

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

Отчёт

по лабораторной работе №3.2 «Создание таблиц базы данных PostgreSQL. Заполнение
таблиц рабочими данными»
по дисциплине «Проектирование и реализация баз данных»
Вариант №2 - БД «Сессия»

Автор: Клименков В.М.

Факультет: ИКТ

Группа: К3241

Преподаватель: Говорова М.М.



Санкт-Петербург 2023

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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

Вариант №2. БД «Сессия»

Схема логической модели базы данных, сгенерированная в Generate ERD (см. Рисунок 1)

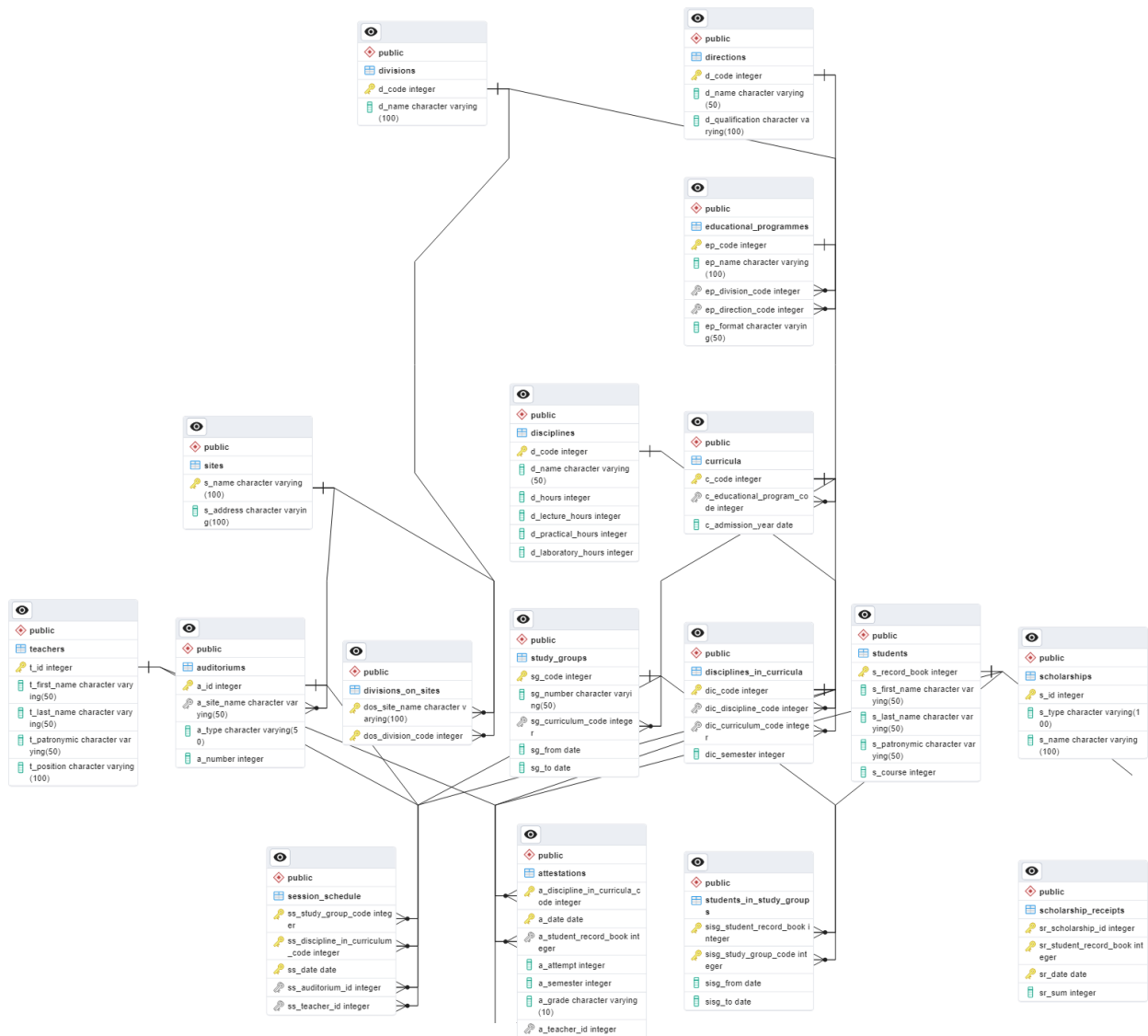


Рисунок 1 – Схема логической модели базы данных, сгенерированная в Generate ERD

Листинг резервной копии базы данных с расширением PLAIN (см. Листинг 1)

Листинг 1 – Резервная копия базы данных с расширением PLAIN

```

--
-- PostgreSQL database dump
--

-- Dumped from database version 16.0
-- Dumped by pg_dump version 16.0

-- Started on 2023-10-26 19:02:19

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 230 (class 1259 OID 16578)
-- Name: attestations; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.attestations (
    a_discipline_in_curricula_code integer NOT NULL,
    a_date date NOT NULL,
    a_student_record_book integer NOT NULL,
    a_attempt integer NOT NULL,
    a_semester integer NOT NULL,
    a_grade character varying(10) NOT NULL,
    a_teacher_id integer NOT NULL,
    CONSTRAINT attestations_a_attempt_check CHECK ((a_attempt >= 1)),
    CONSTRAINT attestations_a_grade_check CHECK (((a_grade)::text = ANY
((ARRAY['5'::character varying, '4'::character varying, '3'::character
varying, '2'::character varying, 'Зачёт'::character varying,
'Незачёт'::character varying]))::text[]))),
    CONSTRAINT attestations_a_semester_check CHECK ((a_semester >= 1))
);

ALTER TABLE public.attestations OWNER TO postgres;

--
-- TOC entry 4925 (class 0 OID 0)
-- Dependencies: 230
-- Name: TABLE attestations; Type: COMMENT; Schema: public; Owner:
postgres
--

COMMENT ON TABLE public.attestations IS 'Аттестация';

--
-- TOC entry 222 (class 1259 OID 16463)
-- Name: auditoriums; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.auditoriums (
    a_id integer NOT NULL,
    a_site_name character varying(50) NOT NULL,
    a_type character varying(50) NOT NULL,
    a_number integer NOT NULL,
    CONSTRAINT auditoriums_a_number_check CHECK ((a_number >= 0))
);

ALTER TABLE public.auditoriums OWNER TO postgres;

--
-- TOC entry 4926 (class 0 OID 0)
-- Dependencies: 222
-- Name: TABLE auditoriums; Type: COMMENT; Schema: public; Owner: postgres
--

```

```

COMMENT ON TABLE public.auditoriums IS 'Аудитории';

--
-- TOC entry 224 (class 1259 OID 16488)
-- Name: curricula; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.curricula (
    c_code integer NOT NULL,
    c_educational_program_code integer NOT NULL,
    c_admission_year date NOT NULL
);

ALTER TABLE public.curricula OWNER TO postgres;

--
-- TOC entry 4927 (class 0 OID 0)
-- Dependencies: 224
-- Name: TABLE curricula; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.curricula IS 'Учебные планы';

--
-- TOC entry 220 (class 1259 OID 16453)
-- Name: directions; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.directions (
    d_code integer NOT NULL,
    d_name character varying(50) NOT NULL,
    d_qualification character varying(100) NOT NULL
);

ALTER TABLE public.directions OWNER TO postgres;

--
-- TOC entry 4928 (class 0 OID 0)
-- Dependencies: 220
-- Name: TABLE directions; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.directions IS 'Направления';

--
-- TOC entry 219 (class 1259 OID 16448)
-- Name: disciplines; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.disciplines (
    d_code integer NOT NULL,
    d_name character varying(50) NOT NULL,
    d_hours integer NOT NULL,
    d_lecture_hours integer NOT NULL,

```

```

        d_practical_hours integer NOT NULL,
        d_laboratory_hours integer NOT NULL,
        CONSTRAINT disciplines_check CHECK (((d_lecture_hours +
d_practical_hours) + d_laboratory_hours) <= d_hours))
);

ALTER TABLE public.disciplines OWNER TO postgres;

--
-- TOC entry 4929 (class 0 OID 0)
-- Dependencies: 219
-- Name: TABLE disciplines; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.disciplines IS 'Дисциплины';

--
-- TOC entry 228 (class 1259 OID 16548)
-- Name: disciplines_in_curricula; Type: TABLE; Schema: public; Owner:
postgres
--

CREATE TABLE public.disciplines_in_curricula (
    dic_code integer NOT NULL,
    dic_discipline_code integer NOT NULL,
    dic_curriculum_code integer NOT NULL,
    dic_semester integer NOT NULL,
    CONSTRAINT disciplines_in_curricula_dic_semester_check CHECK
((dic_semester >= 1))
);

ALTER TABLE public.disciplines_in_curricula OWNER TO postgres;

--
-- TOC entry 4930 (class 0 OID 0)
-- Dependencies: 228
-- Name: TABLE disciplines_in_curricula; Type: COMMENT; Schema: public;
Owner: postgres
--

COMMENT ON TABLE public.disciplines_in_curricula IS 'Дисциплины в учебных
планах';

--
-- TOC entry 221 (class 1259 OID 16458)
-- Name: divisions; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.divisions (
    d_code integer NOT NULL,
    d_name character varying(100) NOT NULL
);

ALTER TABLE public.divisions OWNER TO postgres;

```

```

--
-- TOC entry 4931 (class 0 OID 0)
-- Dependencies: 221
-- Name: TABLE divisions; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.divisions IS 'Подразделения';

--
-- TOC entry 229 (class 1259 OID 16563)
-- Name: divisions_on_sites; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.divisions_on_sites (
    dos_site_name character varying(100) NOT NULL,
    dos_division_code integer NOT NULL
);

ALTER TABLE public.divisions_on_sites OWNER TO postgres;

--
-- TOC entry 4932 (class 0 OID 0)
-- Dependencies: 229
-- Name: TABLE divisions_on_sites; Type: COMMENT; Schema: public; Owner:
postgres
--

COMMENT ON TABLE public.divisions_on_sites IS 'Подразделения на
площадках';

--
-- TOC entry 223 (class 1259 OID 16473)
-- Name: educational_programmes; Type: TABLE; Schema: public; Owner:
postgres
--

CREATE TABLE public.educational_programmes (
    ep_code integer NOT NULL,
    ep_name character varying(100) NOT NULL,
    ep_division_code integer NOT NULL,
    ep_direction_code integer NOT NULL,
    ep_format character varying(50) NOT NULL,
    CONSTRAINT educational_programmes_ep_format_check CHECK
(((ep_format)::text = ANY (ARRAY[('Очно'::character varying)::text,
('Очно-заочно'::character varying)::text, ('Заочно'::character
varying)::text])))
);

ALTER TABLE public.educational_programmes OWNER TO postgres;

--
-- TOC entry 4933 (class 0 OID 0)
-- Dependencies: 223
-- Name: TABLE educational_programmes; Type: COMMENT; Schema: public;
Owner: postgres
--

```



```
COMMENT ON TABLE public.educational_programmes IS 'Образовательные программы';
```

```
--  
-- TOC entry 226 (class 1259 OID 16508)  
-- Name: scholarship_receipts; Type: TABLE; Schema: public; Owner: postgres  
--
```

```
CREATE TABLE public.scholarship_receipts (  
    sr_scholarship_id integer NOT NULL,  
    sr_student_record_book integer NOT NULL,  
    sr_date date NOT NULL,  
    sr_sum integer NOT NULL,  
    CONSTRAINT scholarship_receipts_sr_sum_check CHECK ((sr_sum >= 0))  
);
```

```
ALTER TABLE public.scholarship_receipts OWNER TO postgres;
```

```
--  
-- TOC entry 4934 (class 0 OID 0)  
-- Dependencies: 226  
-- Name: TABLE scholarship_receipts; Type: COMMENT; Schema: public; Owner: postgres  
--
```

```
COMMENT ON TABLE public.scholarship_receipts IS 'Получение стипендии';
```

```
--  
-- TOC entry 215 (class 1259 OID 16422)  
-- Name: scholarships; Type: TABLE; Schema: public; Owner: postgres  
--
```

```
CREATE TABLE public.scholarships (  
    s_id integer NOT NULL,  
    s_type character varying(100) NOT NULL,  
    s_name character varying(100) NOT NULL  
);
```

```
ALTER TABLE public.scholarships OWNER TO postgres;
```

```
--  
-- TOC entry 4935 (class 0 OID 0)  
-- Dependencies: 215  
-- Name: TABLE scholarships; Type: COMMENT; Schema: public; Owner: postgres  
--
```

```
COMMENT ON TABLE public.scholarships IS 'Стипендии';
```

```
--  
-- TOC entry 231 (class 1259 OID 16598)  
-- Name: session_schedule; Type: TABLE; Schema: public; Owner: postgres  
--
```

```

CREATE TABLE public.session_schedule (
    ss_study_group_code integer NOT NULL,
    ss_discipline_in_curriculum_code integer NOT NULL,
    ss_date date NOT NULL,
    ss_auditorium_id integer,
    ss_teacher_id integer NOT NULL
);

ALTER TABLE public.session_schedule OWNER TO postgres;

--
-- TOC entry 4936 (class 0 OID 0)
-- Dependencies: 231
-- Name: TABLE session_schedule; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.session_schedule IS 'Расписание сессии';

--
-- TOC entry 217 (class 1259 OID 16438)
-- Name: sites; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.sites (
    s_name character varying(100) NOT NULL,
    s_address character varying(100) NOT NULL
);

ALTER TABLE public.sites OWNER TO postgres;

--
-- TOC entry 4937 (class 0 OID 0)
-- Dependencies: 217
-- Name: TABLE sites; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.sites IS 'Площадки института';

--
-- TOC entry 216 (class 1259 OID 16433)
-- Name: students; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.students (
    s_record_book integer NOT NULL,
    s_first_name character varying(50) NOT NULL,
    s_last_name character varying(50) NOT NULL,
    s_patronymic character varying(50),
    s_course integer,
    CONSTRAINT students_s_course_check CHECK ((s_course >= 1))
);

ALTER TABLE public.students OWNER TO postgres;

```

```

--
-- TOC entry 4938 (class 0 OID 0)
-- Dependencies: 216
-- Name: TABLE students; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.students IS 'Студенты';

--
-- TOC entry 227 (class 1259 OID 16533)
-- Name: students_in_study_groups; Type: TABLE; Schema: public; Owner:
postgres
--

CREATE TABLE public.students_in_study_groups (
    sisg_student_record_book integer NOT NULL,
    sisg_study_group_code integer NOT NULL,
    sisg_from date NOT NULL,
    sisg_to date
);

ALTER TABLE public.students_in_study_groups OWNER TO postgres;

--
-- TOC entry 4939 (class 0 OID 0)
-- Dependencies: 227
-- Name: TABLE students_in_study_groups; Type: COMMENT; Schema: public;
Owner: postgres
--

COMMENT ON TABLE public.students_in_study_groups IS 'Студенты в учебных
группах';

--
-- TOC entry 225 (class 1259 OID 16498)
-- Name: study_groups; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.study_groups (
    sg_code integer NOT NULL,
    sg_number character varying(50) NOT NULL,
    sg_curriculum_code integer NOT NULL,
    sg_from date NOT NULL,
    sg_to date
);

ALTER TABLE public.study_groups OWNER TO postgres;

--
-- TOC entry 4940 (class 0 OID 0)
-- Dependencies: 225
-- Name: TABLE study_groups; Type: COMMENT; Schema: public; Owner:
postgres
--

```

```

COMMENT ON TABLE public.study_groups IS 'Учебные группы';

--
-- TOC entry 218 (class 1259 OID 16443)
-- Name: teachers; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.teachers (
    t_id integer NOT NULL,
    t_first_name character varying(50) NOT NULL,
    t_last_name character varying(50) NOT NULL,
    t_patronymic character varying(50),
    t_position character varying(100) NOT NULL
);

ALTER TABLE public.teachers OWNER TO postgres;

--
-- TOC entry 4941 (class 0 OID 0)
-- Dependencies: 218
-- Name: TABLE teachers; Type: COMMENT; Schema: public; Owner: postgres
--

COMMENT ON TABLE public.teachers IS 'Преподаватели';

--
-- TOC entry 4918 (class 0 OID 16578)
-- Dependencies: 230
-- Data for Name: attestations; Type: TABLE DATA; Schema: public; Owner:
postgres
--

COPY public.attestations (a_discipline_in_curricula_code, a_date,
a_student_record_book, a_attempt, a_semester, a_grade, a_teacher_id) FROM
stdin;
4698    2022-01-01      516111 2        5        4        4
5243    2022-01-01      400419 1        5        5        1
7856    2022-01-01      381030 1        7        5        5
8925    2022-01-01      305531 1        6        5        3
4526    2022-01-01      124255 2        4        4        2
\.

--
-- TOC entry 4910 (class 0 OID 16463)
-- Dependencies: 222
-- Data for Name: auditoriums; Type: TABLE DATA; Schema: public; Owner:
postgres
--

COPY public.auditoriums (a_id, a_site_name, a_type, a_number) FROM stdin;
5       Биржевая линия Практическая    9466
4       Улица Чайковского    Лекционная    7508
3       Переулок Гривцова    Лабораторная 4473
2       Улица Ломоносова     Практическая   6601
1       Кронверкский проспект Лекционная    7294
\.

```

```

--
-- TOC entry 4912 (class 0 OID 16488)
-- Dependencies: 224
-- Data for Name: curricula; Type: TABLE DATA; Schema: public; Owner:
postgres
--

COPY public.curricula (c_code, c_educational_program_code,
c_admission_year) FROM stdin;
5      120301  2017-01-01
4      100301  2016-01-01
3      90304   2016-01-01
2      90303   2015-01-01
1      90301   2015-01-01
\.

--
-- TOC entry 4908 (class 0 OID 16453)
-- Dependencies: 220
-- Data for Name: directions; Type: TABLE DATA; Schema: public; Owner:
postgres
--

COPY public.directions (d_code, d_name, d_qualification) FROM stdin;
5      Науки о жизни  Бакалавриат
4      Инженерия      Бакалавриат
3      Экономика и инновации Бакалавриат
2      Информационные технологии Бакалавриат
1      Физика Бакалавриат
\.

--
-- TOC entry 4907 (class 0 OID 16448)
-- Dependencies: 219
-- Data for Name: disciplines; Type: TABLE DATA; Schema: public; Owner:
postgres
--

COPY public.disciplines (d_code, d_name, d_hours, d_lecture_hours,
d_practical_hours, d_laboratory_hours) FROM stdin;
30791  Общая физика  216      64      32      32
21235  Программирование      288      96      16      32
30185  Математическая статистика      108      36      36      0
29867  Иностранный язык      108      0      64      0
33953  История российской науки и техники  144      24      24      0
\.

--
-- TOC entry 4916 (class 0 OID 16548)
-- Dependencies: 228
-- Data for Name: disciplines_in_curricula; Type: TABLE DATA; Schema:
public; Owner: postgres
--

```

```

COPY public.disciplines_in_curricula (dic_code, dic_discipline_code,
dic_curriculum_code, dic_semester) FROM stdin;
7856      30791      5          7
4698      21235      4          4
8925      30185      3          1
4526      29867      2          4
5243      33953      1          5
\.
```

```

--
-- TOC entry 4909 (class 0 OID 16458)
-- Dependencies: 221
-- Data for Name: divisions; Type: TABLE DATA; Schema: public; Owner:
postgres
--
```

```

COPY public.divisions (d_code, d_name) FROM stdin;
4      Институт лазерных технологий
3      Факультет безопасности информационных технологий
2      Факультет инфокоммуникационных технологий
1      Факультет программной инженерии и компьютерной техники
\.
```

```

--
-- TOC entry 4917 (class 0 OID 16563)
-- Dependencies: 229
-- Data for Name: divisions_on_sites; Type: TABLE DATA; Schema: public;
Owner: postgres
--
```

```

COPY public.divisions_on_sites (dos_site_name, dos_division_code) FROM
stdin;
Улица Чайковского      4
Переулок Гривцова      3
Улица Ломоносова      2
Кронверкский проспект 1
\.
```

```

--
-- TOC entry 4911 (class 0 OID 16473)
-- Dependencies: 223
-- Data for Name: educational_programmes; Type: TABLE DATA; Schema:
public; Owner: postgres
--
```

```

COPY public.educational_programmes (ep_code, ep_name, ep_division_code,
ep_direction_code, ep_format) FROM stdin;
120301 Лазерные технологии      4          4      Очно
100301 Технологии защиты информации 3          2      Очно
90304 Компьютерные технологии в дизайне 1          2      Очно
90303 Мобильные и сетевые технологии 2          2      Очно
90301 Компьютерные системы и технологии 1          2      Очно
\.
```

```

--
-- TOC entry 4914 (class 0 OID 16508)
```

```

-- Dependencies: 226
-- Data for Name: scholarship_receipts; Type: TABLE DATA; Schema: public;
Owner: postgres
--

COPY public.scholarship_receipts (sr_scholarship_id,
sr_student_record_book, sr_date, sr_sum) FROM stdin;
3      305531 2022-10-12      7000
2      124255 2022-10-11      4000
1      400419 2022-10-10      2000
\.

--
-- TOC entry 4903 (class 0 OID 16422)
-- Dependencies: 215
-- Data for Name: scholarships; Type: TABLE DATA; Schema: public; Owner:
postgres
--

COPY public.scholarships (s_id, s_type, s_name) FROM stdin;
1      Государственная стипендия      Государственная академическая
стипендия
5      Именная стипендия      Именная стипендия Правительства Санкт-
Петербурга
4      Социальная стипендия      Материальная поддержка студентам и аспирантам
3      Социальная стипендия      Государственная социальная стипендия
2      Государственная стипендия      Повышенная государственная
академическая стипендия
6      Стипендия компании      Стипендия «Альфа-Шанс»
\.

--
-- TOC entry 4919 (class 0 OID 16598)
-- Dependencies: 231
-- Data for Name: session_schedule; Type: TABLE DATA; Schema: public;
Owner: postgres
--

COPY public.session_schedule (ss_study_group_code,
ss_discipline_in_curriculum_code, ss_date, ss_auditorium_id,
ss_teacher_id) FROM stdin;
3      8925      2022-01-01      3      3
2      4526      2022-01-01      2      2
1      5243      2022-01-01      1      1
\.

--
-- TOC entry 4905 (class 0 OID 16438)
-- Dependencies: 217
-- Data for Name: sites; Type: TABLE DATA; Schema: public; Owner: postgres
--

COPY public.sites (s_name, s_address) FROM stdin;
Кронверкский проспект 197101, г. Санкт-Петербург, Кронверкский проспект,
д. 49
Биржевая линия 199034, г. Санкт-Петербург, Биржевая линия, д. 14-16, лит.
А

```

Улица Чайковского 191187, г. Санкт-Петербург, улица Чайковского, д. 11/2, лит. А
 Переулок Гривцова 190031, г. Санкт-Петербург, переулок Гривцова, д. 14-16, лит. А
 Улица Ломоносова 191002, г. Санкт-Петербург, улица Ломоносова, д. 9
 \.

```
--
-- TOC entry 4904 (class 0 OID 16433)
-- Dependencies: 216
-- Data for Name: students; Type: TABLE DATA; Schema: public; Owner: postgres
--
```

```
COPY public.students (s_record_book, s_first_name, s_last_name, s_patronymic, s_course) FROM stdin;
```

```
534421 Пётр СмирновАлексеевич 4
762153 Виктория Владимировна Алексеевна 3
252108 Григорий КосаревАртурович 4
742645 Лука СеменовДмитриевич 3
152145 Вероника ПетроваМихайловна 2
381030 Арина Круглова Максимовна 1
516111 Моника ЕгороваДенисовна 4
305531 Павел СорокинИванович 3
124255 Александр Михайлов Сергеевич 2
400419 Иван Чернышев Алексеевич 1
\.
```

```
--
-- TOC entry 4915 (class 0 OID 16533)
-- Dependencies: 227
-- Data for Name: students_in_study_groups; Type: TABLE DATA; Schema: public; Owner: postgres
--
```

```
COPY public.students_in_study_groups (sisg_student_record_book, sisg_study_group_code, sisg_from, sisg_to) FROM stdin;
```

```
534421 3 2021-01-01 2022-01-01
762153 3 2021-01-01 2022-01-01
252108 2 2021-01-01 2022-01-01
742645 1 2021-01-01 2022-01-01
152145 3 2021-01-01 2022-01-01
381030 2 2021-01-01 2022-01-01
516111 1 2021-01-01 2022-01-01
305531 3 2021-01-01 2022-01-01
124255 2 2021-01-01 2022-01-01
400419 1 2021-01-01 2022-01-01
\.
```

```
--
-- TOC entry 4913 (class 0 OID 16498)
-- Dependencies: 225
-- Data for Name: study_groups; Type: TABLE DATA; Schema: public; Owner: postgres
--
```



```
COPY public.study_groups (sg_code, sg_number, sg_curriculum_code, sg_from,
sg_to) FROM stdin;
3      C7659  3      2022-01-01      2023-01-01
2      B4423  2      2021-01-01      2022-01-01
1      A3610  1      2020-01-01      2021-01-01
\.
```

```
--
-- TOC entry 4906 (class 0 OID 16443)
-- Dependencies: 218
-- Data for Name: teachers; Type: TABLE DATA; Schema: public; Owner:
postgres
--
```

```
COPY public.teachers (t_id, t_first_name, t_last_name, t_patronymic,
t_position) FROM stdin;
5      Артём Николаев      Артурович      Преподаватель физики
4      Олеся Соболева      Матвеевна      Преподаватель истории
3      Владислав      Ермаков Артёмович      Преподаватель английского
языка
1      Амина Касаткина      Адамовна      Преподаватель математики
2      Александра      Морозова      Фёдоровна      Преподаватель
программирования
\.
```

```
--
-- TOC entry 4737 (class 2606 OID 16582)
-- Name: attestations attestations_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--
```

```
ALTER TABLE ONLY public.attestations
    ADD CONSTRAINT attestations_pkey PRIMARY KEY
(a_discipline_in_curricula_code, a_date);
```

```
--
-- TOC entry 4721 (class 2606 OID 16467)
-- Name: auditoriums auditoriums_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--
```

```
ALTER TABLE ONLY public.auditoriums
    ADD CONSTRAINT auditoriums_pkey PRIMARY KEY (a_id);
```

```
--
-- TOC entry 4725 (class 2606 OID 16492)
-- Name: curricula curricula_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--
```

```
ALTER TABLE ONLY public.curricula
    ADD CONSTRAINT curricula_pkey PRIMARY KEY (c_code);
```

```
--
-- TOC entry 4717 (class 2606 OID 16457)
```

```

-- Name: directions directions_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--

ALTER TABLE ONLY public.directions
    ADD CONSTRAINT directions_pkey PRIMARY KEY (d_code);

--
-- TOC entry 4733 (class 2606 OID 16552)
-- Name: disciplines_in_curricula disciplines_in_curricula_pkey; Type:
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.disciplines_in_curricula
    ADD CONSTRAINT disciplines_in_curricula_pkey PRIMARY KEY (dic_code);

--
-- TOC entry 4715 (class 2606 OID 16452)
-- Name: disciplines disciplines_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--

ALTER TABLE ONLY public.disciplines
    ADD CONSTRAINT disciplines_pkey PRIMARY KEY (d_code);

--
-- TOC entry 4735 (class 2606 OID 16567)
-- Name: divisions_on_sites divisions_on_sites_pkey; Type: CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.divisions_on_sites
    ADD CONSTRAINT divisions_on_sites_pkey PRIMARY KEY (dos_site_name,
dos_division_code);

--
-- TOC entry 4719 (class 2606 OID 16462)
-- Name: divisions divisions_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--

ALTER TABLE ONLY public.divisions
    ADD CONSTRAINT divisions_pkey PRIMARY KEY (d_code);

--
-- TOC entry 4723 (class 2606 OID 16477)
-- Name: educational_programmes educational_programmes_pkey; Type:
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.educational_programmes
    ADD CONSTRAINT educational_programmes_pkey PRIMARY KEY (ep_code);

--

```

```

-- TOC entry 4729 (class 2606 OID 16512)
-- Name: scholarship_receipts scholarship_receipts_pkey; Type: CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.scholarship_receipts
    ADD CONSTRAINT scholarship_receipts_pkey PRIMARY KEY
(sr_scholarship_id, sr_student_record_book, sr_date);

--

-- TOC entry 4707 (class 2606 OID 16426)
-- Name: scholarships scholarships_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--

ALTER TABLE ONLY public.scholarships
    ADD CONSTRAINT scholarships_pkey PRIMARY KEY (s_id);

--

-- TOC entry 4739 (class 2606 OID 16602)
-- Name: session_schedule session_schedule_pkey; Type: CONSTRAINT; Schema:
public; Owner: postgres
--

ALTER TABLE ONLY public.session_schedule
    ADD CONSTRAINT session_schedule_pkey PRIMARY KEY (ss_study_group_code,
ss_discipline_in_curriculum_code, ss_date);

--

-- TOC entry 4711 (class 2606 OID 16442)
-- Name: sites sites_pkey; Type: CONSTRAINT; Schema: public; Owner:
postgres
--

ALTER TABLE ONLY public.sites
    ADD CONSTRAINT sites_pkey PRIMARY KEY (s_name);

--

-- TOC entry 4731 (class 2606 OID 16537)
-- Name: students_in_study_groups students_in_study_groups_pkey; Type:
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.students_in_study_groups
    ADD CONSTRAINT students_in_study_groups_pkey PRIMARY KEY
(sisg_student_record_book, sisg_study_group_code);

--

-- TOC entry 4709 (class 2606 OID 16437)
-- Name: students students_pkey; Type: CONSTRAINT; Schema: public; Owner:
postgres
--

ALTER TABLE ONLY public.students
    ADD CONSTRAINT students_pkey PRIMARY KEY (s_record_book);

```

```

--
-- TOC entry 4727 (class 2606 OID 16502)
-- Name: study_groups study_groups_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--

ALTER TABLE ONLY public.study_groups
    ADD CONSTRAINT study_groups_pkey PRIMARY KEY (sg_code);

--
-- TOC entry 4713 (class 2606 OID 16447)
-- Name: teachers teachers_pkey; Type: CONSTRAINT; Schema: public; Owner:
postgres
--

ALTER TABLE ONLY public.teachers
    ADD CONSTRAINT teachers_pkey PRIMARY KEY (t_id);

--
-- TOC entry 4753 (class 2606 OID 16583)
-- Name: attestations attestations_a_discipline_in_curricula_code_fkey;
Type: FK CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.attestations
    ADD CONSTRAINT attestations_a_discipline_in_curricula_code_fkey
FOREIGN KEY (a_discipline_in_curricula_code) REFERENCES
public.disciplines_in_curricula(dic_code);

--
-- TOC entry 4754 (class 2606 OID 16588)
-- Name: attestations attestations_a_student_record_book_fkey; Type: FK
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.attestations
    ADD CONSTRAINT attestations_a_student_record_book_fkey FOREIGN KEY
(a_student_record_book) REFERENCES public.students(s_record_book);

--
-- TOC entry 4755 (class 2606 OID 16593)
-- Name: attestations attestations_a_teacher_id_fkey; Type: FK CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.attestations
    ADD CONSTRAINT attestations_a_teacher_id_fkey FOREIGN KEY
(a_teacher_id) REFERENCES public.teachers(t_id);

--
-- TOC entry 4740 (class 2606 OID 16468)
-- Name: auditoriums auditoriums_a_site_name_fkey; Type: FK CONSTRAINT;
Schema: public; Owner: postgres

```

```

--

ALTER TABLE ONLY public.auditoriums
    ADD CONSTRAINT auditoriums_a_site_name_fkey FOREIGN KEY (a_site_name)
    REFERENCES public.sites(s_name);

--

-- TOC entry 4743 (class 2606 OID 16493)
-- Name: curricula curricula_c_educational_program_code_fkey; Type: FK
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.curricula
    ADD CONSTRAINT curricula_c_educational_program_code_fkey FOREIGN KEY
(c_educational_program_code) REFERENCES
public.educational_programmes(ep_code);

--

-- TOC entry 4749 (class 2606 OID 16558)
-- Name: disciplines_in_curricula
disciplines_in_curricula_dic_curriculum_code_fkey; Type: FK CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.disciplines_in_curricula
    ADD CONSTRAINT disciplines_in_curricula_dic_curriculum_code_fkey
FOREIGN KEY (dic_curriculum_code) REFERENCES public.curricula(c_code);

--

-- TOC entry 4750 (class 2606 OID 16553)
-- Name: disciplines_in_curricula
disciplines_in_curricula_dic_discipline_code_fkey; Type: FK CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.disciplines_in_curricula
    ADD CONSTRAINT disciplines_in_curricula_dic_discipline_code_fkey
FOREIGN KEY (dic_discipline_code) REFERENCES public.disciplines(d_code);

--

-- TOC entry 4751 (class 2606 OID 16573)
-- Name: divisions_on_sites divisions_on_sites_dos_division_code_fkey;
Type: FK CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.divisions_on_sites
    ADD CONSTRAINT divisions_on_sites_dos_division_code_fkey FOREIGN KEY
(dos_division_code) REFERENCES public.divisions(d_code);

--

-- TOC entry 4752 (class 2606 OID 16568)
-- Name: divisions_on_sites divisions_on_sites_dos_site_name_fkey; Type:
FK CONSTRAINT; Schema: public; Owner: postgres
--

```

```

ALTER TABLE ONLY public.divisions_on_sites
    ADD CONSTRAINT divisions_on_sites_dos_site_name_fkey FOREIGN KEY
(dos_site_name) REFERENCES public.sites(s_name);

--
-- TOC entry 4741 (class 2606 OID 16483)
-- Name: educational_programmes
educational_programmes_ep_direction_code_fkey; Type: FK CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.educational_programmes
    ADD CONSTRAINT educational_programmes_ep_direction_code_fkey FOREIGN
KEY (ep_direction_code) REFERENCES public.directions(d_code);

--
-- TOC entry 4742 (class 2606 OID 16478)
-- Name: educational_programmes
educational_programmes_ep_division_code_fkey; Type: FK CONSTRAINT; Schema:
public; Owner: postgres
--

ALTER TABLE ONLY public.educational_programmes
    ADD CONSTRAINT educational_programmes_ep_division_code_fkey FOREIGN
KEY (ep_division_code) REFERENCES public.divisions(d_code);

--
-- TOC entry 4745 (class 2606 OID 16513)
-- Name: scholarship_receipts scholarship_receipts_sr_scholarship_id_fkey;
Type: FK CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.scholarship_receipts
    ADD CONSTRAINT scholarship_receipts_sr_scholarship_id_fkey FOREIGN KEY
(sr_scholarship_id) REFERENCES public.scholarships(s_id);

--
-- TOC entry 4746 (class 2606 OID 16518)
-- Name: scholarship_receipts
scholarship_receipts_sr_student_record_book_fkey; Type: FK CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.scholarship_receipts
    ADD CONSTRAINT scholarship_receipts_sr_student_record_book_fkey
FOREIGN KEY (sr_student_record_book) REFERENCES
public.students(s_record_book);

--
-- TOC entry 4756 (class 2606 OID 16613)
-- Name: session_schedule session_schedule_ss_auditorium_id_fkey; Type: FK
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.session_schedule

```

```

        ADD CONSTRAINT session_schedule_ss_auditorium_id_fkey FOREIGN KEY
(ss_auditorium_id) REFERENCES public.auditoriums(a_id);

--
-- TOC entry 4757 (class 2606 OID 16608)
-- Name: session_schedule
session_schedule_ss_discipline_in_curriculum_code_fkey; Type: FK
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.session_schedule
    ADD CONSTRAINT session_schedule_ss_discipline_in_curriculum_code_fkey
FOREIGN KEY (ss_discipline_in_curriculum_code) REFERENCES
public.disciplines_in_curricula(dic_code);

--
-- TOC entry 4758 (class 2606 OID 16603)
-- Name: session_schedule session_schedule_ss_study_group_code_fkey; Type:
FK CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.session_schedule
    ADD CONSTRAINT session_schedule_ss_study_group_code_fkey FOREIGN KEY
(ss_study_group_code) REFERENCES public.study_groups(sg_code);

--
-- TOC entry 4759 (class 2606 OID 16618)
-- Name: session_schedule session_schedule_ss_teacher_id_fkey; Type: FK
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.session_schedule
    ADD CONSTRAINT session_schedule_ss_teacher_id_fkey FOREIGN KEY
(ss_teacher_id) REFERENCES public.teachers(t_id);

--
-- TOC entry 4747 (class 2606 OID 16538)
-- Name: students_in_study_groups
students_in_study_groups_sisg_student_record_book_fkey; Type: FK
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.students_in_study_groups
    ADD CONSTRAINT students_in_study_groups_sisg_student_record_book_fkey
FOREIGN KEY (sisg_student_record_book) REFERENCES
public.students(s_record_book);

--
-- TOC entry 4748 (class 2606 OID 16543)
-- Name: students_in_study_groups
students_in_study_groups_sisg_study_group_code_fkey; Type: FK CONSTRAINT;
Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.students_in_study_groups

```

```

        ADD CONSTRAINT students_in_study_groups_sisg_study_group_code_fkey
FOREIGN KEY (sisg_study_group_code) REFERENCES
public.study_groups(sg_code);

--
-- TOC entry 4744 (class 2606 OID 16503)
-- Name: study_groups study_groups_sg_curriculum_code_fkey; Type: FK
CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.study_groups
    ADD CONSTRAINT study_groups_sg_curriculum_code_fkey FOREIGN KEY
(sg_curriculum_code) REFERENCES public.curricula(c_code);

-- Completed on 2023-10-26 19:02:20

--
-- PostgreSQL database dump complete
--

```

Вывод

В процессе выполнения данной лабораторной работы я получил практический опыт создания таблиц базы данных PostgreSQL 1X, заполнения их рабочими данными, резервного копирования и восстановления БД. Мне удалось создать базу данных с использованием pgAdmin 4, создать схему в составе базы данных, создать соответствующие таблицы базы данных, установить на них необходимые ограничения, заполнить таблицы БД рабочими данными, создать резервные копии БД (с расширениями CUSTOM и PLAIN) и с их помощью восстановить БД.