**МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИИ**

**ФГБОУ ВО "Пензенский государственный университет"**

Кафедра "Математическое обеспечение и применение ЭВМ"

Отчет

по лабораторной работе №1

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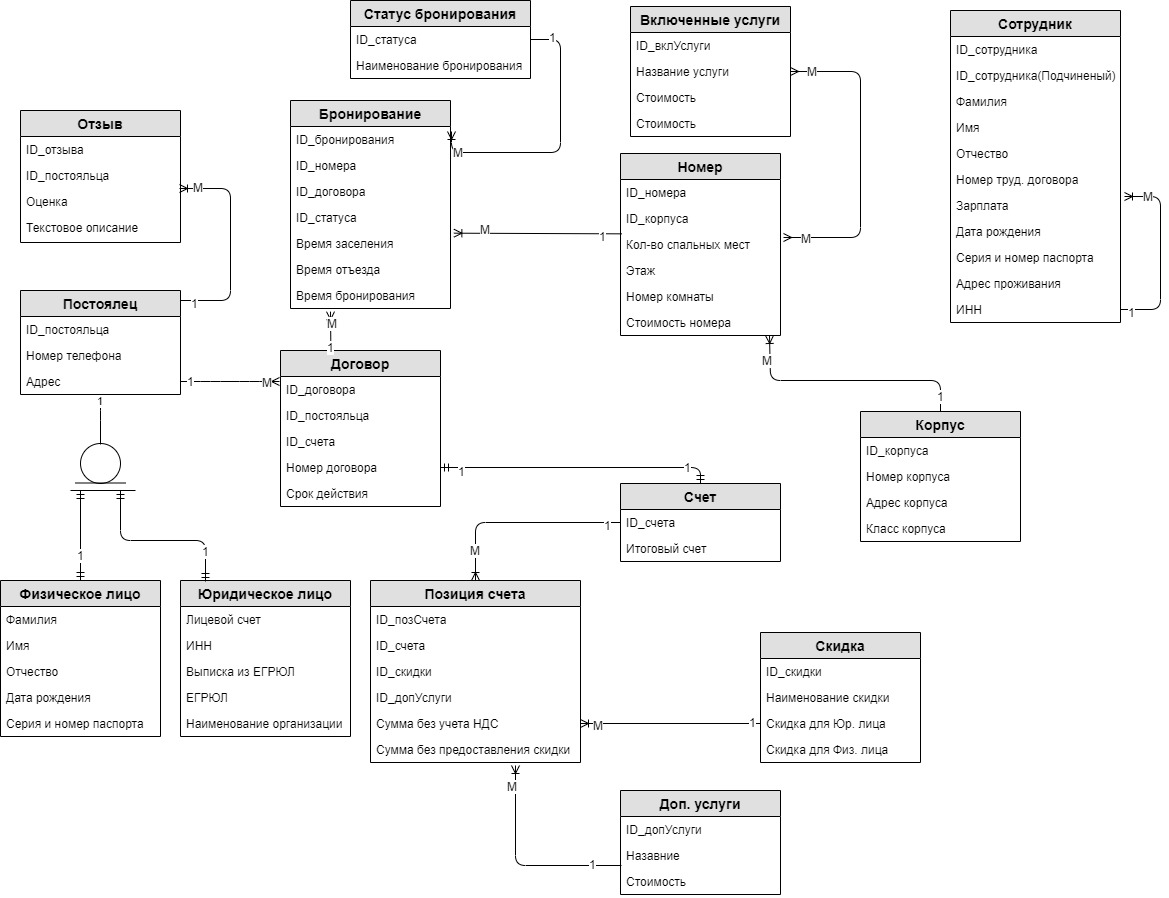
Проверила:

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**Цель работы.** Ознакомление с процессом нормализации схем реляционных баз данных, приобретение практических навыков анализа и построения эффективных схем оперативных баз данных для информационных систем класса OLTP.

**Схема Бд**



**Код Базы данных**

drop table if exists feedback cascade;

drop table if exists fiz\_person cascade;

drop table if exists ur\_person cascade;

drop table if exists client\_booking cascade;

drop table if exists booking cascade;

drop table if exists status\_booking cascade;

drop table if exists type\_booking cascade;

drop table if exists contract cascade;

drop table if exists client cascade;

drop table if exists worker cascade;

drop table if exists bilt\_position\_service cascade;

drop table if exists bilt\_position cascade;

drop table if exists bill cascade;

drop table if exists disscount cascade;

drop table if exists service\_for\_room cascade;

drop table if exists service cascade;

drop table if exists room cascade;

drop table if exists build cascade;

drop table if exists category\_room cascade;

drop table if exists status\_contract cascade;

drop table if exists occupied\_client cascade;

CREATE TABLE Worker

(

id\_worker serial primary key,

surname varchar(20) NOT NULL ,

name varchar(20) NOT NULL ,

lastname varchar(20) NULL ,

id\_parent integer references worker(id\_worker),

employment\_number integer NOT NULL ,

birth\_date timestamp NOT NULL ,

passport varchar(10) NOT NULL ,

address varchar(128) NOT NULL ,

itn varchar(64) NOT NULL

);

CREATE TABLE Build

(

id\_build serial primary key,

build\_adress varchar(45) NOT NULL ,

prestige integer NOT NULL

);

CREATE TABLE Category\_room

(

id\_category\_room serial primary key,

name varchar(64) not null,

beds\_count integer not null

);

CREATE TABLE Room

(

id\_room serial primary key,

id\_category\_room integer references Category\_room(id\_category\_room),

floor\_lvl integer NOT NULL ,

room\_number integer NOT NULL ,

room\_cost float NOT NULL ,

id\_Build integer references build(id\_build)

);

CREATE TABLE Type\_booking

(

id\_type\_booking serial primary key,

name\_type varchar(64) NOT NULL

);

CREATE TABLE Status\_booking

(

id\_status serial primary key,

id\_type\_booking integer references type\_booking(id\_type\_booking),

time\_operation timestamp

);

CREATE TABLE UR\_Person

(

id\_ur\_person serial primary key,

itn varchar(20) NOT NULL ,

name\_organization varchar(64) NOT NULL

);

CREATE TABLE Client

(

id\_client serial primary key,

adress varchar(256) NOT NULL ,

phone\_number varchar(11) NOT NULL,

surname varchar(20) NOT NULL ,

name varchar(20) NOT NULL ,

lastName varchar(20) ,

birth\_date timestamp NOT NULL ,

passport varchar(10) NOT null,

itn varchar(20) NOT NULL ,

id\_ur\_person integer references Ur\_person(id\_ur\_person)

);

CREATE TABLE FeedBack

(

id\_feed\_back serial primary key,

id\_client integer references client(id\_client),

mark integer NULL ,

descroption varchar(512) NULL

);

CREATE TABLE Status\_contract

(

id\_status\_contract serial primary key,

name varchar(64) not null

);

CREATE TABLE Contract

(

Id\_contract serial primary key,

contract\_number integer NOT NULL ,

start\_date timestamp NOT NULL ,

end\_date timestamp NOT NULL ,

amount float default(0),

id\_status\_contract integer references Status\_contract(id\_status\_contract),

id\_client integer references client(id\_client) ,

id\_worker integer references worker(id\_worker)

);

CREATE TABLE Booking

(

id\_booking serial primary key,

id\_contract integer references contract(id\_contract) ,

id\_status integer references status\_booking(id\_status),

settlement\_time timestamp NOT NULL ,

departure\_time timestamp NOT NULL ,

booking\_time timestamp NOT NULL ,

id\_room integer references room(id\_room)

);

CREATE TABLE Occupied\_client

(

id\_client integer references Client(id\_client),

id\_booking integer references Booking(id\_booking)

);

CREATE TABLE Disscount

(

id\_disscount serial primary key,

disscount\_name varchar(64) NOT NULL ,

diss\_person decimal NULL ,

diss\_legal decimal NULL

);

CREATE TABLE Service

(

id\_service serial primary key,

service\_name varchar(64) NOT NULL ,

service\_cost float NOT NULL

);

create table Service\_for\_room(

id\_room integer references room(id\_room),

id\_service integer references service(id\_service)

);

CREATE TABLE Bilt\_position

(

id\_bilt\_position serial primary key,

id\_contract integer references Contract(Id\_contract),

id\_disscount integer references disscount(id\_disscount) ,

id\_room integer references room(id\_room),

id\_service integer references service(id\_service),

with\_discount float not null

);

**Вывод:** Ознакомились с процессом нормализации схем реляционных баз данных, приобрели практических навыков анализа и построения эффективных схем оперативных баз данных для информационных систем класса OLTP.