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»

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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.

Выполнение

Вариант №2. БД «Сессия»

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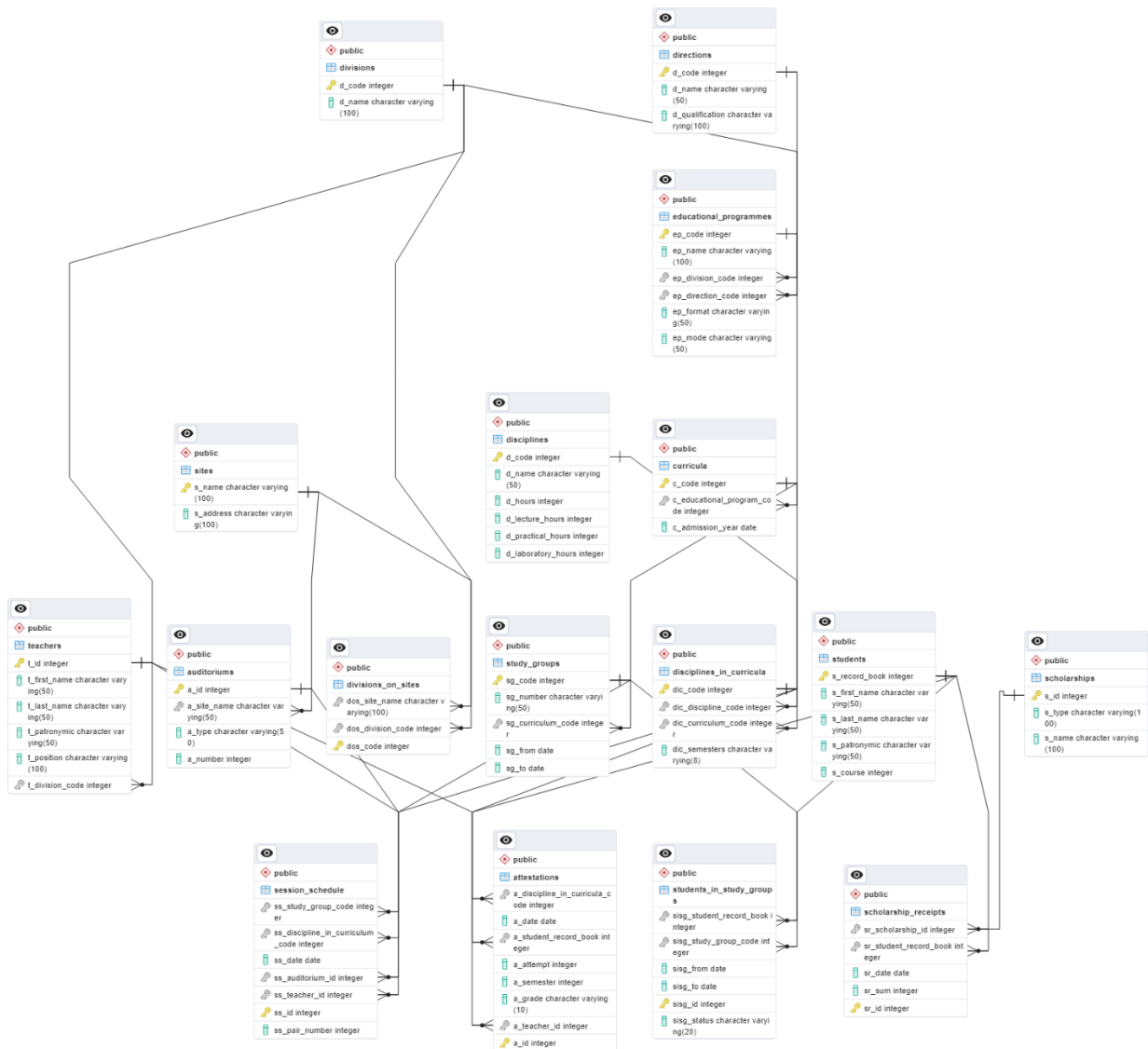
Рисунок 1 – Схема логической модели базы данных, сгенерированная в Generate ERD

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 2023-11-20 17:48:49

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 4927 (class 1262 OID 16421)
-- Name: session_database; Type: DATABASE; Schema: -; Owner: postgres
--

CREATE DATABASE session_database WITH TEMPLATE = template0 ENCODING = 'UTF8'
LOCALE_PROVIDER = libc LOCALE = 'Russian_Russia.1251';


ALTER DATABASE session_database OWNER TO postgres;

\connect session_database

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 4928 (class 0 OID 0)
-- Dependencies: 4927
-- Name: DATABASE session_database; Type: COMMENT; Schema: -; Owner: postgres
--

COMMENT ON DATABASE session_database IS 'Сессия';


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,
```

```sql
    a_attempt integer NOT NULL,
    a_semester integer NOT NULL,
    a_grade character varying(10) NOT NULL,
    a_teacher_id integer NOT NULL,
    a_id integer NOT NULL,
    CONSTRAINT attestations_a_attempt_check CHECK (((a_attempt >= 1) AND
(a_attempt <= 3))),
    CONSTRAINT attestations_a_semester_check CHECK (((a_semester >= 1) AND
(a_semester <= 8)))
);


ALTER TABLE public.attestations OWNER TO postgres;

--
-- TOC entry 4929 (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 4930 (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 4931 (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,
    CONSTRAINT directions_d_qualification_check CHECK
(((d_qualification)::text = ANY (ARRAY[('Бакалавриат'::character
varying)::text, ('Магистратура'::character varying)::text,
('Аспирантура'::character varying)::text])))
);


ALTER TABLE public.directions OWNER TO postgres;

--
-- TOC entry 4932 (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 4933 (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_semesters character varying(8) NOT NULL
);


ALTER TABLE public.disciplines_in_curricula OWNER TO postgres;

--
-- TOC entry 4934 (class 0 OID 0)
-- Dependencies: 228
-- Name: TABLE disciplines_in_curricula; Type: COMMENT; Schema: public;
Owner: postgres
--
```

```sql
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 4935 (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,
    dos_code integer NOT NULL
);


ALTER TABLE public.divisions_on_sites OWNER TO postgres;

--
-- TOC entry 4936 (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,
    ep_mode 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]))),
    CONSTRAINT educational_programmes_ep_mode_check CHECK (((ep_mode)::text =
ANY (ARRAY[('Очно'::character varying)::text, ('Дистанционно'::character
varying)::text])))
);


ALTER TABLE public.educational_programmes OWNER TO postgres;

--
-- TOC entry 4937 (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,
    sr_id integer NOT NULL,
    CONSTRAINT scholarship_receipts_sr_sum_check CHECK ((sr_sum >= 0))
);


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

```
--
-- TOC entry 4938 (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 4939 (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,
    ss_id integer NOT NULL,
    ss_pair_number integer NOT NULL,
    CONSTRAINT session_schedule_ss_pair_number_check CHECK (((ss_pair_number
>= 1) AND (ss_pair_number <= 8)))
);
```

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


--
-- TOC entry 4940 (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 4941 (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))
);
```

```sql
ALTER TABLE public.students OWNER TO postgres;

--
-- TOC entry 4942 (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,
    sisg_id integer NOT NULL,
    sisg_status character varying(20)
);


ALTER TABLE public.students_in_study_groups OWNER TO postgres;

--
-- TOC entry 4943 (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 4944 (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,
    t_division_code integer
);



ALTER TABLE public.teachers OWNER TO postgres;

--
-- TOC entry 4945 (class 0 OID 0)
-- Dependencies: 218
-- Name: TABLE teachers; Type: COMMENT; Schema: public; Owner: postgres
--


COMMENT ON TABLE public.teachers IS 'Преподаватели';



--
-- TOC entry 4920 (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, a_id)
FROM stdin;
4526    2022-01-01       124255  2       4       4       2       1
4698    2022-01-01       516111  2       5       4       4       2
5243    2022-01-01       400419  1       5       5       1       3
7856    2022-01-01       381030  1       7       5       5       4
8925    2022-01-01       305531  1       6       5       3       5
\.


--
-- TOC entry 4912 (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 4914 (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 4910 (class 0 OID 16453)
-- Dependencies: 220
-- Data for Name: directions; Type: TABLE DATA; Schema: public; Owner:
postgres
--
```

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


--
-- TOC entry 4909 (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 4918 (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_semesters) FROM stdin;
4526    29867   2       12
4698    21235   4       12
5243    33953   1       34
7856    30791   5       56
8925    30185   3       78
\.


--
-- TOC entry 4911 (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 4919 (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, dos_code)
FROM stdin;
Кронверкский проспект   1       1
Переулок Гривцова        3       2
Улица Ломоносова         2       3
Улица Чайковского        4       4
\.



--
-- TOC entry 4913 (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, ep_mode) FROM stdin;
90301   Компьютерные системы и технологии       1       2       Очно    Очно
90303   Мобильные и сетевые технологии 2        2       Очно    Дистанционно
90304   Компьютерные технологии в дизайне       1       2       Очно    Очно
100301  Технологии защиты информации    3       2       Очно    Дистанционно
120301  Лазерные технологии     4       4       Очно    Очно
\.



--
-- TOC entry 4916 (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, sr_id) FROM stdin;
1       400419  2022-10-10      2000    1
2       124255  2022-10-11      4000    2
3       305531  2022-10-12      7000    3
\.


--
-- TOC entry 4905 (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 4921 (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,
ss_id, ss_pair_number) FROM stdin;
1       5243    2022-01-01      1       1       1       1
2       4526    2022-01-01      2       2       2       2
3       8925    2022-01-01      3       3       3       3
\.


--
-- TOC entry 4907 (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 4906 (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    Смирнов Алексеевич       4
762153  Виктория        Владимирова     Алексеевна      3
252108  Григорий        Косарев Артурович       4
742645  Лука    Семенов Дмитриевич      3
152145  Вероника        Петрова Михайловна      2
381030  Арина   Круглова        Максимовна      1
516111  Моника  Егорова Денисовна       4
305531  Павел   Сорокин Иванович        3
124255  Александр       Михайлов        Сергеевич       2
400419  Иван    Чернышев        Алексеевич      1
\.


--
-- TOC entry 4917 (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, sisg_id, sisg_status) FROM stdin;
124255  2       2021-01-01      2022-01-01      1       Состоит
152145  3       2021-01-01      2022-01-01      2       Не состоит
252108  2       2021-01-01      2022-01-01      3       Состоит
305531  3       2021-01-01      2022-01-01      4       Состоит
381030  2       2021-01-01      2022-01-01      5       Не состоит
400419  1       2021-01-01      2022-01-01      6       Состоит
516111  1       2021-01-01      2022-01-01      7       Состоит
534421  3       2021-01-01      2022-01-01      8       Не состоит
742645  1       2021-01-01      2022-01-01      9       Состоит
```

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```
762153  3       2021-01-01      2022-01-01      10      Состоит
\.


--
-- TOC entry 4915 (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 4908 (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, t_division_code) FROM stdin;
1       Амина   Касаткина       Адамовна        Преподаватель математики        1
2       Александра      Морозова        Фёдоровна       Преподаватель
программирования        2
3       Владислав       Ермаков Артёмович       Преподаватель английского языка
        3
4       Олеся   Соболева        Матвеевна       Преподаватель истории   4
5       Артём   Николаев        Артурович       Преподаватель физики    4
\.


--
-- TOC entry 4738 (class 2606 OID 17027)
-- Name: attestations attestations_pkey; Type: CONSTRAINT; Schema: public;
Owner: postgres
--

ALTER TABLE ONLY public.attestations
    ADD CONSTRAINT attestations_pkey PRIMARY KEY (a_id);


--
-- TOC entry 4722 (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 4726 (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 4718 (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 4734 (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 4716 (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 4736 (class 2606 OID 17029)
```

```
--
-- 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_code);



--
-- TOC entry 4720 (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 4724 (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 4730 (class 2606 OID 17031)
-- 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_id);



--
-- TOC entry 4708 (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 4740 (class 2606 OID 17033)
```

```
--
-- 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_id);



--
-- TOC entry 4712 (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 4732 (class 2606 OID 17035)
-- 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_id);



--
-- TOC entry 4710 (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 4728 (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 4714 (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 4755 (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 4756 (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 4757 (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 4742 (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 4745 (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 4751 (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 4752 (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 4753 (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 4754 (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 4743 (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 4744 (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 4747 (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 4748 (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 4758 (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 4759 (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 4760 (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 4761 (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 4749 (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 4750 (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 4746 (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);
```

```
--
-- TOC entry 4741 (class 2606 OID 17043)
-- Name: teachers teachers_t_division_code_fkey; Type: FK CONSTRAINT; Schema:
public; Owner: postgres
--
```

```
ALTER TABLE ONLY public.teachers
```

```
    ADD CONSTRAINT teachers_t_division_code_fkey FOREIGN KEY
(t_division_code) REFERENCES public.divisions(d_code);



-- Completed on 2023-11-20 17:48:49

--
-- 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.