE public.car (
    id integer NOT NULL,
    government_number character(9) NOT NULL,
    market_price integer NOT NULL,
    mileage integer NOT NULL,
    owner character varying(30) NOT NULL,
    maintenance_date date NOT NULL,
    type_id integer NOT NULL,
    CONSTRAINT ck_car_market_price CHECK ((market_price > 0)),
    CONSTRAINT ck_car_mileage CHECK ((mileage >= 0))
);


ALTER TABLE public.car OWNER TO root;

--
-- TOC entry 224 (class 1259 OID 16440)
-- Name: car_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.car_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;
```

```
ALTER TABLE public.car_id_seq OWNER TO root;

--
-- TOC entry 3447 (class 0 OID 0)
-- Dependencies: 224
-- Name: car_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.car_id_seq OWNED BY public.car.id;



--
-- TOC entry 223 (class 1259 OID 16428)
-- Name: car_type; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.car_type (
    id integer NOT NULL,
    model character varying(50) NOT NULL,
    brand character varying(50) NOT NULL,
    construction_date date NOT NULL,
    manufacturer_country character varying(30) NOT NULL,
    body character varying(20) NOT NULL,
    displacement double precision NOT NULL,
    rate_id integer NOT NULL,
    CONSTRAINT ck_car_type_displacement CHECK ((displacement > (0)::double precision))
);


ALTER TABLE public.car_type OWNER TO root;

--
```

```
-- TOC entry 222 (class 1259 OID 16427)
-- Name: car_type_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.car_type_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.car_type_id_seq OWNER TO root;

--
-- TOC entry 3448 (class 0 OID 0)
-- Dependencies: 222
-- Name: car_type_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.car_type_id_seq OWNED BY public.car_type.id;


--
-- TOC entry 233 (class 1259 OID 16499)
-- Name: ordr; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.ordr (
    id integer NOT NULL,
    usr_id integer NOT NULL,
```

```
    worker_id integer NOT NULL,
    car_id integer NOT NULL,
    time_start_plan timestamp without time zone NOT NULL,
    address_from character varying(200) NOT NULL,
    address_to character varying(200) NOT NULL,
    payment_format character varying(10) NOT NULL,
    distance_km double precision NOT NULL,
    driver_rate integer,
    usr_rate integer,
    time_start_fact timestamp without time zone NOT NULL,
    time_end timestamp without time zone NOT NULL,
    CONSTRAINT ck_ordr_distance CHECK ((distance_km > (0)::double precision)),
    CONSTRAINT ck_ordr_enf CHECK ((time_end > time_start_fact))
);


ALTER TABLE public.ordr OWNER TO root;

--
-- TOC entry 232 (class 1259 OID 16498)
-- Name: ordr_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.ordr_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;
```

```
ALTER TABLE public.ordr_id_seq OWNER TO root;

--
-- TOC entry 3449 (class 0 OID 0)
-- Dependencies: 232
-- Name: ordr_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.ordr_id_seq OWNED BY public.ordr.id;



--
-- TOC entry 221 (class 1259 OID 16418)
-- Name: rate; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.rate (
    id integer NOT NULL,
    name character varying(20) NOT NULL,
    price_per_km double precision NOT NULL,
    CONSTRAINT ck_rate_price_per_km CHECK ((price_per_km > (0)::double precision))
);


ALTER TABLE public.rate OWNER TO root;

--
-- TOC entry 220 (class 1259 OID 16417)
-- Name: rate_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.rate_id_seq
```

```
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.rate_id_seq OWNER TO root;

--
-- TOC entry 3450 (class 0 OID 0)
-- Dependencies: 220
-- Name: rate_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.rate_id_seq OWNED BY public.rate.id;


--
-- TOC entry 219 (class 1259 OID 16410)
-- Name: shift; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.shift (
    id integer NOT NULL,
    time_from timestamp without time zone NOT NULL,
    time_to timestamp without time zone NOT NULL,
    CONSTRAINT ck_shift_duration CHECK ((time_to > time_from))
);
```

```
ALTER TABLE public.shift OWNER TO root;

--
-- TOC entry 218 (class 1259 OID 16409)
-- Name: shift_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.shift_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.shift_id_seq OWNER TO root;

--
-- TOC entry 3451 (class 0 OID 0)
-- Dependencies: 218
-- Name: shift_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.shift_id_seq OWNED BY public.shift.id;


--
-- TOC entry 229 (class 1259 OID 16479)
-- Name: usr; Type: TABLE; Schema: public; Owner: root
--
```

```
CREATE TABLE public.usr (
    id integer NOT NULL,
    first_name character varying(50) NOT NULL,
    last_name character varying(50) NOT NULL
);


ALTER TABLE public.usr OWNER TO root;

--
-- TOC entry 228 (class 1259 OID 16478)
-- Name: usr_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.usr_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.usr_id_seq OWNER TO root;

--
-- TOC entry 3452 (class 0 OID 0)
-- Dependencies: 228
-- Name: usr_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.usr_id_seq OWNED BY public.usr.id;
```

```
--
-- TOC entry 217 (class 1259 OID 16394)
-- Name: worker; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.worker (
    id integer NOT NULL,
    last_name character varying(50) NOT NULL,
    first_name character varying(50) NOT NULL,
    middle_name character varying(50),
    phone_number character(12) NOT NULL,
    passport_number character(10) NOT NULL,
    rating integer DEFAULT 50,
    position_id integer NOT NULL,
    CONSTRAINT ck_worker_rating_range CHECK (((rating >= 1) AND (rating <= 100)))
);


ALTER TABLE public.worker OWNER TO root;

--
-- TOC entry 216 (class 1259 OID 16393)
-- Name: worker_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.worker_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
```

```
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.worker_id_seq OWNER TO root;

--
-- TOC entry 3453 (class 0 OID 0)
-- Dependencies: 216
-- Name: worker_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.worker_id_seq OWNED BY public.worker.id;


--
-- TOC entry 215 (class 1259 OID 16386)
-- Name: worker_position; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.worker_position (
    id integer NOT NULL,
    category character varying(50) NOT NULL,
    salary integer NOT NULL,
    CONSTRAINT ck_worker_position_salary CHECK ((salary > 0))
);


ALTER TABLE public.worker_position OWNER TO root;

--
-- TOC entry 214 (class 1259 OID 16385)
```

```
-- Name: worker_position_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.worker_position_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.worker_position_id_seq OWNER TO root;

--
-- TOC entry 3454 (class 0 OID 0)
-- Dependencies: 214
-- Name: worker_position_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.worker_position_id_seq OWNED BY public.worker_position.id;


--
-- TOC entry 227 (class 1259 OID 16457)
-- Name: worker_shift; Type: TABLE; Schema: public; Owner: root
--

CREATE TABLE public.worker_shift (
    id integer NOT NULL,
    worker_id integer NOT NULL,
    shift_id integer NOT NULL,
```

```
    car_id integer NOT NULL,
    start_time timestamp without time zone NOT NULL,
    status character varying(9) NOT NULL
);


ALTER TABLE public.worker_shift OWNER TO root;

--
-- TOC entry 226 (class 1259 OID 16456)
-- Name: worker_shift_id_seq; Type: SEQUENCE; Schema: public; Owner: root
--

CREATE SEQUENCE public.worker_shift_id_seq
    AS integer
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1;


ALTER TABLE public.worker_shift_id_seq OWNER TO root;

--
-- TOC entry 3455 (class 0 OID 0)
-- Dependencies: 226
-- Name: worker_shift_id_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: root
--

ALTER SEQUENCE public.worker_shift_id_seq OWNED BY public.worker_shift.id;
```

--

-- TOC entry 3230 (class 2604 OID 16522)

-- Name: bank_details id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.bank_details ALTER COLUMN id SET DEFAULT nextval('public.bank_details_id_seq'::regclass);

--

-- TOC entry 3227 (class 2604 OID 16523)

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

--

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

--

-- TOC entry 3226 (class 2604 OID 16524)

-- Name: car_type id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.car_type ALTER COLUMN id SET DEFAULT nextval('public.car_type_id_seq'::regclass);

--

-- TOC entry 3231 (class 2604 OID 16525)

-- Name: ordr id; Type: DEFAULT; Schema: public; Owner: root

--

```
ALTER TABLE ONLY public.ordr ALTER COLUMN id SET DEFAULT
nextval('public.ordr_id_seq'::regclass);



--

-- TOC entry 3225 (class 2604 OID 16526)

-- Name: rate id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.rate ALTER COLUMN id SET DEFAULT
nextval('public.rate_id_seq'::regclass);



--

-- TOC entry 3224 (class 2604 OID 16527)

-- Name: shift id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.shift ALTER COLUMN id SET DEFAULT
nextval('public.shift_id_seq'::regclass);



--

-- TOC entry 3229 (class 2604 OID 16528)

-- Name: usr id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.usr ALTER COLUMN id SET DEFAULT
nextval('public.usr_id_seq'::regclass);



--

-- TOC entry 3222 (class 2604 OID 16529)
```

-- Name: worker id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.worker ALTER COLUMN id SET DEFAULT nextval('public.worker_id_seq'::regclass);

--

-- TOC entry 3221 (class 2604 OID 16530)

-- Name: worker_position id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.worker_position ALTER COLUMN id SET DEFAULT nextval('public.worker_position_id_seq'::regclass);

--

-- TOC entry 3228 (class 2604 OID 16531)

-- Name: worker_shift id; Type: DEFAULT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.worker_shift ALTER COLUMN id SET DEFAULT nextval('public.worker_shift_id_seq'::regclass);

--

-- TOC entry 3456 (class 0 OID 0)

-- Dependencies: 230

-- Name: bank_details_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root

--

SELECT pg_catalog.setval('public.bank_details_id_seq', 1, false);

```
--
-- TOC entry 3457 (class 0 OID 0)
-- Dependencies: 224
-- Name: car_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.car_id_seq', 9, true);



--
-- TOC entry 3458 (class 0 OID 0)
-- Dependencies: 222
-- Name: car_type_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.car_type_id_seq', 10, true);



--
-- TOC entry 3459 (class 0 OID 0)
-- Dependencies: 232
-- Name: ordr_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.ordr_id_seq', 250, true);



--
-- TOC entry 3460 (class 0 OID 0)
-- Dependencies: 220
-- Name: rate_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--
```

```
SELECT pg_catalog.setval('public.rate_id_seq', 17, true);


--
-- TOC entry 3461 (class 0 OID 0)
-- Dependencies: 218
-- Name: shift_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.shift_id_seq', 5, true);


--
-- TOC entry 3462 (class 0 OID 0)
-- Dependencies: 228
-- Name: usr_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.usr_id_seq', 3, true);


--
-- TOC entry 3463 (class 0 OID 0)
-- Dependencies: 216
-- Name: worker_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.worker_id_seq', 26, true);


--
```

```
-- TOC entry 3464 (class 0 OID 0)
-- Dependencies: 214
-- Name: worker_position_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.worker_position_id_seq', 19, true);



--
-- TOC entry 3465 (class 0 OID 0)
-- Dependencies: 226
-- Name: worker_shift_id_seq; Type: SEQUENCE SET; Schema: public; Owner: root
--

SELECT pg_catalog.setval('public.worker_shift_id_seq', 1, true);



--
-- TOC entry 3265 (class 2606 OID 16491)
-- Name: bank_details bank_details_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.bank_details
    ADD CONSTRAINT bank_details_pkey PRIMARY KEY (id);



--
-- TOC entry 3257 (class 2606 OID 16448)
-- Name: car car_government_number_key; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.car
```

```
    ADD CONSTRAINT car_government_number_key UNIQUE (government_number);


--
-- TOC entry 3259 (class 2606 OID 16446)
-- Name: car car_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

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


--
-- TOC entry 3255 (class 2606 OID 16433)
-- Name: car_type car_type_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.car_type
    ADD CONSTRAINT car_type_pkey PRIMARY KEY (id);


--
-- TOC entry 3267 (class 2606 OID 16504)
-- Name: ordr ordr_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.ordr
    ADD CONSTRAINT ordr_pkey PRIMARY KEY (id);


--
-- TOC entry 3251 (class 2606 OID 16425)
```

```
-- Name: rate rate_name_key; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.rate
    ADD CONSTRAINT rate_name_key UNIQUE (name);



--
-- TOC entry 3253 (class 2606 OID 16423)
-- Name: rate rate_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.rate
    ADD CONSTRAINT rate_pkey PRIMARY KEY (id);



--
-- TOC entry 3249 (class 2606 OID 16415)
-- Name: shift shift_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.shift
    ADD CONSTRAINT shift_pkey PRIMARY KEY (id);



--
-- TOC entry 3263 (class 2606 OID 16484)
-- Name: usr usr_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.usr
    ADD CONSTRAINT usr_pkey PRIMARY KEY (id);
```

```
--
-- TOC entry 3245 (class 2606 OID 16402)
-- Name: worker worker_passport_number_key; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.worker
    ADD CONSTRAINT worker_passport_number_key UNIQUE (passport_number);


--
-- TOC entry 3247 (class 2606 OID 16400)
-- Name: worker worker_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.worker
    ADD CONSTRAINT worker_pkey PRIMARY KEY (id);


--
-- TOC entry 3243 (class 2606 OID 16391)
-- Name: worker_position worker_position_pkey; Type: CONSTRAINT; Schema: public; Owner: root
--

ALTER TABLE ONLY public.worker_position
    ADD CONSTRAINT worker_position_pkey PRIMARY KEY (id);


--
-- TOC entry 3261 (class 2606 OID 16462)
-- Name: worker_shift worker_shift_pkey; Type: CONSTRAINT; Schema: public; Owner: root
```

--

ALTER TABLE ONLY public.worker_shift

ADD CONSTRAINT worker_shift_pkey PRIMARY KEY (id);

--

-- TOC entry 3274 (class 2606 OID 16492)

-- Name: bank_details fk_bank_details_on_usr; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.bank_details

ADD CONSTRAINT fk_bank_details_on_usr FOREIGN KEY (usr_id) REFERENCES public.usr(id);

--

-- TOC entry 3270 (class 2606 OID 16451)

-- Name: car fk_car_on_car_type; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.car

ADD CONSTRAINT fk_car_on_car_type FOREIGN KEY (type_id) REFERENCES public.car_type(id);

--

-- TOC entry 3269 (class 2606 OID 16435)

-- Name: car_type fk_car_type_on_type; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.car_type

```
    ADD CONSTRAINT fk_car_type_on_type FOREIGN KEY (rate_id) REFERENCES
public.rate(id);



--

-- TOC entry 3275 (class 2606 OID 16515)

-- Name: ordr fk_ordr_on_car; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.ordr

    ADD CONSTRAINT fk_ordr_on_car FOREIGN KEY (car_id) REFERENCES public.car(id);



--

-- TOC entry 3276 (class 2606 OID 16505)

-- Name: ordr fk_ordr_on_usr; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.ordr

    ADD CONSTRAINT fk_ordr_on_usr FOREIGN KEY (usr_id) REFERENCES public.usr(id);



--

-- TOC entry 3277 (class 2606 OID 16510)

-- Name: ordr fk_ordr_on_worker; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.ordr

    ADD CONSTRAINT fk_ordr_on_worker FOREIGN KEY (worker_id) REFERENCES
public.worker(id);
```

--

-- TOC entry 3268 (class 2606 OID 16403)

-- Name: worker fk_worker_on_worker_position; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.worker

    ADD CONSTRAINT fk_worker_on_worker_position FOREIGN KEY (position_id) REFERENCES public.worker_position(id);

--

-- TOC entry 3271 (class 2606 OID 16473)

-- Name: worker_shift fk_worker_shift_on_car; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.worker_shift

    ADD CONSTRAINT fk_worker_shift_on_car FOREIGN KEY (car_id) REFERENCES public.car(id);

--

-- TOC entry 3272 (class 2606 OID 16468)

-- Name: worker_shift fk_worker_shift_on_shift; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.worker_shift

    ADD CONSTRAINT fk_worker_shift_on_shift FOREIGN KEY (shift_id) REFERENCES public.shift(id);

--

-- TOC entry 3273 (class 2606 OID 16463)

-- Name: worker_shift fk_worker_shift_on_worker; Type: FK CONSTRAINT; Schema: public; Owner: root

--

ALTER TABLE ONLY public.worker_shift

    ADD CONSTRAINT fk_worker_shift_on_worker FOREIGN KEY (worker_id) REFERENCES public.worker(id);

-- Completed on 2023-03-15 18:44:57 UTC

--

-- PostgreSQL database dump complete

--

Вывод

В ходе лабораторной работы я научился пользоваться СУБД PostgreSQL – разворачивать Docker-контейнеры с самой СУБД и графическим интерфейсом взаимодействия с ней – Pgadmin.
Также я научился пользоваться средствами вышеупомянутого инструмента для логического моделирования базы данных, резервного копирования и восстановления. По моему мнению, эти знания полезны и часто применяются на практике.