**МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ**

###### ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ ВЫСШЕГО ОБРАЗОВАНИЯ

###### КЕМЕРОВСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

**ИНСТИТУТ ЦИФРЫ**

**ОТЧЁТ**

**О ВЫПОЛНЕНИИ СЕМЕСТРОВОЙ РАБОТЫ**

«Информационная система гостиничного комплекса»

Студентки 2 курса, ФИТ-211 группы

**Колесник Полины Олеговны**

Направление 02.03.02 – «Фундаментальная информатика и информационные технологии»

Руководитель:

Кандидат технических наук,

доцент Завозкин С. Ю.

Работа защищена

« »

“ ” 2023 г.

Кемерово 2023 г.

**ОТЧЁТ О ПРОДЕЛАННОЙ РАБОТЕ**

**1.Постановка задачи**

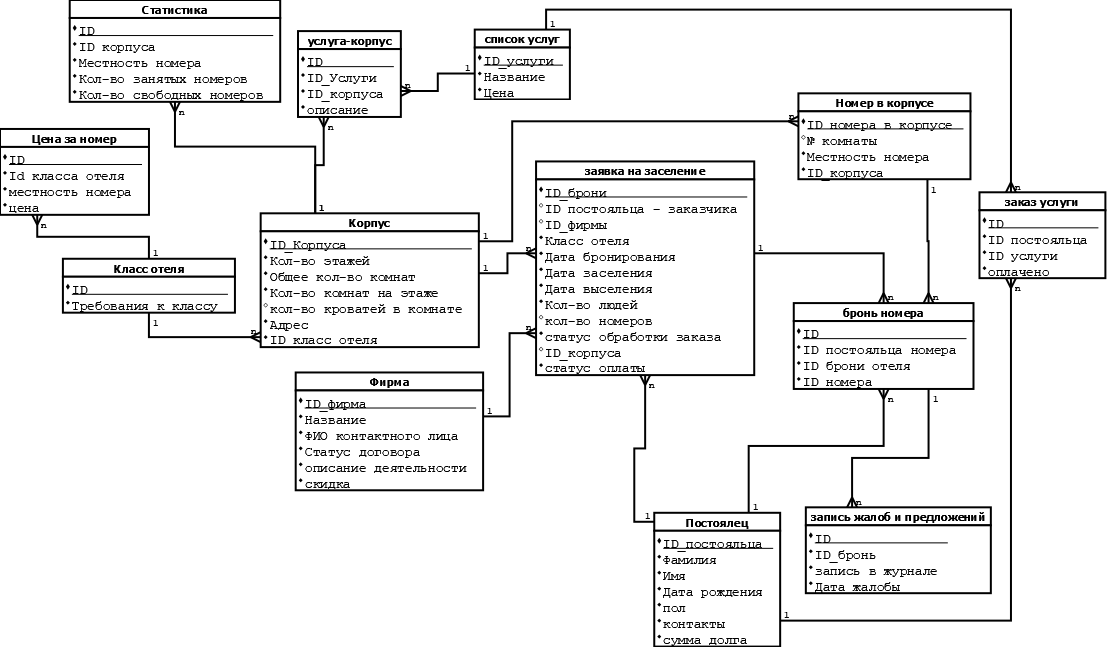
1. Построить ER-диаграмму, для чего:
   1. проанализировав предметную область, при необходимости уточнив и дополнив ее, выявить необходимый набор сущностей;
   2. определить требуемый набор атрибутов для каждой сущности, выделив идентифицирующие атрибуты;
   3. определить связи между объектами, где это необходимо;
   4. формализовать связи между объектами (множественность, условность и т.д.);
2. Получить реляционную схему из ER-модели, для чего:
   1. построить набор необходимых отношений базы данных;
   2. выделить первичные и внешние ключи определенных отношений;
   3. привести полученные отношения к третьей нормальной форме;
   4. определить ограничения целостности для внешних ключей отношений и для отношений в целом;
   5. представить связи между внешними и первичными ключами в виде вертикальной диаграммы.
3. Создать спроектированную базу данных.
4. На языке SQL записать выражения для указанных в варианте задания типов запросов. Проверить работоспособность написанных запросов в интерактивном режиме.
5. Реализовать набор скриптов, позволяющих работать с созданной базой данных. Необходимо реализовать возможность выполнения следующих функций:
   1. заносить информацию в таблицы созданной базы данных;
   2. выполнять необходимые действия по модификации и удалению данных в таблицах созданной базы данных;
   3. поддерживать целостность базы данных, выполняя все действия в рамках транзакций;
   4. выполнять запросы из варианта задания.

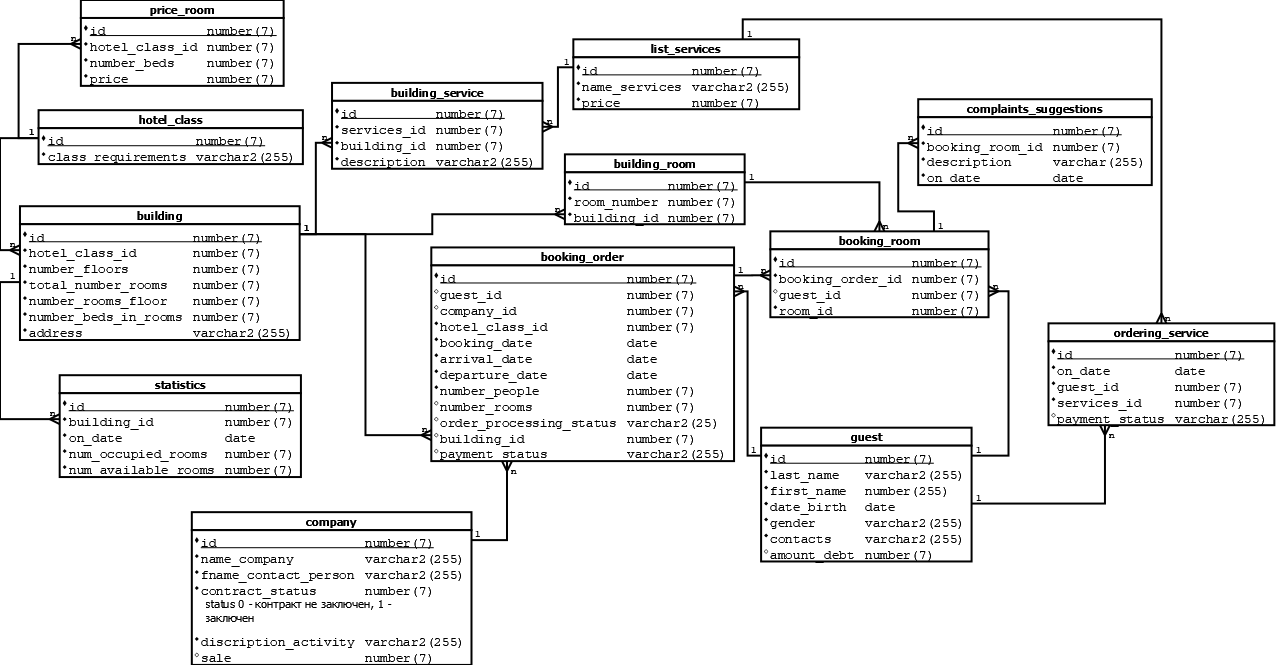
Виды запросов в информационной системе:

1. Получить перечень и общее число фирм, забронировавших места в объеме, не менее указанного, за весь период сотрудничества, либо за некоторый период.
2. Получить перечень и общее число постояльцев, заселявшихся в номера с указанными характеристиками за некоторый период.
3. Получить сведения о количестве свободных номеров с указанными характеристиками.
4. Получить сведения о конкретном свободном номере: в течение какого времени он будет пустовать и о его характеристиках.
5. Получить данные об объеме бронирования номеров данной фирмой за указанный период, и каким номерам отдавались предпочтения.
6. Получить данные о рентабельности номеров с определенными характеристиками: соотношение об объеме продаж номеров к накладным расходам за указанный период.
7. Получить сведения о постояльце из заданного номера: его счет гостинице за дополнительные услуги, поступавшие от него жалобы, виды дополнительных услуг, которыми он пользовался.
8. Получить сведения о фирмах, с которыми заключены договора о брони на указанный период.
9. Получить сведения о наиболее часто посещающих гостиницу постояльцах по всем корпусам гостиниц, по определенному зданию.
10. Получить сведения о конкретном человеке, сколько раз он посещал гостиницу, в каких номерах и в какой период останавливался, какие счета оплачивал.

# **2. Реализация**

Диаграммы:





**Создание таблиц и последовательностей:**

create sequence seq\_company\_id

increment by 1

start with 1

maxvalue 999

nocache

nocycle;

create sequence seq\_guest\_id

increment by 1

start with 1

maxvalue 99999

nocache

nocycle;

create sequence seq\_booking\_order\_id

increment by 1

start with 1

maxvalue 999999

nocache

nocycle;

create sequence seq\_building\_room\_id

increment by 1

start with 1

maxvalue 999999

nocache

nocycle;

create sequence seq\_ordering\_service\_id

increment by 1

start with 1

maxvalue 999999

nocache

nocycle;

create sequence seq\_booking\_room\_id

increment by 1

start with 1

maxvalue 999999

nocache

nocycle;

create sequence seq\_complaints\_suggestions\_id

increment by 1

start with 1

maxvalue 999999

nocache

nocycle;

-- ----------------------------

-- хранение данных

-- класс отеля

create table hotel\_class (

id number(7)

constraint hotel\_class\_id\_pk primary key,

class\_requirements varchar2(255) not null

);

--цена за номер

create table price\_room (

id number(7)

constraint price\_room\_id\_pk primary key,

hotel\_class\_id number(7) not null,

foreign key(hotel\_class\_id) references hotel\_class(id),

number\_beds number(7) not null,

price number(7) not null

);

--корпус

create table building(

id number(7)

constraint building\_id\_pk primary key,

hotel\_class\_id number(7) not null,

foreign key(hotel\_class\_id) references hotel\_class(id),

number\_floors number(7) not null,

total\_number\_rooms number(7) not null,

number\_rooms\_floor number(7) not null,

number\_beds\_in\_rooms number(7) not null,

address\_hotel varchar2(255) not null

);

--номер в корпусе

create table building\_room (

id number(7)

constraint number\_building\_id\_pk primary key,

room\_number number(7) not null,

building\_id number(7) not null,

foreign key(building\_id) references building(id)

);

--список услуг

create table list\_services (

id number(7)

constraint list\_services\_id\_pk primary key,

name\_services varchar2(255) not null,

price number(7) not null

);

--услуга корпус

create table building\_service (

id number(7)

constraint building\_services\_id\_pk primary key,

services\_id number(7) not null,

foreign key(services\_id) references list\_services(id),

building\_id number(7) not null,

foreign key(building\_id) references building(id),

description varchar2(255)

);

--фирма

create table company (

id number(7)

constraint company\_id\_pk primary key,

name\_company varchar2(255) not null,

fname\_contact\_person varchar2(255) not null,

contract\_status number(8) not null,

discription\_activity varchar2(255) not null,

sale number(7) null

);

--постоялец

create table guest(

id number(7)

constraint guest\_id\_pk primary key,

last\_name varchar2(255) not null,

first\_name varchar2(255) not null,

date\_birth date not null,

gender varchar2(255) not null,

contacts varchar2(255) not null,

amount\_debt number(7) null

);

--заявка на заселение

create table booking\_order(

id number(7)

constraint booking\_order\_id\_pk primary key,

guest\_id number(7),

foreign key(guest\_id) references guest(id),

company\_id number(7),

foreign key(company\_id) references company(id),

hotel\_class\_stars number(7) not null,

booking\_date date not null,

arrival\_date date not null,

departure\_date date not null,

number\_people number(7) not null,

number\_rooms number(7),

order\_processing\_status varchar2(255) null,

building\_id number(7) null,

foreign key(building\_id) references building(id),

payment\_status varchar2(255) null

);

--бронь номера

create table booking\_room (

id number(7)

constraint booking\_room\_id\_pk primary key,

booking\_order\_id number(7) not null,

foreign key(booking\_order\_id) references booking\_order(id),

guest\_id number(7) not null,

foreign key(guest\_id) references guest(id),

room\_id number(7) not null,

foreign key(room\_id) references building\_room(id)

);

--запись жалоб и предложений

create table complaints\_suggestions(

id number(7)

constraint complaints\_suggestions\_id\_pk primary key,

booking\_room\_id number(7) not null,

foreign key(booking\_room\_id) references booking\_room(id),

description varchar2(255) not null,

on\_date date not null

);

--заказ услуги

create table ordering\_service (

id number(7)

constraint ordering\_service\_id\_pk primary key,

on\_date date not null,

guest\_id number(7) not null,

foreign key(guest\_id) references guest(id),

services\_id number(7) not null,

foreign key(services\_id) references list\_services(id),

payment\_status varchar2(255) null

);

--статистика

create table statistics(

id number(7)

constraint statistics\_id\_pk primary key,

building\_id number(7) not null,

foreign key(building\_id) references building(id),

number\_occupied\_rooms number(7) not null,

number\_available\_rooms number(7) not null

);

-- ---------------------------------

**Заполнение таблиц:**

insert into hotel\_class (id, class\_requirements)

values (1, 'Ванная комната: не менее 2х на этаж; Туалет: 1 на 5 комнат;

Смена постельного белья: 1раз в 5 дней; Смена полотенец: 1раз в 3 дня;

Уборка: ежедненвно');

insert into hotel\_class (id, class\_requirements)

values (2, 'Телефон: в номере; Ванная комната: не менее 2х на этаж; Туалет: 1 на 5 комнат;

Смена постельного белья: 1раз в 3 дня; Смена полотенец: 1раз в 3 дня;

Уборка: ежедненвно');

insert into hotel\_class (id, class\_requirements)

values (3, 'Холодильник: в номере; Телефон: в номере;

Ванная комната: в комнате; Туалет: в номере;

Смена постельного белья: 1раз в 3 дня; Смена полотенец: ежедненвно;

Уборка: ежедненвно');

insert into hotel\_class (id, class\_requirements)

values (4, 'Телефон: в номере;

Ванная комната: в комнате; Туалет: в номере;

Смена постельного белья: ежедненвно; Смена полотенец: ежедненвно;

Уборка: ежедненвно; Фен: в номере; Шампунь и мыло: в номере');

insert into hotel\_class (id, class\_requirements)

values (5, 'Телефон: в номере;

Ванная комната: в комнате; Туалет: в номере;

Смена постельного белья: ежедненвно; Смена полотенец: ежедненвно;

Уборка: ежедненвно; Фен: в номере; Шампунь и мыло: в номере');

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insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (1, 1, 1, 750);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (2, 1, 2, 1050);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (3, 1, 3, 1350);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (4, 2, 1, 1250);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (5, 2, 2, 1550);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (6, 2, 3, 1850);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (7, 3, 1, 1750);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (8, 3, 2, 2050);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (9, 3, 3, 2350);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (10, 4, 1, 2250);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (11, 4, 2, 2550);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (12, 4, 3, 2850);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (13, 5, 1, 2750);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (14, 5, 2, 3050);

insert into price\_room (id, hotel\_class\_id, number\_beds, price)

values (15, 5, 3, 3350);

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insert into building (id, hotel\_class\_id, number\_floors, total\_number\_rooms,

number\_rooms\_floor, number\_beds\_in\_rooms, address\_hotel)

values (1, 2, 3, 9,

3, 1, 'ВанПисовский переулок 1а'); -- на этаж 3 человек

insert into building (id, hotel\_class\_id, number\_floors, total\_number\_rooms,

number\_rooms\_floor, number\_beds\_in\_rooms, address\_hotel)

values (2, 3, 3, 9,

3, 2, 'улица Стального Алхимика 3б'); -- на этаж 6 человек

insert into building (id, hotel\_class\_id, number\_floors, total\_number\_rooms,

number\_rooms\_floor, number\_beds\_in\_rooms, address\_hotel)

values (3, 4, 3, 9,

3, 3, 'улица Великолепного Усуи Такуми'); -- на этаж 9 человек

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--номер в корпусе

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 201, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 202, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 203, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 301, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 302, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 303, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 401, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 402, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 403, 1);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 201, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 202, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 203, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 301, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 302, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 303, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 401, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 402, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 403, 2);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 201, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 202, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 203, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 301, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 302, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 303, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 401, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 402, 3);

insert into building\_room (id, room\_number, building\_id)

values (seq\_building\_room\_id.nextval, 403, 3);

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--список услуг

insert into list\_services (id, name\_services, price)

values (1, 'ежедневная уборка', 0);

insert into list\_services (id, name\_services, price)

values (2, 'прачечная', 200);

insert into list\_services (id, name\_services, price)

values (3, 'химчистка', 300);

insert into list\_services (id, name\_services, price)

values (4, 'бассейн', 700);

insert into list\_services (id, name\_services, price)

values (5, 'сауна', 500);

insert into list\_services (id, name\_services, price)

values (6, 'бильярд', 500);

insert into list\_services (id, name\_services, price)

values (7, 'ресторан', 400);

insert into list\_services (id, name\_services, price)

values (8, 'бар', 450);

-- ----------------------------------------------------------

--услуга корпус

insert into building\_service (id, services\_id, building\_id, description)

values (1, 1, 1, 'Уборка номеров проводится каждый день с 11.00-12.00');

insert into building\_service (id, services\_id, building\_id, description)

values (2, 1, 2, 'Уборка номеров проводится каждый день с 10.00-12.00');

insert into building\_service (id, services\_id, building\_id, description)

values (3, 1, 3, 'Уборка номеров проводится каждый день с 10.00-12.00');

insert into building\_service (id, services\_id, building\_id, description)

values (4, 2, 2, 'Прачечная работает с 9.00-11.00 и с 15.00-16.00. -1 этаж - вход со двора');

insert into building\_service (id, services\_id, building\_id, description)

values (5, 2, 3, 'Прачечная работает с 9.00-11.00 и с 15.00-17.00. -1 этаж');

insert into building\_service (id, services\_id, building\_id, description)

values (6, 3, 2, 'Химчистка работает с 9.00-11.00 и с 15.00-16.00. -1 этаж - вход со двора');

insert into building\_service (id, services\_id, building\_id, description)

values (7, 3, 3, 'Химчистка работает с 9.00-11.00 и с 15.00-17.00. -1 этаж');

insert into building\_service (id, services\_id, building\_id, description)

values (8, 4, 3, 'Бассейн работает с 9.00-11.00. Расположен на крыше корпуса');

insert into building\_service (id, services\_id, building\_id, description)

values (9, 5, 3, 'Сауна работает 16.00-23.00. Расположена на крыше корпуса');

insert into building\_service (id, services\_id, building\_id, description)

values (10, 6, 3, 'Бильярд работает с 9.00-00.00 -1 этаж ');

insert into building\_service (id, services\_id, building\_id, description)

values (11, 7, 2, 'Ресторан работает с 10.00-15.00 и с 16.00-20.00');

insert into building\_service (id, services\_id, building\_id, description)

values (12, 7, 3, 'Ресторан работает с 10.00-15.00, и с 16.00-20.00');

insert into building\_service (id, services\_id, building\_id, description)

values (13, 8, 1, 'Бар работает с 18.00-20.00');

insert into building\_service (id, services\_id, building\_id, description)

values (14, 8, 2, 'Бар работает с 18.00-20.00');

insert into building\_service (id, services\_id, building\_id, description)

values (15, 8, 3, 'Бар работает с 18.00-20.00');

-- --------------------------------------------

--фирма

insert into company (id, name\_company, fname\_contact\_person, contract\_status, discription\_activity, sale)

values (seq\_company\_id.nextval, 'Чебурашка', 'Крокодил Геннадий', 1, 'Проводят международные симпозиумы', 10);

insert into company (id, name\_company, fname\_contact\_person, contract\_status, discription\_activity, sale)

values (seq\_company\_id.nextval, 'Крыска-Лариска', 'Шапокляк', 0, 'Проведение карнавалов', 2);

insert into company (id, name\_company, fname\_contact\_person, contract\_status, discription\_activity, sale)

values (seq\_company\_id.nextval, 'Знайка', 'Незнайка', 1, 'Туристическая фирма', 5);

-- --------------------------------------------

-- постоялец

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Череватый', 'Владислав',to\_date('28-07-1996','dd-mm-yyyy') ,'М', '89546742345');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Шепс', 'Олег',to\_date('29-04-1998', 'dd-mm-yyyy') ,'М', '89164130202');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Джебисашвили', 'Лина',to\_date('14-08-1985', 'dd-mm-yyyy') ,'Ж', '84953241897');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Шепс', 'Александр',to\_date('26-11-1986', 'dd-mm-yyyy') ,'М', '89546026745');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Шевченко', 'Надежда',to\_date('25-02-1964', 'dd-mm-yyyy'),'Ж', '89832201890');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Райдос', 'Виктория',to\_date('27-12-1976', 'dd-mm-yyyy') ,'Ж', '84956669860');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Романова', 'Марьяна',to\_date('31-08-1979', 'dd-mm-yyyy') ,'Ж', '895467426709');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Гецати', 'Константин',to\_date('10-07-1987', 'dd-mm-yyyy') ,'М', '84957766610');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Матвеев', 'Дмитрий',to\_date('15-07-1997', 'dd-mm-yyyy'),'М', '89546746745');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Башаров', 'Марат',to\_date('22-07-1974', 'dd-mm-yyyy') ,'М', '89657843254');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Ларионов', 'Илья',to\_date('28-10-1983', 'dd-mm-yyyy') ,'М', '84956784321');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Воротникова', 'Наталья', to\_date('10-04-1976', 'dd-mm-yyyy') ,'Ж', '84622636095');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Хегай', 'Лилия',to\_date('04-07-1965', 'dd-mm-yyyy') ,'Ж', '85222043399');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Гиберт', 'Виталий',to\_date('21-03-1988', 'dd-mm-yyyy') ,'М', '83513477192');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Керро', 'Мэрилин',to\_date('18-09-1988', 'dd-mm-yyyy') ,'Ж', '83697350981');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Кузнецова', 'Николь',to\_date('15-09-1988', 'dd-mm-yyyy') ,'Ж', '84084684617');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Норузи', 'Мохсен',to\_date('31-01-1960', 'dd-mm-yyyy') ,'М', '81259079106');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Ванг', 'Джулия',to\_date('19-10-1982', 'dd-mm-yyyy') ,'Ж', '84025378515');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Голунова', 'Елена',to\_date('08-04-1968', 'dd-mm-yyyy') ,'Ж', '8095819428');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Сотникова', 'Вера',to\_date('19-07-1960', 'dd-mm-yyyy') ,'Ж', '8253204211');

insert into guest (id, last\_name, first\_name,date\_birth, gender, contacts)

values (seq\_guest\_id.nextval, 'Пахомов', 'Сергей',to\_date('04-11-1966', 'dd-mm-yyyy') ,'М', '8343965091');

update guest

set amount\_debt = 0

where amount\_debt is null;

-- -----------------------------------------------------

--заявка на заселение

insert into booking\_order(id, company\_id, hotel\_class\_stars, booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms,

order\_processing\_status, building\_id)

values (seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'знайка'), 3,

to\_date('31-05-2023', 'dd-mm-yyyy'), to\_date('27-06-2023', 'dd-mm-yyyy'),

to\_date('30-06-2023', 'dd-mm-yyyy'), 6, 3, 'принят', 2);

insert into booking\_order(id, company\_id, hotel\_class\_stars, booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms,

order\_processing\_status, building\_id)

values (seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'знайка'), 2,

to\_date('10-06-2023', 'dd-mm-yyyy'), to\_date('16-06-2023', 'dd-mm-yyyy'),

to\_date('03-07-2023', 'dd-mm-yyyy'), 4, 4, 'принят', 1);

insert into booking\_order(id, company\_id, hotel\_class\_stars, booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms,

order\_processing\_status, building\_id)

values (seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'чебурашка'), 2,

to\_date('10-06-2023', 'dd-mm-yyyy'), to\_date('16-06-2023', 'dd-mm-yyyy'),

to\_date('03-07-2023', 'dd-mm-yyyy'), 5, 5, 'принят', 1);

insert into booking\_order(id, company\_id, hotel\_class\_stars, booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms,

order\_processing\_status, building\_id)

values (seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'чебурашка'), 4,

to\_date('31-05-2023', 'dd-mm-yyyy'), to\_date('25-06-2023', 'dd-mm-yyyy'),

to\_date('27-06-2023', 'dd-mm-yyyy'), 5, 2, 'принят', 3);

insert into booking\_order(id, guest\_id, hotel\_class\_stars, booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms)

values (seq\_booking\_order\_id.nextval, (select id from guest where lower(last\_name) like 'башаров'), 3,

to\_date('27-05-2023', 'dd-mm-yyyy'), to\_date('23-06-2023', 'dd-mm-yyyy'),

to\_date('02-07-2023', 'dd-mm-yyyy'), 1, 1);

select \*

from booking\_order;

-- ----------------------------

-- min не обработанный

create or replace view current\_b\_ord\_id (id)

as select MIN(id)

from booking\_order

where order\_processing\_status is null;

select \* from current\_b\_ord\_id;

-- отборка корпусов по звёздности

--select \*

--from booking\_order bo join current\_b\_ord\_id cbo on bo.id = cbo.id

--join building b on bo.hotel\_class\_stars = b.hotel\_class\_id;

-- и по минимальной местностности комнат ceil(number\_people / number\_rooms) для расселения людей

create or replace view processing\_filter\_limits

as select bo.id ord\_id, bo.guest\_id, bo.company\_id,

b.id proposed\_building\_id, b.hotel\_class\_id, bo.arrival\_date, bo.departure\_date,

b.total\_number\_rooms, b.number\_beds\_in\_rooms,

bo.number\_people, bo.number\_rooms

from booking\_order bo join current\_b\_ord\_id cbo on bo.id = cbo.id

join building b on bo.hotel\_class\_stars = b.hotel\_class\_id

and b.number\_beds\_in\_rooms >= ceil(bo.number\_rooms/bo.number\_people);

select \*

from processing\_filter\_limits;

-- кол-во свободных номеров на выбранные даты

-- ищу номера которые заняты на даты заезда и отнимаю от общего кол-ва номеров в корпусе

create or replace view free\_rooms\_order\_dates

as select b.id building\_id, b.hotel\_class\_id, b.total\_number\_rooms, b.number\_beds\_in\_rooms,

nvl(b\_num\_booked\_rooms.num\_booked\_rooms, 0) num\_booked\_rooms,

b.total\_number\_rooms - nvl(b\_num\_booked\_rooms.num\_booked\_rooms, 0) num\_free\_rooms

from building b left join (

--подсчёт кол-ва комнат,которые заняты на эти числа для каждого существующего корпуса

select bpo.building\_id, nvl(sum(bpo.number\_rooms), 0) num\_booked\_rooms,

bo.arrival\_date, bo.departure\_date

from booking\_order bpo cross join booking\_order bo

join current\_b\_ord\_id cbo on bo.id = cbo.id

where lower(bpo.order\_processing\_status) like 'принят'

and not (

bo.arrival\_date >= bpo.departure\_date -- дата приезда и отъезда может совпадать

or bo.departure\_date <= bpo.arrival\_date

)

group by bpo.building\_id, bo.arrival\_date, bo.departure\_date

) b\_num\_booked\_rooms on b\_num\_booked\_rooms.building\_id = b.id

order by building\_id;

select \*

from free\_rooms\_order\_dates;

create or replace view building\_view\_for\_id

as select b\_ord\_limits.ord\_id, b\_ord\_limits.guest\_id, b\_ord\_limits.company\_id,

b\_ord\_limits.proposed\_building\_id, b\_ord\_limits.hotel\_class\_id, b\_ord\_limits.arrival\_date, b\_ord\_limits.departure\_date,

b\_ord\_limits.total\_number\_rooms, b\_ord\_limits.number\_beds\_in\_rooms,

b\_ord\_limits.number\_people, b\_ord\_limits.number\_rooms,

b\_ord\_limits.total\_number\_rooms - nvl(b\_num\_booked\_rooms.num\_booked\_rooms, 0) num\_free\_rooms

from processing\_filter\_limits b\_ord\_limits join free\_rooms\_order\_dates b\_num\_booked\_rooms

on b\_num\_booked\_rooms.building\_id = b\_ord\_limits.proposed\_building\_id

where b\_ord\_limits.total\_number\_rooms - nvl(b\_num\_booked\_rooms.num\_booked\_rooms, 0) >= b\_ord\_limits.number\_rooms

order by b\_ord\_limits.number\_beds\_in\_rooms ASC ;

select \*

from building\_view\_for\_id;

select bo.id, case

when bopv.proposed\_building\_id is not Null and

(bo.guest\_id in (select id from guest) or bo.company\_id in

(select id

from company

where contract\_status = 1))

then 'принят'

else 'отклонен'

end status,

case

when bopv.proposed\_building\_id is not null and

(bo.guest\_id in (select id from guest) or bo.company\_id in

(select id

from company

where contract\_status = 1))

then bopv.proposed\_building\_id

else null

end proposed\_building\_id

from booking\_order bo

left join building\_view\_for\_id bopv on bo.id = bopv.ord\_id

join current\_b\_ord\_id cbo on bo.id = cbo.id;

update booking\_order bo

set bo.order\_processing\_status = case when

(select proposed\_building\_id from building\_view\_for\_id) is not null and

(bo.guest\_id in (select id from guest) OR bo.company\_id in (select id from company where contract\_status = 1))

then 'принят'

else 'отклонен'

end,

bo.building\_id = case when

(select proposed\_building\_id from building\_view\_for\_id) is not null and

(bo.guest\_id in (select id from guest) OR bo.company\_id in (select id from company where contract\_status = 1))

then (select proposed\_building\_id from building\_view\_for\_id)

else null

end

where bo.id = (select \* from current\_b\_ord\_id);

select \*

from booking\_order;

insert into booking\_order (

id, company\_id, hotel\_class\_stars,

booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms

) values (

seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'незнайка'), 2,

to\_date('29-05-2023', 'dd-mm-yyyy'), to\_date('19-06-2023', 'dd-mm-yyyy'),

to\_date('25-06-2023', 'dd-mm-yyyy'), 3, 3

);

insert into booking\_order (

id, company\_id, hotel\_class\_stars,

booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms

) values(

seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'незнайка'), 4,

to\_date('28-05-2023', 'dd-mm-yyyy'), to\_date('23-06-2023', 'dd-mm-yyyy'),

to\_date('29-06-2023', 'dd-mm-yyyy'), 8, 8

);

insert into booking\_order (

id, company\_id, hotel\_class\_stars,

booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms

) values(

seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'незнайка'), 2,

to\_date('29-05-2023', 'dd-mm-yyyy'), to\_date('19-06-2023', 'dd-mm-yyyy'),

to\_date('25-06-2023', 'dd-mm-yyyy'), 6, 2

);

insert into booking\_order (

id, company\_id, hotel\_class\_stars,

booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms

) values(

seq\_booking\_order\_id.nextval, (select id from company where lower(name\_company) like 'крыска-лариска'), 4,

to\_date('31-05-2023', 'dd-mm-yyyy'), to\_date('07-06-2023', 'dd-mm-yyyy'),

to\_date('10-06-2023', 'dd-mm-yyyy'), 5, 2

);

insert into booking\_order (

id, company\_id, hotel\_class\_stars,

booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms

) values(

seq\_booking\_order\_id.nextval, null, 4,

to\_date('31-05-2023', 'dd-mm-yyyy'), to\_date('07-06-2023', 'dd-mm-yyyy'),

to\_date('10-06-2023', 'dd-mm-yyyy'), 5, 2

);

insert into booking\_order (

id, guest\_id, hotel\_class\_stars,

booking\_date, arrival\_date,

departure\_date, number\_people, number\_rooms

) values (

seq\_booking\_order\_id.nextval, (select id from guest where lower(last\_name) like 'пахомов') , 2,

to\_date('25-05-2023', 'dd-mm-yyyy'), to\_date('05-06-2023', 'dd-mm-yyyy'),

to\_date('16-06-2023', 'dd-mm-yyyy'), 1, 1);

update booking\_order

set payment\_status = 'оплачен'

where id = 5;

update booking\_order

set payment\_status = 'оплачен'

where id = 2 or id = 3;

select \*

from booking\_order;

--обновление статуса оплаты для всех заказов, где разница между днями меньше либо равна 7

update booking\_order

set payment\_status = 'оплачен'

where ((trunc(arrival\_date) - trunc(sysdate) between 0 and 7)

or (trunc(arrival\_date) - trunc(booking\_date) between 0 and 7 ))

and order\_processing\_status like 'принят';

select \*

from booking\_order;

-- ------------------------------------------------------------------------

--бронь номера

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values (seq\_booking\_room\_id.nextval, 2, (select id from guest where lower(last\_name) like 'череватый'

and lower(first\_name) like 'владислав'), 1);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values (seq\_booking\_room\_id.nextval, 2, (select id from guest where lower(last\_name) like 'джебисашвили'

and lower(first\_name) like 'лина'), 2);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values (seq\_booking\_room\_id.nextval, 2, (select id from guest where lower(last\_name) like 'романова'

and lower(first\_name) like 'марьяна'), 3);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values (seq\_booking\_room\_id.nextval, 2, (select id from guest where lower(last\_name) like 'гецати'

and lower(first\_name) like 'константин'), 4);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values(seq\_booking\_room\_id.nextval, 3, (select id from guest where lower(last\_name) like 'шепс'

and lower(first\_name) like 'олег'), 5);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values(seq\_booking\_room\_id.nextval, 3, (select id from guest where lower(last\_name) like 'шепс'

and lower(first\_name) like 'александр'), 6);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values (seq\_booking\_room\_id.nextval, 3, (select id from guest where lower(last\_name) like 'райдос'

and lower(first\_name) like 'виктория'), 7);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values (seq\_booking\_room\_id.nextval, 3, (select id from guest where lower(last\_name) like 'шевченко'

and lower(first\_name) like 'надежда'), 8);

insert into booking\_room (id, booking\_order\_id, guest\_id, room\_id)

values (seq\_booking\_room\_id.nextval, 3, (select id from guest where lower(last\_name) like 'матвеев'

and lower(first\_name) like 'дмитрий'), 9);

-- -----------------------------

--запись жалоб и предложений

insert into complaints\_suggestions (id, booking\_room\_id, description, on\_date)

values (seq\_complaints\_suggestions\_id.nextval, 1, 'В номере не было подачи холодной воды', to\_date('31-05-2023', 'dd-mm-yyyy'));

-- ----------------------------------------

**Удаление таблиц:**

drop table statistics;

drop table ordering\_service;

drop table complaints\_suggestions;

drop table booking\_room;

drop table booking\_order;

drop table guest;

drop table company;

drop table building\_service;

drop table list\_services;

drop table building\_room;

drop table building;

drop table price\_room;

drop table hotel\_class;

drop sequence seq\_company\_id;

drop sequence seq\_guest\_id;

drop sequence seq\_booking\_order\_id;

drop sequence seq\_building\_room\_id;

drop sequence seq\_ordering\_service\_id;

drop sequence seq\_booking\_room\_id;

drop sequence seq\_complaints\_suggestions\_id;

drop view current\_b\_ord\_id;

drop view processing\_filter\_limits;

drop view free\_rooms\_order\_dates;

drop view building\_view\_for\_id;

**Запросы**

/\*1) Получить перечень и общее число фирм, забронировавших места в объеме, не менее указанного,

за весь период сотрудничества, либо за некоторый период\*/

-- Вpzkf период с 01-06 по 15-06-2023

select bo.id,c.name\_company, sum(bo.number\_rooms)

from booking\_order bo join company c on bo.company\_id = c.id

where bo.booking\_date between to\_date('01-06-2023', 'dd-mm-yyyy')

and to\_date('15-06-2023', 'dd-mm-yyyy')

and bo.company\_id is not null

group by bo.id,c.name\_company

having sum(bo.number\_rooms) > 4;

--2.Получить перечень и общее число постояльцев,

-- заселявшихся в номера с указанными характеристиками за некоторый период.

select bo.company\_id, bo.building\_id,bo.hotel\_class\_stars, sum(bo.number\_people)

from booking\_order bo

where bo.arrival\_date >= to\_date('01-06-2023', 'dd-mm-yyyy')

and bo.departure\_date <= to\_date('30-06-2023', 'dd-mm-yyyy')

and bo.order\_processing\_status like 'принят'

group by bo.company\_id, bo.building\_id, bo.hotel\_class\_stars;

-- 8. Получить сведения о фирмах, с которыми заключены договора о брони

-- на указанный период

select c.id, c.name\_company, c.fname\_contact\_person, c.contract\_status, c.discription\_activity, c.sale

from company c join booking\_order bo

on c.id = bo.company\_id

where bo.arrival\_date >= to\_date('01-06-2023', 'dd-mm-yyyy')

and bo.departure\_date <= to\_date('30-06-2023', 'dd-mm-yyyy')

and bo.order\_processing\_status like 'принят';