Министерство образования и науки Российской Федерации

федеральное государственное автономное образовательное учреждение высшего образования

«САНКТ-ПЕТЕРБУРГСКИЙ НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ

УНИВЕРСИТЕТ ИТМО»

Факультет среднего профессионального образования

ОТЧЁТ

ПО ПРАКТИЧЕСКОЙ РАБОТЕ № 4

по теме: Создание таблиц БД POSTGRESQL. Заполнение таблиц рабочими данными

по дисциплине: Основы проектирования баз данных

Специальность 09.02.07 Информационные системы и программирование

Выполнил:

студент группы Y2336

\_\_\_\_\_\_\_\_ Наумов М.А.

Проверил:

\_\_\_\_\_\_\_\_ Говоров А. И.

Дата: «\_\_\_\_» \_\_\_\_\_\_\_\_\_\_\_\_ 2020г.

Оценка \_\_\_\_\_\_\_\_\_\_\_

Санкт-Петербург 2020

Цель работы

Цель практической работы №4:овладеть практическими навыками создания таблиц базы данных PostgreSQL 10 (11), 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. Заполнить таблицы БД рабочими данными.

5. Создать резервную копию БД.

6. Восстановить БД на другом ПК..

Dump, содержащий скрипты работы с БД

Создание Структуры Таблиц

CREATE DATABASE "Naumov" WITH TEMPLATE = template0 ENCODING = 'UTF8' LC\_COLLATE = 'Russian\_Russia.1251' LC\_CTYPE = 'Russian\_Russia.1251';

CREATE TABLE public.cicerone (

id\_cicerone integer NOT NULL,

name\_cicerone "char"[],

work\_experience interval,

contact\_cicerone "char"[],

portfolio text

);

CREATE TABLE public.climber (

id\_climber integer NOT NULL,

name\_climber "char"[] NOT NULL,

id\_club integer NOT NULL,

contact\_climber "char"[] NOT NULL,

address\_climed "char"[] NOT NULL

);

CREATE TABLE public.climbing (

id\_climbing integer NOT NULL,

id\_group integer NOT NULL,

start\_plan\_climbing date NOT NULL,

start\_fact\_climbing date NOT NULL,

end\_plan\_climbing date NOT NULL,

end\_fact\_climbing date NOT NULL,

duration\_climbing interval NOT NULL,

brief\_information\_climbing text NOT NULL,

id\_route integer

); ­

CREATE TABLE public.club (

"Id\_club" integer NOT NULL,

city\_club "char"[] NOT NULL,

contact\_club\_name "char"[] NOT NULL,

country\_club "char"[] NOT NULL,

email\_club "char"[] NOT NULL,

name\_club "char"[] NOT NULL,

phone\_number\_club integer NOT NULL

);

CREATE TABLE public.contract\_cicerone (

id\_agency integer NOT NULL,

id\_cicerone integer NOT NULL,

terms\_contract\_cicerone text NOT NULL,

id\_contract\_cicerone integer NOT NULL

);

CREATE TABLE public.contract\_climber (

id\_climber integer NOT NULL,

id\_cicerone integer NOT NULL,

id\_group integer NOT NULL,

id\_agency integer NOT NULL,

terms\_contract\_climber text NOT NULL,

id\_contract\_climber integer NOT NULL

);

CREATE TABLE public.emergancy\_situation (

"Id\_situation" integer NOT NULL,

type\_situation "char"[] NOT NULL,

id\_climber integer NOT NULL,

id\_climbing integer NOT NULL,

time\_situation time with time zone NOT NULL

);

CREATE TABLE public."group" (

id\_group integer NOT NULL,

quantity\_member integer

);

CREATE TABLE public.insurance\_case (

id\_insurance\_case integer NOT NULL,

id\_situation integer NOT NULL,

sum\_reimbursement integer NOT NULL,

date\_reimbursement date NOT NULL,

id\_insurance\_contract integer NOT NULL

);

CREATE TABLE public.insurance\_contract (

id\_agency integer NOT NULL,

id\_climber integer NOT NULL,

insurance\_contract\_terms text NOT NULL,

id\_insurance\_contract integer NOT NULL

);

CREATE TABLE public.mountain (

country\_mountain "char"[] NOT NULL,

area\_mountain "char"[] NOT NULL,

id\_mountain integer NOT NULL,

name\_mountain "char" NOT NULL

);

CREATE TABLE public.peak (

name\_peak "char"[] NOT NULL,

country\_peak "char"[] NOT NULL,

area\_peak "char"[] NOT NULL,

hight\_peak integer NOT NULL,

id\_mountain integer NOT NULL,

id\_peak integer NOT NULL

);

CREATE TABLE public.travel\_agency (

id\_agency integer NOT NULL,

number\_of\_cicerone integer NOT NULL,

name\_agency "char"[] NOT NULL

);

CREATE TABLE public.route (

id\_route integer NOT NULL,

description\_route text NOT NULL,

name\_route "char"[] NOT NULL,

"Id\_peak" integer NOT NULL

);

Создание ПЕРВИЧНЫХ ключей

ALTER TABLE ONLY public.club

ADD CONSTRAINT "Club\_pkey" PRIMARY KEY ("Id\_club");

ALTER TABLE ONLY public.cicerone

ADD CONSTRAINT cicerone\_pkey PRIMARY KEY (id\_cicerone);

ALTER TABLE ONLY public."Allowance"

ADD CONSTRAINT "Allowance\_pkey" PRIMARY KEY ("ID\_Allowance");

ALTER TABLE ONLY public."Allowance" DROP CONSTRAINT "Allowance\_pkey";

ALTER TABLE ONLY public.climber

ADD CONSTRAINT climber\_pkey PRIMARY KEY (id\_climber);

ALTER TABLE ONLY public.climbing

ADD CONSTRAINT climbing\_pkey PRIMARY KEY (id\_climbing);

AALTER TABLE ONLY public.contract\_cicerone

ADD CONSTRAINT contract\_cicerone\_pkey PRIMARY KEY (id\_contract\_cicerone);

ALTER TABLE ONLY public.contract\_climber

ADD CONSTRAINT contract\_climber\_pkey PRIMARY KEY (id\_contract\_climber);

ALTER TABLE ONLY public.emergancy\_situation

ADD CONSTRAINT emergancy\_situation\_pkey PRIMARY KEY ("Id\_situation");

ALTER TABLE ONLY public."group"

ADD CONSTRAINT group\_pkey PRIMARY KEY (id\_group);

ALTER TABLE ONLY public.insurance\_case

ADD CONSTRAINT insurance\_case\_pkey PRIMARY KEY (id\_insurance\_case);

ALTER TABLE ONLY public.insurance\_contract

ADD CONSTRAINT insurance\_contract\_pkey PRIMARY KEY (id\_insurance\_contract);

ALTER TABLE ONLY public.mountain

ADD CONSTRAINT mountain\_pkey PRIMARY KEY (id\_mountain);

ALTER TABLE ONLY public.peak

ADD CONSTRAINT peak\_pkey PRIMARY KEY (id\_peak);

ALTER TABLE ONLY public.route

ADD CONSTRAINT route\_name\_route\_key UNIQUE (name\_route);

ALTER TABLE ONLY public.route

ADD CONSTRAINT route\_pkey PRIMARY KEY (id\_route);

ALTER TABLE ONLY public.travel\_agency

ADD CONSTRAINT travel\_agency\_pkey PRIMARY KEY (id\_agency)

Создание внешних ключей

ALTER TABLE ONLY public.climbing

ADD CONSTRAINT climbing\_id\_group\_fkey FOREIGN KEY (id\_group) REFERENCES public."group"(id\_group);

ALTER TABLE ONLY public.climbing

ADD CONSTRAINT climbing\_id\_route\_fkey FOREIGN KEY (id\_route) REFERENCES public.route(id\_route) ON UPDATE CASCADE ON DELETE CASCADE;

ALTER TABLE ONLY public.emergancy\_situation

ADD CONSTRAINT emergancy\_situation\_id\_climber\_fkey FOREIGN KEY (id\_climber) REFERENCES public.climber(id\_climber);

ALTER TABLE ONLY public.emergancy\_situation

ADD CONSTRAINT emergancy\_situation\_id\_climbing\_fkey FOREIGN KEY (id\_climbing) REFERENCES public.climbing(id\_climbing);

ALTER TABLE ONLY public.insurance\_contract

ADD CONSTRAINT id\_agency FOREIGN KEY (id\_agency) REFERENCES public.travel\_agency(id\_agency);

ALTER TABLE ONLY public.contract\_cicerone

ADD CONSTRAINT id\_agency FOREIGN KEY (id\_agency) REFERENCES public.travel\_agency(id\_agency);

ALTER TABLE ONLY public.contract\_climber

ADD CONSTRAINT id\_agency FOREIGN KEY (id\_agency) REFERENCES public.travel\_agency(id\_agency);

ALTER TABLE ONLY public.contract\_cicerone

ADD CONSTRAINT id\_cicerone FOREIGN KEY (id\_cicerone) REFERENCES public.cicerone(id\_cicerone);

ALTER TABLE ONLY public.contract\_climber

ADD CONSTRAINT id\_cicerone FOREIGN KEY (id\_cicerone) REFERENCES public.cicerone(id\_cicerone);

ALTER TABLE ONLY public.insurance\_contract

ADD CONSTRAINT id\_climber FOREIGN KEY (id\_climber) REFERENCES public.climber(id\_climber);

ALTER TABLE ONLY public.contract\_climber

ADD CONSTRAINT id\_climber FOREIGN KEY (id\_climber) REFERENCES public.climber(id\_climber);

ALTER TABLE ONLY public.climber

ADD CONSTRAINT id\_club FOREIGN KEY (id\_club) REFERENCES public.club("Id\_club");

ALTER TABLE ONLY public.contract\_climber

ADD CONSTRAINT id\_group FOREIGN KEY (id\_group) REFERENCES public."group"(id\_group);

ALTER TABLE ONLY public.insurance\_case

ADD CONSTRAINT id\_insurance\_contract FOREIGN KEY (id\_insurance\_contract) REFERENCES public.insurance\_contract(id\_insurance\_contract);

ALTER TABLE ONLY public.insurance\_case

ADD CONSTRAINT id\_situation FOREIGN KEY (id\_situation) REFERENCES public.emergancy\_situation("Id\_situation");

ALTER TABLE ONLY public.peak

ADD CONSTRAINT peak\_id\_mountain\_fkey FOREIGN KEY (id\_mountain) REFERENCES public.mountain(id\_mountain);

ALTER TABLE ONLY public.route

ADD CONSTRAINT "route\_Id\_peak\_fkey" FOREIGN KEY ("Id\_peak") REFERENCES public.peak(id\_peak);

зАПОЛНЕНИЕ ТАБЛИЦ

COPY public.cicerone (id\_cicerone, name\_cicerone, work\_experience, contact\_cicerone, portfolio) FROM stdin;

1 {A} 00:00:05 {a} Какой-то текст

2 {B} 00:00:06 {b} Какой-то текст

3 {C} 00:00:04 {c} Какой-то текст

4 {D} 00:00:06 {D} Какой-то текст

5 {E} 00:00:07 {e} Какой-то текст

\.

COPY public.climber (id\_climber, name\_climber, id\_club, contact\_climber, address\_climed) FROM stdin;

1 {M} 1 {m} {P}

2 {M} 2 {m} {A}

3 {A} 3 {a} {S}

4 {A} 4 {a} {O}

5 {J} 5 {a} {B}

\.

COPY public.climbing (id\_climbing, id\_group, start\_plan\_climbing, start\_fact\_climbing, end\_plan\_climbing, end\_fact\_climbing, duration\_climbing, brief\_information\_climbing, id\_route) FROM stdin;

1 1 2020-02-02 2020-02-02 2020-02-05 2020-02-06 00:00:03 Какой-то текст 1

2 2 2020-03-04 2020-03-04 2020-03-11 2020-03-11 00:00:07 Какой-то текст 2

3 3 2020-01-03 2020-01-05 2020-01-15 2020-01-14 00:00:12 Какой-то текст 3

4 4 2020-01-05 2020-01-03 2020-03-21 2020-03-21 00:01:16 Какой-то текст 4

5 5 2019-03-08 2019-03-08 2019-04-05 2019-04-10 00:00:28 Какой-то текст 5

\.

COPY public.club ("Id\_club", city\_club, contact\_club\_name, country\_club, email\_club, name\_club, phone\_number\_club) FROM stdin;

1 {S} {I} {R} {t} {T} 5353535

2 {S} {M} {R} {m} {M} 5362182

3 {M} {J} {R} {g} {g} 4525314

4 {M} {M} {R} {p} {T} 5462134

5 {I} {N} {R} {i} {H} 4589561

\.

COPY public.contract\_cicerone (id\_agency, id\_cicerone, terms\_contract\_cicerone, id\_contract\_cicerone) FROM stdin;

1 1 Условия 1

2 2 Условия 2

3 3 Условия 3

4 4 Условия 4

5 5 Условия 5

\.

COPY public.contract\_climber (id\_climber, id\_cicerone, id\_group, id\_agency, terms\_contract\_climber, id\_contract\_climber) FROM stdin;

1 1 1 1 Условия 1

2 2 2 2 Условия 2

3 3 3 3 Условия 3

4 4 4 4 Условия 4

5 5 5 5 Условия 5

\.

COPY public.emergancy\_situation ("Id\_situation", type\_situation, id\_climber, id\_climbing, time\_situation) FROM stdin;

1 {A} 1 1 15:15:00+14:59

2 {B} 2 2 15:00:00+03

3 {C} 3 3 10:31:00+03

4 {D} 4 4 08:03:00+04

5 {E} 5 5 03:17:00+02

\.

COPY public."group" (id\_group, quantity\_member) FROM stdin;

1 15

2 12

3 13

4 15

5 16

\.

COPY public.insurance\_case (id\_insurance\_case, id\_situation, sum\_reimbursement, date\_reimbursement, id\_insurance\_contract) FROM stdin;

1 1 55000 2020-05-30 1

2 2 31500 2020-06-15 2

3 3 90000 2020-09-01 3

4 4 38000 2020-06-01 4

5 5 70000 2019-05-01 5

\.

COPY public.insurance\_contract (id\_agency, id\_climber, insurance\_contract\_terms, id\_insurance\_contract) FROM stdin;

1 1 Условия 1

2 2 Условия\n 2

3 3 Условия 3

4 4 Условия 4

5 5 Условия 5

\.

COPY public.mountain (country\_mountain, area\_mountain, id\_mountain, name\_mountain) FROM stdin;

{R} {C} 2 {

{F} {S} 3 {

{U} {W} 4 {

{E} {N} 5 {

{R} {S} 1 {

\.

COPY public.peak (name\_peak, country\_peak, area\_peak, hight\_peak, id\_mountain, id\_peak) FROM stdin;

{K} {R} {1} 5134 1 1

{R} {R} {1} 1234 2 2

{R} {F} {1} 1567 3 3

{R} {U} {1} 1894 4 4

{R} {E} {1} 5423 5 5

\.

COPY public.route (id\_route, description\_route, name\_route, "Id\_peak") FROM stdin;

1 Какой-то текст {A} 1

2 Какой-то текст {B} 2

3 Какой-то текст {C} 3

4 Какой-то текст {D} 4

5 Какой-то текст {E} 5

\.

COPY public.travel\_agency (id\_agency, number\_of\_cicerone, name\_agency) FROM stdin;

1 1 {A}

2 1 {B}

3 1 {C}

4 1 {D}

5 1 {E}

\.

Вывод

В практической работе №4 были получены практические навыки создания таблиц базы данных PostgreSQL 10 (11), заполнения их рабочими данными, резервного копирования и восстановления БД.