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федеральное государственное автономное образовательное учреждение высшего
образования
«САНКТ-ПЕТЕРБУРГСКИЙ НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ
УНИВЕРСИТЕТ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ,
МЕХАНИКИ И ОПТИКИ»
(УНИВЕРСИТЕТ ИТМО)
Факультет среднего профессионального образования

ОТЧЁТ

О ПРАКТИЧЕСКОЙ РАБОТЕ № 4

по теме: Анализ данных. Создание таблиц базы данных PostgreSQL.
Заполнение таблиц рабочими данными.
по дисциплине: Основы проектирования баз данных

Специальность 09.02.07 Информационные системы и программирование

Проверил:

_____ Говоров А.И.

Дата: «____» _____ 2020г.

Оценка _____

Выполнил:

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ПОСТАНОВКА ЗАДАЧИ

Цель лабораторной работы №4: овладеть практическими навыками создания таблиц базы данных PostgreSQL, заполнения их рабочими данными, резервного копирования и восстановления баз данных.

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. Заполнить таблицы рабочими данными.
5. Создать резервную копию базы данных.
6. Восстановить базу данных на другом ПК.

ВЫПОЛНЕНИЕ

Dump, содержащий скрипты работы БД, представлен ниже:

```
--  
  
-- PostgreSQL database dump  
  
--  
  
-- Dumped from database version 12.4  
-- Dumped by pg_dump version 12.4  
  
-- Started on 2020-11-13 16:04:13  
  
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 2877 (class 1262 OID 16615)  
  
-- Name: hotel; Type: DATABASE; Schema: -; Owner: postgres  
  
--
```

```
CREATE DATABASE hotel WITH TEMPLATE = template0 ENCODING = 'UTF8' LC_COLLATE =  
'Russian_Russia.1251' LC_CTYPE = 'Russian_Russia.1251';
```

```
ALTER DATABASE hotel OWNER TO postgres;
```

```
\connect hotel
```

```
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 8 (class 2615 OID 16616)
```

```
-- Name: hotel; Type: SCHEMA; Schema: -; Owner: postgres
```

```
--
```

```
CREATE SCHEMA hotel;
```

```
ALTER SCHEMA hotel OWNER TO postgres;
```

```
SET default_tablespace = '';
```

```
SET default_table_access_method = heap;
```

```
--
```

```
-- TOC entry 203 (class 1259 OID 16617)
```

```
-- Name: Admin; Type: TABLE; Schema: hotel; Owner: postgres
```

```
--
```

```
CREATE TABLE hotel."Admin" (  
    "AdminName" character varying NOT NULL,  
    "Post" character varying,  
    "Education" character varying,  
    "PassportNumber" character varying(10) NOT NULL,  
    "Experience" integer  
);
```

```
ALTER TABLE hotel."Admin" OWNER TO postgres;
```

```
--
```

```
-- TOC entry 208 (class 1259 OID 16653)
```

```
-- Name: Cleaning; Type: TABLE; Schema: hotel; Owner: postgres
```

```
--
```

```
CREATE TABLE hotel."Cleaning" (  
    "RoomNumber" integer NOT NULL,  
    "AdminName" character varying NOT NULL,  
    "StaffName" character varying NOT NULL,  
    "Status" character varying,  
    "CleaningDate" date,  
    "Time" timestamp without time zone,
```

```
"Floor" integer  
);
```

```
ALTER TABLE hotel."Cleaning" OWNER TO postgres;
```

```
--
```

```
-- TOC entry 206 (class 1259 OID 16637)
```

```
-- Name: Client; Type: TABLE; Schema: hotel; Owner: postgres
```

```
--
```

```
CREATE TABLE hotel."Client" (  
    "ClientName" character varying NOT NULL,  
    "PassportNumber" character varying(10) NOT NULL,  
    "City" character varying  
);
```

```
ALTER TABLE hotel."Client" OWNER TO postgres;
```

```
--
```

```
-- TOC entry 205 (class 1259 OID 16631)
```

```
-- Name: LiveContract; Type: TABLE; Schema: hotel; Owner: postgres
```

```
--
```

```
CREATE TABLE hotel."LiveContract" (  
    "AdminName" character varying NOT NULL,  
    "ClientName" character varying NOT NULL,  
    "RoomNumber" integer NOT NULL,  
    "ContractNumber" character varying NOT NULL,  
    "LivingStatus" character varying,
```

```
"ArrivalDate" date,  
"LivingTime" integer  
);
```

```
ALTER TABLE hotel."LiveContract" OWNER TO postgres;
```

```
--
```

```
-- TOC entry 204 (class 1259 OID 16625)
```

```
-- Name: OrderContract; Type: TABLE; Schema: hotel; Owner: postgres
```

```
--
```

```
CREATE TABLE hotel."OrderContract" (  
    "AdminName" character varying NOT NULL,  
    "StaffName" character varying NOT NULL,  
    "Status" character varying,  
    "Salary" integer  
);
```

```
ALTER TABLE hotel."OrderContract" OWNER TO postgres;
```

```
--
```

```
-- TOC entry 207 (class 1259 OID 16645)
```

```
-- Name: Room; Type: TABLE; Schema: hotel; Owner: postgres
```

```
--
```

```
CREATE TABLE hotel."Room" (  
    "RoomNumber" integer NOT NULL,  
    "Type" character varying NOT NULL,  
    "Price" integer NOT NULL
```



```
);
```

```
ALTER TABLE hotel."Room" OWNER TO postgres;
```

```
--
```

```
-- TOC entry 209 (class 1259 OID 16659)
```

```
-- Name: Staff; Type: TABLE; Schema: hotel; Owner: postgres
```

```
--
```

```
CREATE TABLE hotel."Staff" (
```

```
    "StaffName" character varying NOT NULL,
```

```
    "Experience" integer,
```

```
    "Post" character varying,
```

```
    "PassportNumber" character varying NOT NULL
```

```
);
```

```
ALTER TABLE hotel."Staff" OWNER TO postgres;
```

```
--
```

```
-- TOC entry 2865 (class 0 OID 16617)
```

```
-- Dependencies: 203
```

```
-- Data for Name: Admin; Type: TABLE DATA; Schema: hotel; Owner: postgres
```

```
--
```

```
INSERT INTO hotel."Admin" ("AdminName", "Post", "Education", "PassportNumber", "Experience")  
VALUES ('Artem Orlov', 'Director', 'ITMO', '1234567892', 3);
```

```
INSERT INTO hotel."Admin" ("AdminName", "Post", "Education", "PassportNumber", "Experience")  
VALUES ('Karmik Azbekyan', 'Manager', 'MGU', '8786478235', 17);
```

```
INSERT INTO hotel."Admin" ("AdminName", "Post", "Education", "PassportNumber", "Experience")  
VALUES ('Vadim Smolov', 'Director', 'Lolitech', '5789490564', 2);
```

```
INSERT INTO hotel."Admin" ("AdminName", "Post", "Education", "PassportNumber", "Experience")
VALUES ('Ashot Vanshot', 'Director', 'MFTI', '8192476723', 9);
```

```
INSERT INTO hotel."Admin" ("AdminName", "Post", "Education", "PassportNumber", "Experience")
VALUES ('Piko Dano', 'Director', 'ITMO', '1280978456', 6);
```

--

-- TOC entry 2870 (class 0 OID 16653)

-- Dependencies: 208

-- Data for Name: Cleaning; Type: TABLE DATA; Schema: hotel; Owner: postgres

--

--

-- TOC entry 2868 (class 0 OID 16637)

-- Dependencies: 206

-- Data for Name: Client; Type: TABLE DATA; Schema: hotel; Owner: postgres

--

```
INSERT INTO hotel."Client" ("ClientName", "PassportNumber", "City") VALUES ('Victor Abdul',
'1207894623', 'Moscow');
```

```
INSERT INTO hotel."Client" ("ClientName", "PassportNumber", "City") VALUES ('Vova Vist',
'8912477452', 'Kiev');
```

```
INSERT INTO hotel."Client" ("ClientName", "PassportNumber", "City") VALUES ('Kventin Pupkin',
'1289746745', 'London
');
```

```
INSERT INTO hotel."Client" ("ClientName", "PassportNumber", "City") VALUES ('Misha Voron',
'124127892', 'Novgorod');
```

--

-- TOC entry 2867 (class 0 OID 16631)

-- Dependencies: 205

-- Data for Name: LiveContract; Type: TABLE DATA; Schema: hotel; Owner: postgres

--

```
INSERT INTO hotel."LiveContract" ("AdminName", "ClientName", "RoomNumber", "ContractNumber",
"LivingStatus", "ArrivalDate", "LivingTime") VALUES ('Karmik Azbekyan', 'Kventin Pupkin', 10, 'A23FV2',
'Transit', '2019-08-12', 12);
```

```
INSERT INTO hotel."LiveContract" ("AdminName", "ClientName", "RoomNumber", "ContractNumber",
"LivingStatus", "ArrivalDate", "LivingTime") VALUES ('Vadim Smolov', 'Vova Vist', 414, 'JGKLK23',
'Transit', '2018-02-05', 14);
```

--

-- TOC entry 2866 (class 0 OID 16625)

-- Dependencies: 204

-- Data for Name: OrderContract; Type: TABLE DATA; Schema: hotel; Owner: postgres

--

```
INSERT INTO hotel."OrderContract" ("AdminName", "StaffName", "Status", "Salary") VALUES ('Artem
Orlov', 'Alexander Dianov', 'Active', 3222);
```

```
INSERT INTO hotel."OrderContract" ("AdminName", "StaffName", "Status", "Salary") VALUES ('Karmik
Azbekyan', 'Andrey Sumchatko', 'Active', 1231);
```

```
INSERT INTO hotel."OrderContract" ("AdminName", "StaffName", "Status", "Salary") VALUES ('Artem
Orlov', 'Elnapolo Lapientro', 'Active', 2300);
```

```
INSERT INTO hotel."OrderContract" ("AdminName", "StaffName", "Status", "Salary") VALUES ('Artem
Orlov', 'Joji Bob', 'Rejected', 5555);
```

```
INSERT INTO hotel."OrderContract" ("AdminName", "StaffName", "Status", "Salary") VALUES ('Karmik
Azbekyan', 'Joji Bob', 'Active', 6600);
```

--

-- TOC entry 2869 (class 0 OID 16645)

-- Dependencies: 207

-- Data for Name: Room; Type: TABLE DATA; Schema: hotel; Owner: postgres

--

```
INSERT INTO hotel."Room" ("RoomNumber", "Type", "Price") VALUES (213, 'Normal', 1900);
```

```
INSERT INTO hotel."Room" ("RoomNumber", "Type", "Price") VALUES (414, 'Normal', 2100);
```

```
INSERT INTO hotel."Room" ("RoomNumber", "Type", "Price") VALUES (10, 'VIP', 8900);
```

```
INSERT INTO hotel."Room" ("RoomNumber", "Type", "Price") VALUES (999, 'Normal', 6767);
```

```
--
```

```
-- TOC entry 2871 (class 0 OID 16659)
```

```
-- Dependencies: 209
```

```
-- Data for Name: Staff; Type: TABLE DATA; Schema: hotel; Owner: postgres
```

```
--
```

```
INSERT INTO hotel."Staff" ("StaffName", "Experience", "Post", "PassportNumber") VALUES ('Alexander Dianov', 2, 'Cleaner', '8476897845');
```

```
INSERT INTO hotel."Staff" ("StaffName", "Experience", "Post", "PassportNumber") VALUES ('Elnapolo Lapientro', 18, 'Cleaner', '1294877853');
```

```
INSERT INTO hotel."Staff" ("StaffName", "Experience", "Post", "PassportNumber") VALUES ('Andrey Sumchatko', 6, 'Cleaner', '2380980923');
```

```
INSERT INTO hotel."Staff" ("StaffName", "Experience", "Post", "PassportNumber") VALUES ('Joji Bob', 6, 'Cleaner', '3874599561');
```

```
--
```

```
-- TOC entry 2718 (class 2606 OID 16624)
```

```
-- Name: Admin Admin_pkey; Type: CONSTRAINT; Schema: hotel; Owner: postgres
```

```
--
```

```
ALTER TABLE ONLY hotel."Admin"
```

```
ADD CONSTRAINT "Admin_pkey" PRIMARY KEY ("AdminName");
```

```
--
```

-- TOC entry 2728 (class 2606 OID 16737)

-- Name: Cleaning Cleaning_pkey; Type: CONSTRAINT; Schema: hotel; Owner: postgres

--

ALTER TABLE ONLY hotel."Cleaning"

ADD CONSTRAINT "Cleaning_pkey" PRIMARY KEY ("RoomNumber", "AdminName", "StaffName");

--

-- TOC entry 2724 (class 2606 OID 16644)

-- Name: Client Client_pkey; Type: CONSTRAINT; Schema: hotel; Owner: postgres

--

ALTER TABLE ONLY hotel."Client"

ADD CONSTRAINT "Client_pkey" PRIMARY KEY ("ClientName");

--

-- TOC entry 2722 (class 2606 OID 16735)

-- Name: LiveContract LiveContract_pkey; Type: CONSTRAINT; Schema: hotel; Owner: postgres

--

ALTER TABLE ONLY hotel."LiveContract"

ADD CONSTRAINT "LiveContract_pkey" PRIMARY KEY ("AdminName", "RoomNumber",
"ContractNumber", "ClientName");

--

-- TOC entry 2720 (class 2606 OID 16673)

-- Name: OrderContract OrderContract_pkey; Type: CONSTRAINT; Schema: hotel; Owner: postgres

--

```
ALTER TABLE ONLY hotel."OrderContract"
```

```
    ADD CONSTRAINT "OrderContract_pkey" PRIMARY KEY ("AdminName", "StaffName");
```

```
--
```

```
-- TOC entry 2726 (class 2606 OID 16652)
```

```
-- Name: Room RoomNubmer_pkey; Type: CONSTRAINT; Schema: hotel; Owner: postgres
```

```
--
```

```
ALTER TABLE ONLY hotel."Room"
```

```
    ADD CONSTRAINT "RoomNubmer_pkey" PRIMARY KEY ("RoomNumber");
```

```
--
```

```
-- TOC entry 2730 (class 2606 OID 16666)
```

```
-- Name: Staff Staff_pkey; Type: CONSTRAINT; Schema: hotel; Owner: postgres
```

```
--
```

```
ALTER TABLE ONLY hotel."Staff"
```

```
    ADD CONSTRAINT "Staff_pkey" PRIMARY KEY ("StaffName");
```

```
--
```

```
-- TOC entry 2731 (class 2606 OID 16667)
```

```
-- Name: OrderContract Admin_OrderContract; Type: FK CONSTRAINT; Schema: hotel; Owner: postgres
```

```
--
```

```
ALTER TABLE ONLY hotel."OrderContract"
```

```
    ADD CONSTRAINT "Admin_OrderContract" FOREIGN KEY ("AdminName") REFERENCES  
hotel."Admin"("AdminName") NOT VALID;
```

```
--
```

-- TOC entry 2737 (class 2606 OID 16709)

-- Name: Cleaning_Cleaning_AdminName_fkey; Type: FK CONSTRAINT; Schema: hotel; Owner: postgres

--

ALTER TABLE ONLY hotel."Cleaning"

ADD CONSTRAINT "Cleaning_AdminName_fkey" FOREIGN KEY ("AdminName") REFERENCES
hotel."Admin"("AdminName") ON UPDATE CASCADE NOT VALID;

--

-- TOC entry 2736 (class 2606 OID 16704)

-- Name: Cleaning_Cleaning_RoomNumber_fkey; Type: FK CONSTRAINT; Schema: hotel; Owner: postgres

--

ALTER TABLE ONLY hotel."Cleaning"

ADD CONSTRAINT "Cleaning_RoomNumber_fkey" FOREIGN KEY ("RoomNumber") REFERENCES
hotel."Room"("RoomNumber") ON UPDATE CASCADE NOT VALID;

--

-- TOC entry 2738 (class 2606 OID 16714)

-- Name: Cleaning_Cleaning_StaffName_fkey; Type: FK CONSTRAINT; Schema: hotel; Owner: postgres

--

ALTER TABLE ONLY hotel."Cleaning"

ADD CONSTRAINT "Cleaning_StaffName_fkey" FOREIGN KEY ("StaffName") REFERENCES
hotel."Staff"("StaffName") ON UPDATE CASCADE NOT VALID;

--

-- TOC entry 2733 (class 2606 OID 16719)

-- Name: LiveContract_LiveContract_AdminName_fkey; Type: FK CONSTRAINT; Schema: hotel; Owner:
postgres

--

ALTER TABLE ONLY hotel."LiveContract"

ADD CONSTRAINT "LiveContract_AdminName_fkey" FOREIGN KEY ("AdminName") REFERENCES
hotel."Admin"("AdminName") ON UPDATE CASCADE NOT VALID;

--

-- TOC entry 2734 (class 2606 OID 16724)

-- Name: LiveContract LiveContract_ClienName_fkey; Type: FK CONSTRAINT; Schema: hotel; Owner:
postgres

--

ALTER TABLE ONLY hotel."LiveContract"

ADD CONSTRAINT "LiveContract_ClienName_fkey" FOREIGN KEY ("ClientName") REFERENCES
hotel."Client"("ClientName") ON UPDATE CASCADE NOT VALID;

--

-- TOC entry 2735 (class 2606 OID 16729)

-- Name: LiveContract LiveContract_RoomNumber_fkey; Type: FK CONSTRAINT; Schema: hotel; Owner:
postgres

--

ALTER TABLE ONLY hotel."LiveContract"

ADD CONSTRAINT "LiveContract_RoomNumber_fkey" FOREIGN KEY ("RoomNumber") REFERENCES
hotel."Room"("RoomNumber") ON UPDATE CASCADE NOT VALID;

--

-- TOC entry 2732 (class 2606 OID 16684)

-- Name: OrderContract OrderContract_StaffName_fkey; Type: FK CONSTRAINT; Schema: hotel; Owner:
postgres

--


```
ALTER TABLE ONLY hotel."OrderContract"
```

```
    ADD CONSTRAINT "OrderContract_StaffName_fkey" FOREIGN KEY ("StaffName") REFERENCES  
hotel."Staff"("StaffName") ON UPDATE CASCADE ON DELETE CASCADE NOT VALID;
```

```
-- Completed on 2020-11-13 16:04:13
```

```
--
```

```
-- PostgreSQL database dump complete
```

```
--
```

ВЫВОД

В практической работе №4 были получены практические навыки создания таблиц базы данных PostgreSQL, заполнения их рабочими данными, резервного копирования и восстановления баз данных.