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Федеральное государственное автономное образовательное учреждение высшего
образования
«НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ ИТМО»
Факультет инфокоммуникационных технологий

ОТЧЕТ О ЛАБОРАТОРНОЙ РАБОТЕ № 3

по теме: Создание таблиц базы данных POSTGRESQL. Заполнение таблиц
рабочими данными.

по дисциплине: Проектирование и реализация баз данных

Специальность:

09.03.03 Мобильные и сетевые технологии

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Санкт-Петербург 2021

ЦЕЛЬ РАБОТЫ

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

ПРАКТИЧЕСКОЕ ЗАДАНИЕ

Наименование БД: LR_3.

Схема логической модели базы данных: рисунок 1.

Dump, содержащий скрипты работы с бд:

```
--  
  
-- PostgreSQL database dump  
  
--  
  
-- Dumped from database version 13.2  
-- Dumped by pg_dump version 13.2  
  
-- Started on 2021-05-25 20:35:08  
  
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 205 (class 1259 OID 16442)
-- Name: auditory; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.auditory (
    id_aud integer NOT NULL,
    type text NOT NULL,
    aud_no text NOT NULL,
    aud_st integer NOT NULL,
    adress text NOT NULL,
    subdivision integer DEFAULT 1 NOT NULL
);
ALTER TABLE public.auditory OWNER TO postgres;
--
-- TOC entry 201 (class 1259 OID 16410)
-- Name: direction; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.direction (
    id_of_direction integer NOT NULL,
    name_of_direction text NOT NULL,
    discipline integer NOT NULL,
    subdivision integer NOT NULL
);
ALTER TABLE ONLY public.direction ALTER COLUMN discipline SET (n_distinct=1);

ALTER TABLE public.direction OWNER TO postgres;
--

```

```

-- TOC entry 200 (class 1259 OID 16402)
-- Name: discipline; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.discipline (
    id_dis integer NOT NULL,
    name_of_dis text NOT NULL
);
ALTER TABLE public.discipline OWNER TO postgres;
--
-- TOC entry 204 (class 1259 OID 16434)
-- Name: group; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public."group" (
    id_g integer NOT NULL,
    group_no text NOT NULL,
    group_year text NOT NULL,
    direction integer DEFAULT 1 NOT NULL
);
ALTER TABLE public."group" OWNER TO postgres;
--
-- TOC entry 206 (class 1259 OID 16450)
-- Name: schedule; Type: TABLE; Schema: public; Owner: postgres
--
CREATE TABLE public.schedule (
    teacher integer NOT NULL,
    discipline integer NOT NULL,
    auditory integer NOT NULL,
    "group" integer NOT NULL,

```

```

    day_of_week integer NOT NULL,

    les_begin time without time zone NOT NULL,

    les_ending time without time zone NOT NULL,

    les_type text NOT NULL,

    id integer NOT NULL

);

ALTER TABLE public.schedule OWNER TO postgres;

--

-- TOC entry 203 (class 1259 OID 16426)
-- Name: subdivision; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.subdivision (

    is_sub integer NOT NULL,

    name_sub text NOT NULL

);

ALTER TABLE public.subdivision OWNER TO postgres;

--

-- TOC entry 202 (class 1259 OID 16418)
-- Name: teacher; Type: TABLE; Schema: public; Owner: postgres
--

CREATE TABLE public.teacher (

    id_t integer NOT NULL,

    surname text NOT NULL,

    name text NOT NULL,

    patronymic text,

    discipline integer NOT NULL,

    "position" text

```

```

);

ALTER TABLE public.teacher OWNER TO postgres;

--
-- TOC entry 3039 (class 0 OID 16442)
-- Dependencies: 205
-- Data for Name: auditory; Type: TABLE DATA; Schema: public; Owner: postgres
--

COPY public.auditory (id_aud, type, aud_no, aud_st, adress, subdivision) FROM stdin;
1      type    202    23     ad      1
\.

--
-- TOC entry 3035 (class 0 OID 16410)
-- Dependencies: 201
-- Data for Name: direction; Type: TABLE DATA; Schema: public; Owner: postgres
--

COPY public.direction (id_of_direction, name_of_direction, discipline, subdivision) FROM
stdin;
1      2021    22      21
\.

--
-- TOC entry 3034 (class 0 OID 16402)
-- Dependencies: 200
-- Data for Name: discipline; Type: TABLE DATA; Schema: public; Owner: postgres
--

COPY public.discipline (id_dis, name_of_dis) FROM stdin;
\.

```

```

--
-- TOC entry 3038 (class 0 OID 16434)
-- Dependencies: 204
-- Data for Name: group; Type: TABLE DATA; Schema: public; Owner: postgres
--
COPY public."group" (id_g, group_no, group_year, direction) FROM stdin;
1      23      2021    1
\.
```

```

--
-- TOC entry 3040 (class 0 OID 16450)
-- Dependencies: 206
-- Data for Name: schedule; Type: TABLE DATA; Schema: public; Owner: postgres
--
COPY public.schedule (teacher, discipline, auditory, "group", day_of_week, les_begin,
les_ending, les_type, id) FROM stdin;
\.
```

```

--
-- TOC entry 3037 (class 0 OID 16426)
-- Dependencies: 203
-- Data for Name: subdivision; Type: TABLE DATA; Schema: public; Owner: postgres
--
COPY public.subdivision (is_sub, name_sub) FROM stdin;
1      vh
4      fds
\.
```

```

--
-- TOC entry 3036 (class 0 OID 16418)
-- Dependencies: 202

```

```

-- Data for Name: teacher; Type: TABLE DATA; Schema: public; Owner: postgres
--
COPY public.teacher (id_t, surname, name, patronymic, discipline, "position") FROM stdin;
--
-- TOC entry 2892 (class 2606 OID 16446)
-- Name: auditory auditory_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.auditory

    ADD CONSTRAINT auditory_pkey PRIMARY KEY (id_aud);

--
-- TOC entry 2884 (class 2606 OID 16417)
-- Name: direction direction_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.direction

    ADD CONSTRAINT direction_pkey PRIMARY KEY (id_of_direction);

--
-- TOC entry 2882 (class 2606 OID 16409)
-- Name: discipline discipline_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--

ALTER TABLE ONLY public.discipline

    ADD CONSTRAINT discipline_pkey PRIMARY KEY (id_dis);

--
-- TOC entry 2890 (class 2606 OID 16441)
-- Name: group group_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

```



```

--
ALTER TABLE ONLY public."group"
    ADD CONSTRAINT group_pkey PRIMARY KEY (id_g);

--
-- TOC entry 2894 (class 2606 OID 16457)
-- Name: schedule schedule_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.schedule
    ADD CONSTRAINT schedule_pkey PRIMARY KEY (id);

--
-- TOC entry 2888 (class 2606 OID 16433)
-- Name: subdivision subdivision_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.subdivision
    ADD CONSTRAINT subdivision_pkey PRIMARY KEY (is_sub);

--
-- TOC entry 2886 (class 2606 OID 16425)
-- Name: teacher teacher_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.teacher
    ADD CONSTRAINT teacher_pkey PRIMARY KEY (id_t);

--
-- TOC entry 2898 (class 2606 OID 16458)
-- Name: group id_of_direction; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public."group"

```

```

    ADD CONSTRAINT id_of_direction FOREIGN KEY (direction) REFERENCES
public."group"(id_g) NOT VALID;

--

-- TOC entry 2899 (class 2606 OID 16489)

-- Name: auditory is_aud; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.auditory

    ADD CONSTRAINT is_aud FOREIGN KEY (id_aud) REFERENCES
public.subdivision(is_sub) NOT VALID;

--

-- TOC entry 2903 (class 2606 OID 16524)

-- Name: schedule is_audi; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.schedule

    ADD CONSTRAINT is_audi FOREIGN KEY (auditory) REFERENCES
public.auditory(id_aud) NOT VALID;

--

-- TOC entry 2896 (class 2606 OID 16499)

-- Name: direction is_disc; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.direction

    ADD CONSTRAINT is_disc FOREIGN KEY (id_of_direction) REFERENCES
public.discipline(id_dis) NOT VALID;

--

-- TOC entry 2897 (class 2606 OID 16504)

-- Name: teacher is_disci; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.teacher

    ADD CONSTRAINT is_disci FOREIGN KEY (id_t) REFERENCES public.discipline(id_dis)
NOT VALID;

```

```

--
-- TOC entry 2901 (class 2606 OID 16514)
-- Name: schedule is_discis; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.schedule

    ADD CONSTRAINT is_discis FOREIGN KEY (discipline) REFERENCES
public.discipline(id_dis) NOT VALID;
--
-- TOC entry 2902 (class 2606 OID 16519)
-- Name: schedule is_groups; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.schedule

    ADD CONSTRAINT is_groups FOREIGN KEY ("group") REFERENCES
public."group"(id_g) NOT VALID;
--
-- TOC entry 2895 (class 2606 OID 16494)
-- Name: direction is_sbb; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.direction

    ADD CONSTRAINT is_sbb FOREIGN KEY (id_of_direction) REFERENCES
public.subdivision(is_sub) NOT VALID;
--
-- TOC entry 2900 (class 2606 OID 16509)
-- Name: schedule is_teach; Type: FK CONSTRAINT; Schema: public; Owner: postgres
--
ALTER TABLE ONLY public.schedule

    ADD CONSTRAINT is_teach FOREIGN KEY (teacher) REFERENCES public.teacher(id_t)
NOT VALID;

```

-- Completed on 2021-05-25 20:35:10

--

-- PostgreSQL database dump complete

--

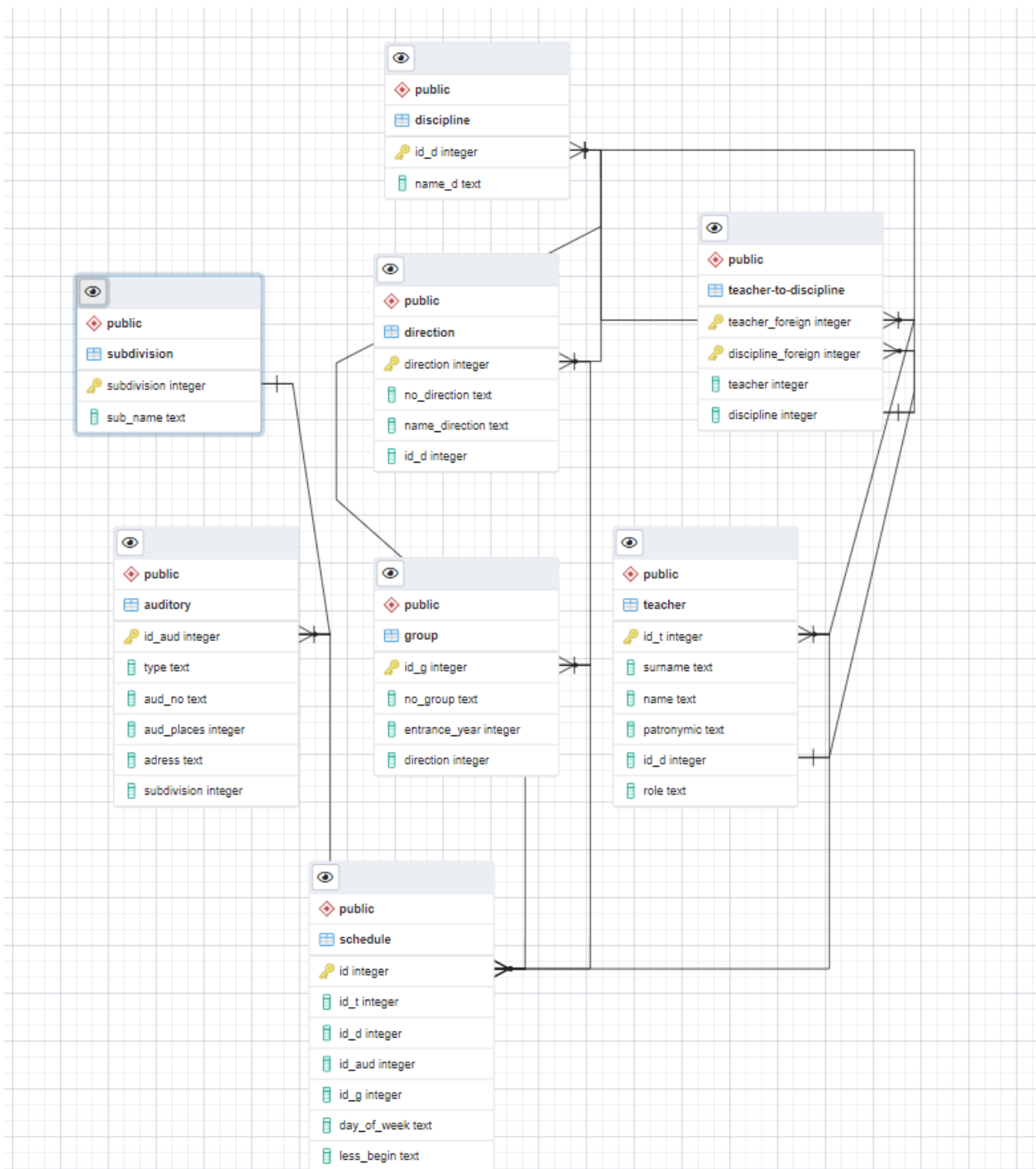


Рисунок 1 – логическая модель базы данных

Вывод: в ходе выполнения работы была создана база данных в Postgresql, созданы таблицы и ограничения на значения столбцов, в базу данных были занесены рабочие

данные, а также была создана логическая модель базы данных и dump.