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

Отчет

по лабораторной работе №1.2 «Создание БД PostgreSQL в pgAdmin. 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.

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.

Выполнение:

БД Railroad

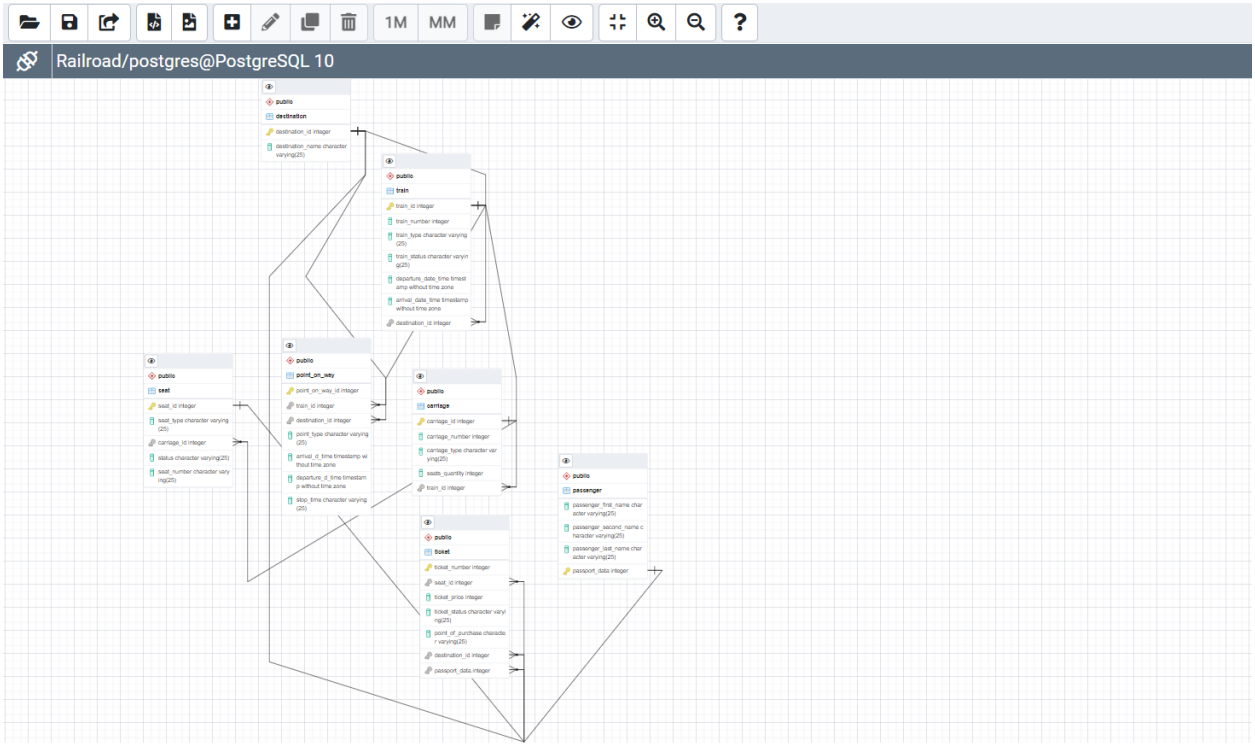

Рис.1 – ERD-схема логической модели БД

Dump, содержащий скрипты работы с БД

```
--
-- PostgreSQL database dump
--
-- Dumped from database version 10.20
-- Dumped by pg_dump version 10.20
-- Started on 2022-03-17 15:03:45

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;

DROP DATABASE "Railroad";
--
-- TOC entry 2869 (class 1262 OID 16393)
-- Name: Railroad; Type: DATABASE; Schema: -; Owner: postgres
--

CREATE DATABASE "Railroad" WITH TEMPLATE = template0 ENCODING = 'UTF8' LC_COLLATE =
'Russian_Russia.1251' LC_CTYPE = 'Russian_Russia.1251';
ALTER DATABASE "Railroad" OWNER TO postgres;
\connect "Railroad"
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 1 (class 3079 OID 12924)
-- Name: plpgsql; Type: EXTENSION; Schema: -; Owner:
--
CREATE EXTENSION IF NOT EXISTS plpgsql WITH SCHEMA pg_catalog;
--
-- TOC entry 2872 (class 0 OID 0)
-- Dependencies: 1
-- Name: EXTENSION plpgsql; Type: COMMENT; Schema: -; Owner:
--
COMMENT ON EXTENSION plpgsql IS 'PL/pgSQL procedural language';
SET default_tablespace = '';
SET default_with_oids = false;
--
-- TOC entry 196 (class 1259 OID 16394)
-- Name: train; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.train (
    train_id integer NOT NULL,
    train_number integer NOT NULL,
    train_type character varying(25) NOT NULL,
    train_status character varying(25) NOT NULL,
    departure_date_time timestamp without time zone NOT NULL,
    arrival_date_time timestamp without time zone NOT NULL,
    destination_id integer NOT NULL,
    CONSTRAINT train_check CHECK ((departure_date_time <= arrival_date_time))
);
```

```
ALTER TABLE public.train OWNER TO postgres;
--
-- TOC entry 197 (class 1259 OID 16397)
-- Name: Train_train_id_seq; Type: SEQUENCE; Schema: public; Owner: postgres
--
ALTER TABLE public.train ALTER COLUMN train_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME public."Train_train_id_seq"
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);
--
-- TOC entry 203 (class 1259 OID 16452)
-- Name: carriage; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.carriage (
    carriage_id integer NOT NULL,
    carriage_number integer NOT NULL,
    carriage_type character varying(25) NOT NULL,
    seats_quantity integer NOT NULL,
    train_id integer NOT NULL,
    CONSTRAINT carriage_carriage_number_check CHECK ((carriage_number <= 30)),
    CONSTRAINT carriage_seats_quantity_check CHECK ((seats_quantity <= 120))
);
ALTER TABLE public.carriage OWNER TO postgres;
--
-- TOC entry 208 (class 1259 OID 16543)
-- Name: carriage_carriage_id_seq; Type: SEQUENCE; Schema: public; Owner: postgres
--
ALTER TABLE public.carriage ALTER COLUMN carriage_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME public.carriage_carriage_id_seq
```

```
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);
--
-- TOC entry 200 (class 1259 OID 16417)
-- Name: destination; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.destination (
    destination_id integer NOT NULL,
    destination_name character varying(25) NOT NULL
);
ALTER TABLE public.destination OWNER TO postgres;
--
-- TOC entry 199 (class 1259 OID 16415)
-- Name: destination_destination_id_seq; Type: SEQUENCE; Schema: public; Owner: postgres
--
ALTER TABLE public.destination ALTER COLUMN destination_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME public.destination_destination_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);
--
-- TOC entry 198 (class 1259 OID 16410)
-- Name: passenger; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.passenger (
    passenger_first_name character varying(25) NOT NULL,
```

```
    passenger_second_name character varying(25),
    passenger_last_name character varying(25) NOT NULL,
    passport_data integer NOT NULL
);
ALTER TABLE public.passenger OWNER TO postgres;
--
-- TOC entry 202 (class 1259 OID 16434)
-- Name: point_on_way; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.point_on_way (
    point_on_way_id integer NOT NULL,
    train_id integer NOT NULL,
    destination_id integer NOT NULL,
    point_type character varying(25) NOT NULL,
    arrival_d_time timestamp without time zone,
    departure_d_time timestamp without time zone,
    stop_time character varying(25)
);
ALTER TABLE public.point_on_way OWNER TO postgres;
--
-- TOC entry 201 (class 1259 OID 16428)
-- Name: point_on_way_point_on_way_id_seq; Type: SEQUENCE; Schema: public; Owner: postgres
--
ALTER TABLE public.point_on_way ALTER COLUMN point_on_way_id ADD GENERATED ALWAYS AS
IDENTITY (
    SEQUENCE NAME public.point_on_way_point_on_way_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);
--
```

```
-- TOC entry 205 (class 1259 OID 16468)
-- Name: seat; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.seat (
    seat_id integer NOT NULL,
    seat_type character varying(25) NOT NULL,
    carriage_id integer NOT NULL,
    status character varying(25) NOT NULL,
    seat_number character varying(25) NOT NULL
);
ALTER TABLE public.seat OWNER TO postgres;
--
-- TOC entry 204 (class 1259 OID 16464)
-- Name: seat_seat_id_seq; Type: SEQUENCE; Schema: public; Owner: postgres
--
ALTER TABLE public.seat ALTER COLUMN seat_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME public.seat_seat_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);
--
-- TOC entry 207 (class 1259 OID 16497)
-- Name: ticket; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.ticket (
    ticket_number integer NOT NULL,
    seat_id integer NOT NULL,
    ticket_price integer NOT NULL,
    ticket_status character varying(25) NOT NULL,
    point_of_purchase character varying(25) NOT NULL,
```

```
    destination_id integer NOT NULL,
    passport_data integer NOT NULL,
    CONSTRAINT ticket_ticket_price_check CHECK ((ticket_price > 0))
);
ALTER TABLE public.ticket OWNER TO postgres;
--
-- TOC entry 206 (class 1259 OID 16491)
-- Name: ticket_ticket_number_seq; Type: SEQUENCE; Schema: public; Owner: postgres
--
ALTER TABLE public.ticket ALTER COLUMN ticket_number ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME public.ticket_ticket_number_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);
--
-- TOC entry 2858 (class 0 OID 16452)
-- Dependencies: 203
-- Data for Name: carriage; Type: TABLE DATA; Schema: public; Owner: postgres
--
INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id)
OVERRIDING SYSTEM VALUE VALUES (14, 1, 'Первый класс', 23, 14);
INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id)
OVERRIDING SYSTEM VALUE VALUES (15, 2, 'Бизнес', 52, 14);
INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id)
OVERRIDING SYSTEM VALUE VALUES (16, 3, 'Эконом', 66, 14);
INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id)
OVERRIDING SYSTEM VALUE VALUES (17, 4, 'Эконом', 64, 14);
INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id)
OVERRIDING SYSTEM VALUE VALUES (18, 5, 'Ресторан', 0, 14);
INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id)
OVERRIDING SYSTEM VALUE VALUES (19, 6, 'Эконом', 60, 14);
```

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (20, 7, 'Эконом', 66, 14);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (21, 8, 'Эконом', 66, 14);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (22, 9, 'Эконом', 66, 14);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (23, 10, 'Эконом+', 51, 14);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (24, 1, 'Первый класс', 23, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (25, 2, 'Бизнес', 52, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (26, 3, 'Эконом', 66, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (27, 4, 'Эконом', 64, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (28, 5, 'Ресторан', 0, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (29, 6, 'Эконом', 60, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (30, 7, 'Эконом', 66, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (31, 8, 'Эконом', 66, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (32, 9, 'Эконом', 66, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (33, 10, 'Эконом+', 51, 16);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (34, 1, 'Плацкарт', 54, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (35, 2, 'Плацкарт', 54, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (36, 3, 'Плацкарт', 54, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (37, 4, 'Плацкарт', 54, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (38, 5, 'Купе', 36, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (39, 6, 'Ресторан', 0, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (40, 7, 'Купе', 36, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (41, 8, 'Купе', 36, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (42, 9, 'Купе', 36, 17);

INSERT INTO public.carriage (carriage_id, carriage_number, carriage_type, seats_quantity, train_id) OVERRIDING SYSTEM VALUE VALUES (43, 10, 'Люкс', 18, 17);

--

-- TOC entry 2855 (class 0 OID 16417)

-- Dependencies: 200

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

--

INSERT INTO public.destination (destination_id, destination_name) OVERRIDING SYSTEM VALUE VALUES (1, 'Москва');

INSERT INTO public.destination (destination_id, destination_name) OVERRIDING SYSTEM VALUE VALUES (2, 'Москва');

INSERT INTO public.destination (destination_id, destination_name) OVERRIDING SYSTEM VALUE VALUES (3, 'Нижний Новгород');

--

-- TOC entry 2853 (class 0 OID 16410)

-- Dependencies: 198

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

--

INSERT INTO public.passenger (passenger_first_name, passenger_second_name, passenger_last_name, passport_data) VALUES ('Михаил', 'Евгеньевич', 'Темщиков', 345678);

INSERT INTO public.passenger (passenger_first_name, passenger_second_name, passenger_last_name, passport_data) VALUES ('Ашот', 'Карапетович', 'Аброян', 589662);

--

-- TOC entry 2857 (class 0 OID 16434)

-- Dependencies: 202

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

--

INSERT INTO public.point_on_way (point_on_way_id, train_id, destination_id, point_type, arrival_d_time, departure_d_time, stop_time) OVERRIDING SYSTEM VALUE VALUES (1, 14, 1, 'Город', '2022-03-15 00:05:00', '2022-03-15 00:10:00', '5 минут');

--

-- TOC entry 2860 (class 0 OID 16468)

-- Dependencies: 205

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

--

INSERT INTO public.seat (seat_id, seat_type, carriage_id, status, seat_number) OVERRIDING SYSTEM VALUE VALUES (1, 'Одиночное у окна', 14, 'Занято', '21');

INSERT INTO public.seat (seat_id, seat_type, carriage_id, status, seat_number) OVERRIDING SYSTEM VALUE VALUES (2, 'Неодиночное у прохода', 14, 'Свободно', '18');

INSERT INTO public.seat (seat_id, seat_type, carriage_id, status, seat_number) OVERRIDING SYSTEM VALUE VALUES (3, 'У прохода', 15, 'Занято', '32');

--

-- TOC entry 2862 (class 0 OID 16497)

-- Dependencies: 207

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

--

INSERT INTO public.ticket (ticket_number, seat_id, ticket_price, ticket_status, point_of_purchase, destination_id, passport_data) OVERRIDING SYSTEM VALUE VALUES (3, 3, 8500, 'Продан', 'Онлайн-покупка', 1, 345678);

INSERT INTO public.ticket (ticket_number, seat_id, ticket_price, ticket_status, point_of_purchase, destination_id, passport_data) OVERRIDING SYSTEM VALUE VALUES (6, 1, 16000, 'Продан', 'Санкт-Петербург', 1, 589662);

--

-- TOC entry 2851 (class 0 OID 16394)

-- Dependencies: 196

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

--

INSERT INTO public.train (train_id, train_number, train_type, train_status, departure_date_time, arrival_date_time, destination_id) OVERRIDING SYSTEM VALUE VALUES (16, 2, 'Скоростной', 'Отправлен', '2022-03-15 21:47:00', '2022-03-16 02:00:00', 2);

INSERT INTO public.train (train_id, train_number, train_type, train_status, departure_date_time, arrival_date_time, destination_id) OVERRIDING SYSTEM VALUE VALUES (17, 3, 'Скорый', 'Ожидается отправление', '2022-03-15 22:45:00', '2022-03-16 05:20:00', 3);

INSERT INTO public.train (train_id, train_number, train_type, train_status, departure_date_time, arrival_date_time, destination_id) OVERRIDING SYSTEM VALUE VALUES (14, 1, 'Скоростной', 'Прибыл', '2022-03-14 22:30:00', '2022-03-15 03:15:00', 1);

--

```
-- TOC entry 2873 (class 0 OID 0)
-- Dependencies: 197
-- Name: Train_train_id_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres
--
SELECT pg_catalog.setval('public."Train_train_id_seq"', 17, true);
--
-- TOC entry 2874 (class 0 OID 0)
-- Dependencies: 208
-- Name: carriage_carriage_id_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres
--
SELECT pg_catalog.setval('public.carriage_carriage_id_seq', 43, true);
--
-- TOC entry 2875 (class 0 OID 0)
-- Dependencies: 199
-- Name: destination_destination_id_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres
--
SELECT pg_catalog.setval('public.destination_destination_id_seq', 3, true);
--
-- TOC entry 2876 (class 0 OID 0)
-- Dependencies: 201
-- Name: point_on_way_point_on_way_id_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres
--
SELECT pg_catalog.setval('public.point_on_way_point_on_way_id_seq', 1, true);
--
-- TOC entry 2877 (class 0 OID 0)
-- Dependencies: 204
-- Name: seat_seat_id_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres
--
SELECT pg_catalog.setval('public.seat_seat_id_seq', 3, true);
--
-- TOC entry 2878 (class 0 OID 0)
-- Dependencies: 206
-- Name: ticket_ticket_number_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres
```

```
--

SELECT pg_catalog.setval('public.ticket_ticket_number_seq', 6, true);

--

-- TOC entry 2709 (class 2606 OID 16403)

-- Name: train Train_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.train

   ADD CONSTRAINT "Train_pkey" PRIMARY KEY (train_id);

--

-- TOC entry 2717 (class 2606 OID 16456)

-- Name: carriage carriage_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.carriage

   ADD CONSTRAINT carriage_pkey PRIMARY KEY (carriage_id);

--

-- TOC entry 2713 (class 2606 OID 16421)

-- Name: destination destination_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.destination

   ADD CONSTRAINT destination_pkey PRIMARY KEY (destination_id);

--

-- TOC entry 2711 (class 2606 OID 16503)

-- Name: passenger passport_data; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.passenger

   ADD CONSTRAINT passport_data PRIMARY KEY (passport_data);

--

-- TOC entry 2715 (class 2606 OID 16439)

-- Name: point_on_way point_on_way_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.point_on_way

   ADD CONSTRAINT point_on_way_pkey PRIMARY KEY (point_on_way_id);

--
```

```
-- TOC entry 2719 (class 2606 OID 16472)
-- Name: seat seat_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.seat
    ADD CONSTRAINT seat_pkey PRIMARY KEY (seat_id);
--
-- TOC entry 2721 (class 2606 OID 16501)
-- Name: ticket ticket_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.ticket
    ADD CONSTRAINT ticket_pkey PRIMARY KEY (ticket_number);
--
-- TOC entry 2726 (class 2606 OID 16473)
-- Name: seat carriage_id; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.seat
    ADD CONSTRAINT carriage_id FOREIGN KEY (carriage_id) REFERENCES public.carriage(carriage_id);
--
-- TOC entry 2729 (class 2606 OID 16520)
-- Name: ticket destination_id; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.ticket
    ADD CONSTRAINT destination_id FOREIGN KEY (destination_id) REFERENCES
public.destination(destination_id) NOT VALID;
--
-- TOC entry 2727 (class 2606 OID 16510)
-- Name: ticket passport_data; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.ticket
    ADD CONSTRAINT passport_data FOREIGN KEY (passport_data) REFERENCES
public.passenger(passport_data) NOT VALID;
--
-- TOC entry 2724 (class 2606 OID 16445)
```

-- Name: point_on_way point_on_way_destination_id_fkey; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.point_on_way

    ADD CONSTRAINT point_on_way_destination_id_fkey FOREIGN KEY (destination_id) REFERENCES public.destination(destination_id);

--

-- TOC entry 2723 (class 2606 OID 16440)

-- Name: point_on_way point_on_way_train_id_fkey; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.point_on_way

    ADD CONSTRAINT point_on_way_train_id_fkey FOREIGN KEY (train_id) REFERENCES public.train(train_id);

--

-- TOC entry 2728 (class 2606 OID 16515)

-- Name: ticket seat_id; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.ticket

    ADD CONSTRAINT seat_id FOREIGN KEY (seat_id) REFERENCES public.seat(seat_id) NOT VALID;

--

-- TOC entry 2722 (class 2606 OID 16528)

-- Name: train train_destination_id_fkey; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.train

    ADD CONSTRAINT train_destination_id_fkey FOREIGN KEY (destination_id) REFERENCES public.destination(destination_id) NOT VALID;

--

-- TOC entry 2725 (class 2606 OID 16459)

-- Name: carriage train_id; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.carriage

    ADD CONSTRAINT train_id FOREIGN KEY (train_id) REFERENCES public.train(train_id) NOT VALID;

--

-- TOC entry 2871 (class 0 OID 0)

-- Dependencies: 6

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

--

GRANT ALL ON SCHEMA public TO PUBLIC;

-- Completed on 2022-03-17 15:03:45

--

-- PostgreSQL database dump complete

--

Выводы:

По итогам выполнения лабораторной работы мной получены навыки создания базы данных, её таблиц и столбцов в pgAdmin 4. На практике изучены способы задания таких ограничений, как первичный ключ, внешний ключ, а также проверки. Наглядно изучен принцип связи таблиц в базе данных. Устранены замечания, полученные при создании этой базы в ПО Erwin Data Modeler в нотации IDEF1X.