Национальный исследовательский университет ИТМО

Лабораторная работа №1
«Создание таблиц базы данных POSTGRESQL. Заполнение таблиц рабочими данными»

По дисциплине
«Проектирование и реализация баз данных»

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Цель работы: овладеть практическими навыками создания таблиц базы данных PostgreSQL 1X, 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. Установить ограничения на данные: Primary Key, Unique, Check, Foreign Key.
5. Заполнить таблицы БД рабочими данными.
6. Создать резервную копию БД.

   Указание:

   Создать две резервные копии:

   - с расширением CUSTOM для восстановления БД;

   - с расширением PLAIN для листинга (в отчете);

   - при создании резервных копий БД настроить параметры Dump options для Type of objects и Queries.
7. Восстановить БД.

РЕАЛИЗАЦИЯ

БД “Оптовая база”

1. Создание базы данных

   С помощью *pgadmin 4* создадим базу данных, указав название – *wholeseale_warehouse* и *postgres* в качестве владельца (рисунок 1).

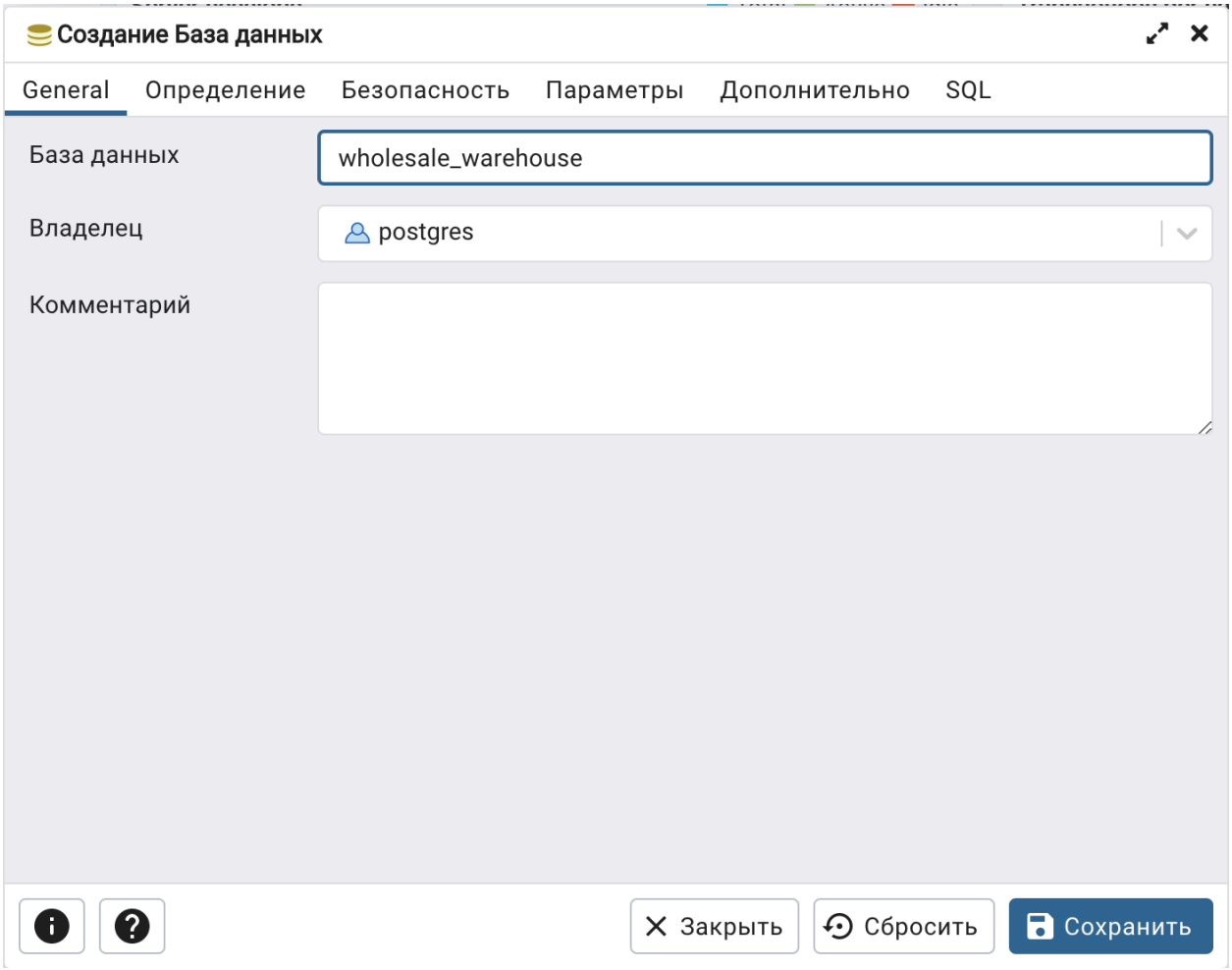

Рисунок 1 - создание базы данных

2. Создание схемы

   Создадим схему используя те же параметры, что и для создания базы данных (рисунок 2).

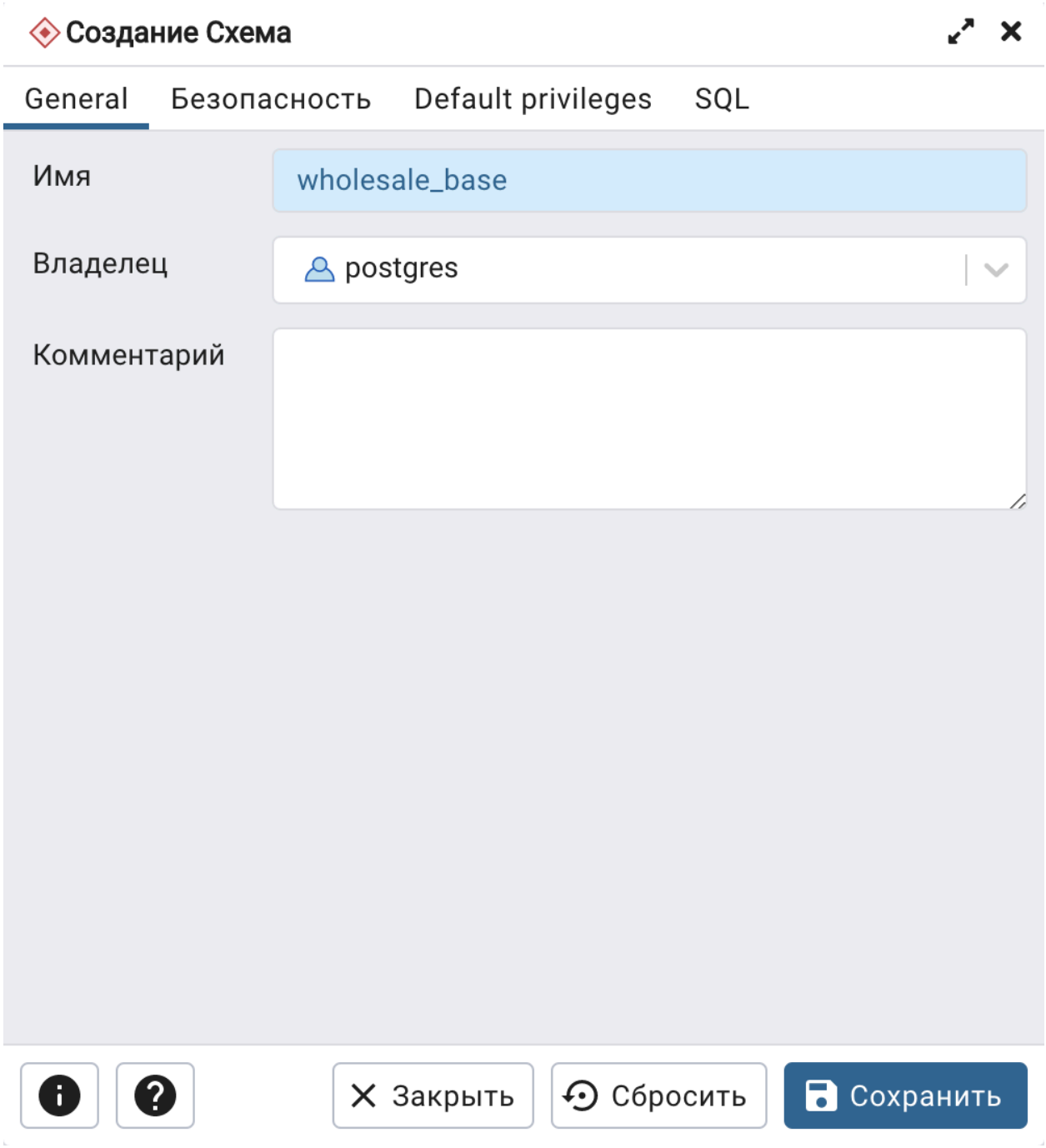

Рисунок 2 - создание схемы

3. Создание таблиц

   Внутри созданной схемы создадим таблицы в соответствии с атрибутами, определенными в лабораторной работе №2 прошлого семестра (см рисунок 3).

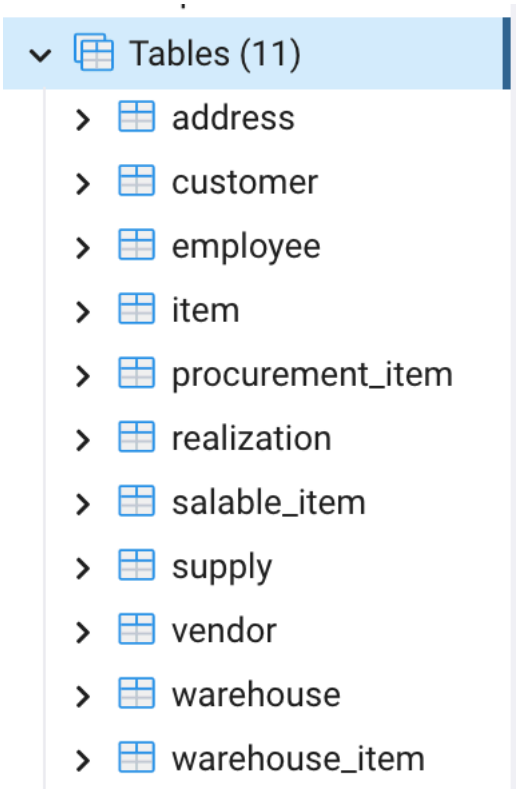

Рисунок 3 - таблицы

4. Для валидации данных создадим проверки (Checks), так же с помощью инструмента Constraint зададим внешние ключи и установим их уникальность при помощи Unique.
5. Используя Query Editor как на рисунке 4, заполним БД конкретными данными.

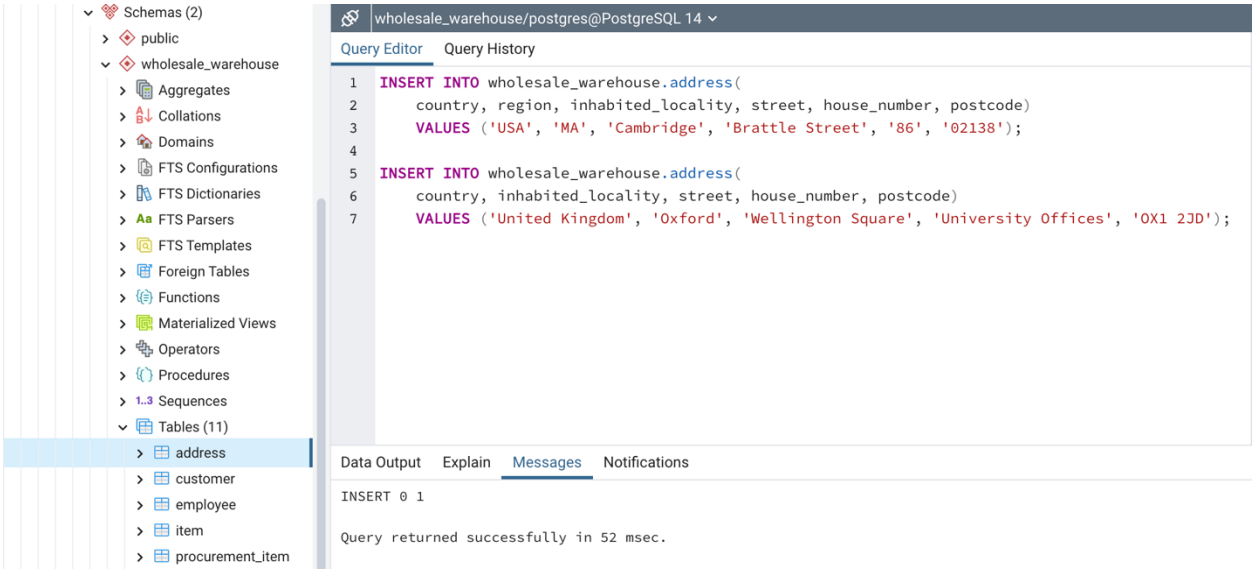

Рисунок 4 - заполнение данными

6. Создадим резервные копии базы данных при помощи инструмента Backup:
   - С расширением Custom, чтобы создать специальный файл архива, который можно использовать с pg_restore для создания копии базы данных

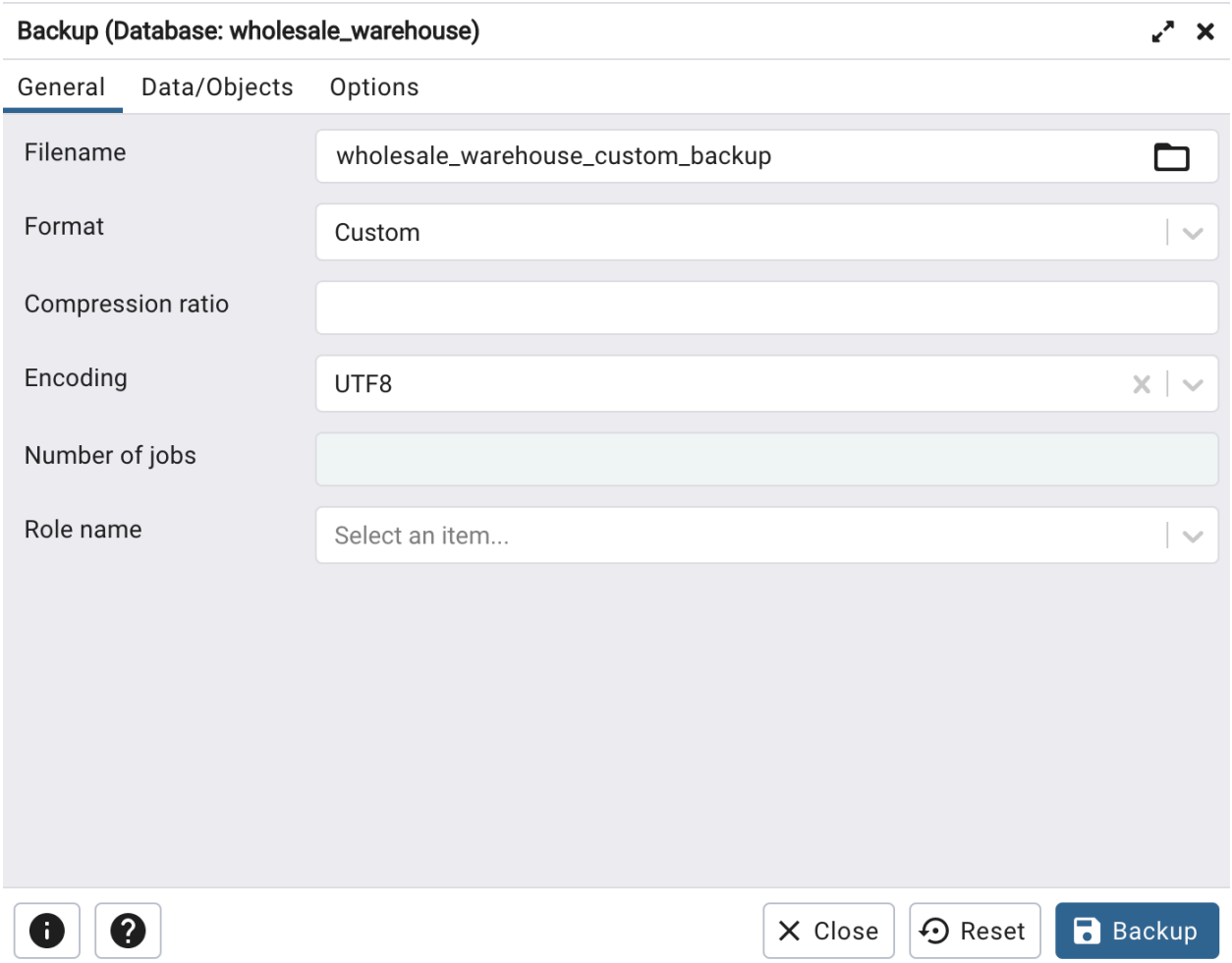

Рисунок 5 - создание Custom копии БД

   - С расширением Plain, чтобы создать текстовый файл сценария (рисунок 6). Настроим параметры Dump Options как показано на рисунке 7, чтобы включить необходимые команды.

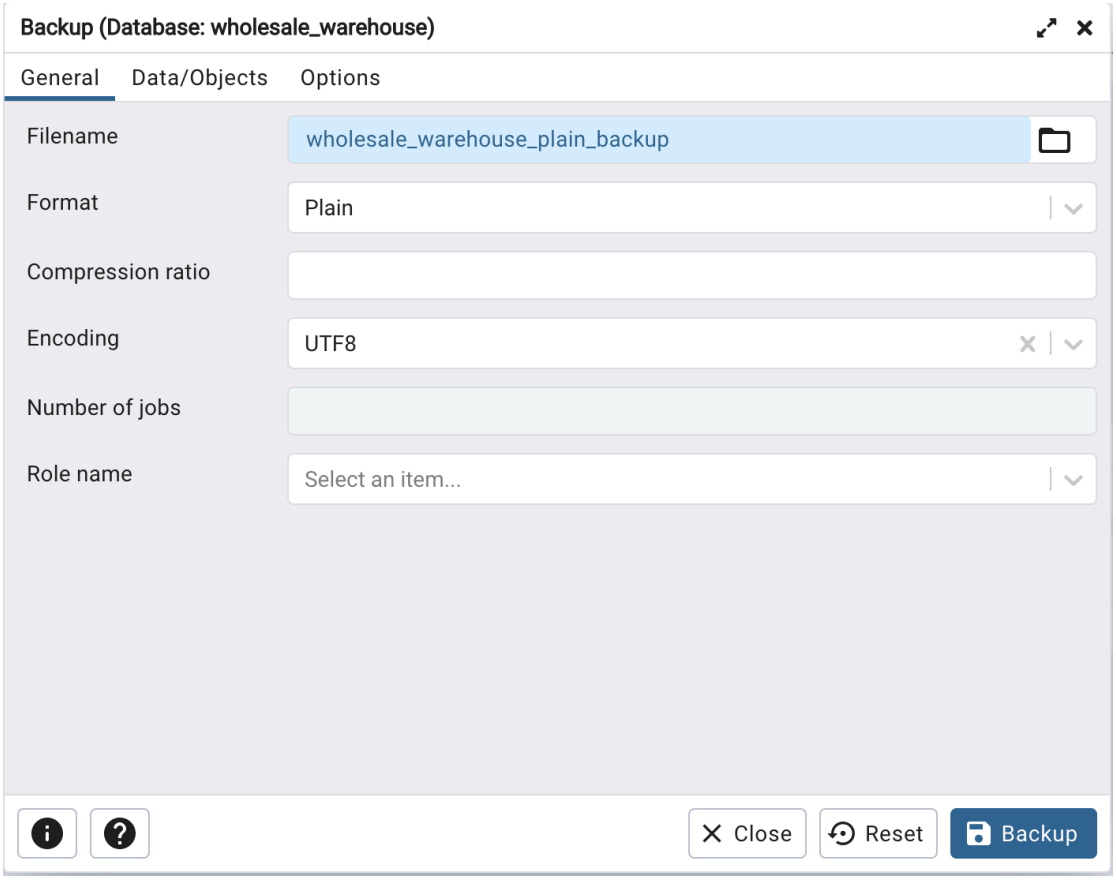

Рисунок 6 - создание Plain копии БД

Рисунок 7 - Dump Options

ЛЯЛЛЯ

РЕЗУЛЬТАТЫ

Схема логической модели Базы Данных

Рисунок 8 - схема логической модели данных

Dump, содержащий скрипты работы с БД

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

-- Dumped from database version 14.2
-- Dumped by pg_dump version 14.2

-- Started on 2022-03-18 16:59:07 MSK
```

1. **Создание базы данных**

```
CREATE DATABASE wholesale_warehouse WITH TEMPLATE = template0
ENCODING = 'UTF8' LOCALE = 'C';


ALTER DATABASE wholesale_warehouse OWNER TO postgres;

--
-- TOC entry 6 (class 2615 OID 16395)
-- Name: wholesale_warehouse; Type: SCHEMA; Schema: -; Owner: postgres
--
```

2. **Создание схемы**

```
CREATE SCHEMA wholesale_warehouse;


ALTER SCHEMA wholesale_warehouse OWNER TO postgres;

SET default_tablespace = '';

SET default_table_access_method = heap;
```

3. **Создание таблиц**

```
CREATE TABLE wholesale_warehouse.address (
    address_id integer NOT NULL,
    country character(30) NOT NULL,
    region character(50),
    inhabited_locality character(30) NOT NULL,
    street character(30),
    house_number character(30) NOT NULL,
    apartment_number integer,
```

```
    postcode character(10) NOT NULL
);


ALTER TABLE wholesale_warehouse.address OWNER TO postgres;

--
-- TOC entry 212 (class 1259 OID 16402)
-- Name: address_address_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.address ALTER COLUMN address_id
ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.address_address_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);



--
-- TOC entry 223 (class 1259 OID 16474)
-- Name: customer; Type: TABLE; Schema: wholesale_warehouse; Owner:
postgres
--

CREATE TABLE wholesale_warehouse.customer (
    customer_company_id integer NOT NULL,
    customer_address_id integer NOT NULL,
    customer_company_name character(30) NOT NULL
);


ALTER TABLE wholesale_warehouse.customer OWNER TO postgres;

--
-- TOC entry 222 (class 1259 OID 16473)
-- Name: customer_customer_company_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--
```

```
ALTER TABLE wholesale_warehouse.customer ALTER COLUMN
customer_company_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME
wholesale_warehouse.customer_customer_company_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);


--
-- TOC entry 215 (class 1259 OID 16415)
-- Name: employee; Type: TABLE; Schema: wholesale_warehouse; Owner:
postgres
--

CREATE TABLE wholesale_warehouse.employee (
    employee_id integer NOT NULL,
    employee_passport_data bigint NOT NULL,
    employee_post character(50) NOT NULL,
    employee_full_name character(100) NOT NULL
);


ALTER TABLE wholesale_warehouse.employee OWNER TO postgres;

--
-- TOC entry 214 (class 1259 OID 16414)
-- Name: employee_employee_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.employee ALTER COLUMN employee_id
ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.employee_employee_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);
```

```
--
-- TOC entry 219 (class 1259 OID 16438)
-- Name: item; Type: TABLE; Schema: wholesale_warehouse; Owner: postgres
--

CREATE TABLE wholesale_warehouse.item (
    item_id integer NOT NULL,
    item_name character(30) NOT NULL,
    item_description text,
    item_measure_unit character(6) NOT NULL
);


ALTER TABLE wholesale_warehouse.item OWNER TO postgres;

--
-- TOC entry 218 (class 1259 OID 16437)
-- Name: item_item_id_seq; Type: SEQUENCE; Schema: wholesale_warehouse;
Owner: postgres
--

ALTER TABLE wholesale_warehouse.item ALTER COLUMN item_id ADD
GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.item_item_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);



--
-- TOC entry 221 (class 1259 OID 16454)
-- Name: procurement_item; Type: TABLE; Schema: wholesale_warehouse;
Owner: postgres
--

CREATE TABLE wholesale_warehouse.procurement_item (
    procurement_item_id integer NOT NULL,
    supply_id integer NOT NULL,
    item_id integer NOT NULL,
    procurement_item_price_rub double precision NOT NULL,
    procurement_items_quantity integer NOT NULL
);
```

```
ALTER TABLE wholesale_warehouse.procurement_item OWNER TO postgres;

--
-- TOC entry 220 (class 1259 OID 16453)
-- Name: procurement_item_procurement_item_id_seq; Type: SEQUENCE;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.procurement_item ALTER COLUMN
procurement_item_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME
wholesale_warehouse.procurement_item_procurement_item_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);



--
-- TOC entry 225 (class 1259 OID 16487)
-- Name: realization; Type: TABLE; Schema: wholesale_warehouse; Owner:
postgres
--

CREATE TABLE wholesale_warehouse.realization (
    realization_id integer NOT NULL,
    customer_company_id integer NOT NULL,
    employee_id integer NOT NULL,
    order_date date NOT NULL,
    export_date date NOT NULL,
    realization_status character(30) NOT NULL,
    realization_payment_state character(12) NOT NULL
);


ALTER TABLE wholesale_warehouse.realization OWNER TO postgres;

--
-- TOC entry 224 (class 1259 OID 16486)
-- Name: realization_realization_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
```

```
--

ALTER TABLE wholesale_warehouse.realization ALTER COLUMN
realization_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.realization_realization_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);


--
-- TOC entry 231 (class 1259 OID 16533)
-- Name: salable_item; Type: TABLE; Schema: wholesale_warehouse; Owner:
postgres
--

CREATE TABLE wholesale_warehouse.salable_item (
    salable_item_id integer NOT NULL,
    item_id integer NOT NULL,
    warehouse_id integer NOT NULL,
    realization_id integer NOT NULL,
    salable_item_price_rub double precision NOT NULL,
    salable_items_quantity integer NOT NULL
);


ALTER TABLE wholesale_warehouse.salable_item OWNER TO postgres;

--
-- TOC entry 230 (class 1259 OID 16532)
-- Name: salable_item_salable_item_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.salable_item ALTER COLUMN
salable_item_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.salable_item_salable_item_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
```

```
);


--
-- TOC entry 217 (class 1259 OID 16422)
-- Name: supply; Type: TABLE; Schema: wholesale_warehouse; Owner: postgres
--

CREATE TABLE wholesale_warehouse.supply (
    supply_id integer NOT NULL,
    employee_id integer NOT NULL,
    vendor_id integer NOT NULL,
    delivery_date date NOT NULL,
    supply_status character(30) NOT NULL,
    supply_payment_state character(12) NOT NULL
);


ALTER TABLE wholesale_warehouse.supply OWNER TO postgres;

--
-- TOC entry 216 (class 1259 OID 16421)
-- Name: supply_supply_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.supply ALTER COLUMN supply_id ADD
GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.supply_supply_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);


--
-- TOC entry 211 (class 1259 OID 16397)
-- Name: vendor; Type: TABLE; Schema: wholesale_warehouse; Owner: postgres
--

CREATE TABLE wholesale_warehouse.vendor (
    vendor_id integer NOT NULL,
    vendor_address_id integer NOT NULL,
```

```
    vendor_account_number bigint NOT NULL,
    vendor_company_name character(30) NOT NULL
);


ALTER TABLE wholesale_warehouse.vendor OWNER TO postgres;

--
-- TOC entry 210 (class 1259 OID 16396)
-- Name: vendor_vendor_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.vendor ALTER COLUMN vendor_id
ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.vendor_vendor_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);



--
-- TOC entry 227 (class 1259 OID 16503)
-- Name: warehouse; Type: TABLE; Schema: wholesale_warehouse; Owner:
postgres
--

CREATE TABLE wholesale_warehouse.warehouse (
    warehouse_id integer NOT NULL,
    warehouse_address_id integer NOT NULL
);


ALTER TABLE wholesale_warehouse.warehouse OWNER TO postgres;

--
-- TOC entry 229 (class 1259 OID 16514)
-- Name: warehouse_item; Type: TABLE; Schema: wholesale_warehouse; Owner:
postgres
--

CREATE TABLE wholesale_warehouse.warehouse_item (
```

```
    warehouse_item_id integer NOT NULL,
    item_id integer NOT NULL,
    warehouse_id integer NOT NULL,
    items_quantity_in_warehouse integer NOT NULL
);


ALTER TABLE wholesale_warehouse.warehouse_item OWNER TO postgres;

--
-- TOC entry 228 (class 1259 OID 16513)
-- Name: warehouse_item_warehouse_item_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.warehouse_item ALTER COLUMN
warehouse_item_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME
wholesale_warehouse.warehouse_item_warehouse_item_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);



--
-- TOC entry 226 (class 1259 OID 16502)
-- Name: warehouse_warehouse_id_seq; Type: SEQUENCE; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.warehouse ALTER COLUMN
warehouse_id ADD GENERATED ALWAYS AS IDENTITY (
    SEQUENCE NAME wholesale_warehouse.warehouse_warehouse_id_seq
    START WITH 1
    INCREMENT BY 1
    NO MINVALUE
    NO MAXVALUE
    CACHE 1
);



--
```

-- TOC entry 3679 (class 0 OID 16403)
-- Dependencies: 213
-- Data for Name: address; Type: TABLE DATA; Schema: wholesale_warehouse; Owner: postgres
--

4. Заполнение таблиц данными

```
INSERT INTO wholesale_warehouse.address (address_id, country, region, inhabited_locality, street, house_number, apartment_number, postcode) OVERRIDING SYSTEM VALUE VALUES (1, 'РФ                  ', NULL, 'Санкт-Петербург       ', 'Биржевая линия       ', '4                   ', NULL, '199034    ');
INSERT INTO wholesale_warehouse.address (address_id, country, region, inhabited_locality, street, house_number, apartment_number, postcode) OVERRIDING SYSTEM VALUE VALUES (2, 'РФ                  ', NULL, 'Санкт-Петербург       ', 'Кронверкский проспект  ', '49                  ', NULL, '197101    ');
INSERT INTO wholesale_warehouse.address (address_id, country, region, inhabited_locality, street, house_number, apartment_number, postcode) OVERRIDING SYSTEM VALUE VALUES (3, 'USA                 ', 'MA                  ', 'Cambridge           ', 'Brattle Street       ', '86                  ', NULL, '02138     ');
INSERT INTO wholesale_warehouse.address (address_id, country, region, inhabited_locality, street, house_number, apartment_number, postcode) OVERRIDING SYSTEM VALUE VALUES (4, 'United Kingdom      ', NULL, 'Oxford                ', 'Wellington Square    ', 'University Offices  ', NULL, 'OX1 2JD   ');
```

```
--
-- TOC entry 3689 (class 0 OID 16474)
-- Dependencies: 223
-- Data for Name: customer; Type: TABLE DATA; Schema: wholesale_warehouse; Owner: postgres
--

INSERT INTO wholesale_warehouse.customer (customer_company_id, customer_address_id, customer_company_name) OVERRIDING SYSTEM VALUE VALUES (1, 3, 'Harvard University      ');
INSERT INTO wholesale_warehouse.customer (customer_company_id, customer_address_id, customer_company_name) OVERRIDING SYSTEM VALUE VALUES (2, 4, 'Oxford University      ');
```

```
--
-- TOC entry 3681 (class 0 OID 16415)
-- Dependencies: 215
-- Data for Name: employee; Type: TABLE DATA; Schema:
wholesale_warehouse; Owner: postgres
--

INSERT INTO wholesale_warehouse.employee (employee_id,
employee_passport_data, employee_post, employee_full_name) OVERRIDING
SYSTEM VALUE VALUES (2, 3015842399, 'manager
', 'Сидоров Алексей Викторович                                    ');
INSERT INTO wholesale_warehouse.employee (employee_id,
employee_passport_data, employee_post, employee_full_name) OVERRIDING
SYSTEM VALUE VALUES (3, 3015842399, 'head of sales department
', 'Дмитриев Дмитрий Олегович                                     ');


--
-- TOC entry 3685 (class 0 OID 16438)
-- Dependencies: 219
-- Data for Name: item; Type: TABLE DATA; Schema: wholesale_warehouse;
Owner: postgres
--

INSERT INTO wholesale_warehouse.item (item_id, item_name, item_description,
item_measure_unit) OVERRIDING SYSTEM VALUE VALUES (1, 'Black gel
pen                ', 'A pen with recyclable dyes invented at ITMO University', 'шт    ');
INSERT INTO wholesale_warehouse.item (item_id, item_name, item_description,
item_measure_unit) OVERRIDING SYSTEM VALUE VALUES (2, 'Blue gel pen
', 'A pen with recyclable dyes invented at ITMO University', 'шт    ');


--
-- TOC entry 3687 (class 0 OID 16454)
-- Dependencies: 221
-- Data for Name: procurement_item; Type: TABLE DATA; Schema:
wholesale_warehouse; Owner: postgres
--

INSERT INTO wholesale_warehouse.procurement_item (procurement_item_id,
supply_id, item_id, procurement_item_price_rub, procurement_items_quantity)
OVERRIDING SYSTEM VALUE VALUES (1, 1, 1, 15.5, 1000000);
INSERT INTO wholesale_warehouse.procurement_item (procurement_item_id,
supply_id, item_id, procurement_item_price_rub, procurement_items_quantity)
OVERRIDING SYSTEM VALUE VALUES (2, 2, 2, 17.5, 500000);
```

```
--
-- TOC entry 3691 (class 0 OID 16487)
-- Dependencies: 225
-- Data for Name: realization; Type: TABLE DATA; Schema:
wholesale_warehouse; Owner: postgres
--

INSERT INTO wholesale_warehouse.realization (realization_id,
customer_company_id, employee_id, order_date, export_date, realization_status,
realization_payment_state) OVERRIDING SYSTEM VALUE VALUES (2, 1, 2,
'2022-04-01', '2022-04-21', 'выполнен с рекламацией        ', 'оплачено    ');
INSERT INTO wholesale_warehouse.realization (realization_id,
customer_company_id, employee_id, order_date, export_date, realization_status,
realization_payment_state) OVERRIDING SYSTEM VALUE VALUES (4, 2, 3,
'2022-04-03', '2022-04-25', 'отменен                    ', 'не оплачено ');



--
-- TOC entry 3697 (class 0 OID 16533)
-- Dependencies: 231
-- Data for Name: salable_item; Type: TABLE DATA; Schema:
wholesale_warehouse; Owner: postgres
--

INSERT INTO wholesale_warehouse.salable_item (salable_item_id, item_id,
warehouse_id, realization_id, salable_item_price_rub, salable_items_quantity)
OVERRIDING SYSTEM VALUE VALUES (3, 1, 1, 2, 20, 100000);
INSERT INTO wholesale_warehouse.salable_item (salable_item_id, item_id,
warehouse_id, realization_id, salable_item_price_rub, salable_items_quantity)
OVERRIDING SYSTEM VALUE VALUES (4, 2, 1, 4, 21, 120000);



--
-- TOC entry 3683 (class 0 OID 16422)
-- Dependencies: 217
-- Data for Name: supply; Type: TABLE DATA; Schema: wholesale_warehouse;
Owner: postgres
--

INSERT INTO wholesale_warehouse.supply (supply_id, employee_id, vendor_id,
delivery_date, supply_status, supply_payment_state) OVERRIDING SYSTEM
VALUE VALUES (1, 2, 1, '2022-03-18', 'выполнен                ', 'предоплата
');
```

```
INSERT INTO wholesale_warehouse.supply (supply_id, employee_id, vendor_id,
delivery_date, supply_status, supply_payment_state) OVERRIDING SYSTEM
VALUE VALUES (2, 3, 2, '2022-03-19', 'в обработке                ', 'не оплачено
');



--
-- TOC entry 3677 (class 0 OID 16397)
-- Dependencies: 211
-- Data for Name: vendor; Type: TABLE DATA; Schema: wholesale_warehouse;
Owner: postgres
--

INSERT INTO wholesale_warehouse.vendor (vendor_id, vendor_address_id,
vendor_account_number, vendor_company_name) OVERRIDING SYSTEM
VALUE VALUES (1, 1, 1234567890, 'НИУ ИТМО на Биржевой         ');
INSERT INTO wholesale_warehouse.vendor (vendor_id, vendor_address_id,
vendor_account_number, vendor_company_name) OVERRIDING SYSTEM
VALUE VALUES (2, 2, 9087654321, 'НИУ ИТМО на Кронверкском     ');



--
-- TOC entry 3693 (class 0 OID 16503)
-- Dependencies: 227
-- Data for Name: warehouse; Type: TABLE DATA; Schema:
wholesale_warehouse; Owner: postgres
--

INSERT INTO wholesale_warehouse.warehouse (warehouse_id,
warehouse_address_id) OVERRIDING SYSTEM VALUE VALUES (1, 1);



--
-- TOC entry 3695 (class 0 OID 16514)
-- Dependencies: 229
-- Data for Name: warehouse_item; Type: TABLE DATA; Schema:
wholesale_warehouse; Owner: postgres
--

INSERT INTO wholesale_warehouse.warehouse_item (warehouse_item_id,
item_id, warehouse_id, items_quantity_in_warehouse) OVERRIDING SYSTEM
VALUE VALUES (1, 1, 1, 2000000);
INSERT INTO wholesale_warehouse.warehouse_item (warehouse_item_id,
item_id, warehouse_id, items_quantity_in_warehouse) OVERRIDING SYSTEM
VALUE VALUES (2, 2, 1, 1500000);
```

5. Добавление Constraints

```
--
-- TOC entry 3481 (class 2606 OID 16567)
-- Name: vendor account_number_check; Type: CHECK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.vendor
    ADD CONSTRAINT account_number_check CHECK
(((vendor_account_number > 9999) AND (vendor_account_number <
'100000000000000000'::bigint))) NOT VALID;



--
-- TOC entry 3715 (class 0 OID 0)
-- Dependencies: 3481
-- Name: CONSTRAINT account_number_check ON vendor; Type: COMMENT;
Schema: wholesale_warehouse; Owner: postgres
--

COMMENT ON CONSTRAINT account_number_check ON
wholesale_warehouse.vendor IS 'account number must be more than 5 but less
than 17 digits';



--
-- TOC entry 3498 (class 2606 OID 16407)
-- Name: address address_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.address
    ADD CONSTRAINT address_pkey PRIMARY KEY (address_id);



--
-- TOC entry 3510 (class 2606 OID 16485)
-- Name: customer customer_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.customer
    ADD CONSTRAINT customer_pkey PRIMARY KEY
(customer_company_id);
```

```
--
-- TOC entry 3489 (class 2606 OID 16582)
-- Name: realization date_check; Type: CHECK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.realization
    ADD CONSTRAINT date_check CHECK ((((export_date - order_date) >= 0)
AND ((export_date - order_date) < 30))) NOT VALID;


--
-- TOC entry 3483 (class 2606 OID 16583)
-- Name: supply delivery_date_check; Type: CHECK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.supply
    ADD CONSTRAINT delivery_date_check CHECK (((delivery_date -
CURRENT_DATE) >= 0)) NOT VALID;


--
-- TOC entry 3484 (class 2606 OID 16584)
-- Name: supply delivery_status_check; Type: CHECK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.supply
    ADD CONSTRAINT delivery_status_check CHECK ((supply_status = ANY
(ARRAY['в обработке'::bpchar, 'отменен'::bpchar, 'в работе'::bpchar,
'выполнен'::bpchar, 'выполнен с рекламацией'::bpchar]))) NOT VALID;


--
-- TOC entry 3482 (class 2606 OID 16573)
-- Name: employee employee_passport_data_check; Type: CHECK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.employee
```

```
    ADD CONSTRAINT employee_passport_data_check CHECK
(((employee_passport_data > 999999999) AND (employee_passport_data <
'10000000000'::bigint))) NOT VALID;


--
-- TOC entry 3716 (class 0 OID 0)
-- Dependencies: 3482
-- Name: CONSTRAINT employee_passport_data_check ON employee; Type:
COMMENT; Schema: wholesale_warehouse; Owner: postgres
--

COMMENT ON CONSTRAINT employee_passport_data_check ON
wholesale_warehouse.employee IS 'Passport data must consist of 10 digits';


--
-- TOC entry 3500 (class 2606 OID 16419)
-- Name: employee employee_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.employee
    ADD CONSTRAINT employee_pkey PRIMARY KEY (employee_id);


--
-- TOC entry 3486 (class 2606 OID 16446)
-- Name: item item_measure_unit_check; Type: CHECK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.item
    ADD CONSTRAINT item_measure_unit_check CHECK ((item_measure_unit
= ANY (ARRAY['шт'::bpchar, 'м'::bpchar, 'кв. м'::bpchar, 'куб. м'::bpchar,
'кг'::bpchar, 'г'::bpchar]))) NOT VALID;


--
-- TOC entry 3504 (class 2606 OID 16442)
-- Name: item item_pkey; Type: CONSTRAINT; Schema: wholesale_warehouse;
Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.item
```

```
    ADD CONSTRAINT item_pkey PRIMARY KEY (item_id);


--
-- TOC entry 3492 (class 2606 OID 16531)
-- Name: warehouse_item items_quantity_in_warehouse_check; Type: CHECK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.warehouse_item
    ADD CONSTRAINT items_quantity_in_warehouse_check CHECK
((items_quantity_in_warehouse > 0)) NOT VALID;


--
-- TOC entry 3485 (class 2606 OID 16593)
-- Name: supply payment_state_check; Type: CHECK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.supply
    ADD CONSTRAINT payment_state_check CHECK ((supply_payment_state =
ANY (ARRAY['предоплата'::bpchar, 'оплачено'::bpchar, 'не
оплачено'::bpchar]))) NOT VALID;


--
-- TOC entry 3506 (class 2606 OID 16458)
-- Name: procurement_item procurement_item_pkey; Type: CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.procurement_item
    ADD CONSTRAINT procurement_item_pkey PRIMARY KEY
(procurement_item_id);


--
-- TOC entry 3487 (class 2606 OID 16471)
-- Name: procurement_item procurement_item_price_rub_check; Type: CHECK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.procurement_item
```

```
    ADD CONSTRAINT procurement_item_price_rub_check CHECK
((procurement_item_price_rub > (0)::double precision)) NOT VALID;


--
-- TOC entry 3508 (class 2606 OID 16460)
-- Name: procurement_item procurement_item_unique_fkeys; Type:
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.procurement_item
    ADD CONSTRAINT procurement_item_unique_fkeys UNIQUE (supply_id,
item_id);


--
-- TOC entry 3488 (class 2606 OID 16472)
-- Name: procurement_item procurement_items_quantity_check; Type: CHECK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.procurement_item
    ADD CONSTRAINT procurement_items_quantity_check CHECK
((procurement_items_quantity > 0)) NOT VALID;


--
-- TOC entry 3490 (class 2606 OID 16588)
-- Name: realization realization_payment_state_check; Type: CHECK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.realization
    ADD CONSTRAINT realization_payment_state_check CHECK
((realization_payment_state = ANY (ARRAY['предоплата'::bpchar,
'оплачено'::bpchar, 'не оплачено'::bpchar]))) NOT VALID;


--
-- TOC entry 3512 (class 2606 OID 16491)
-- Name: realization realization_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.realization
```

```
    ADD CONSTRAINT realization_pkey PRIMARY KEY (realization_id);


--
-- TOC entry 3491 (class 2606 OID 16586)
-- Name: realization realization_status_check; Type: CHECK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.realization
    ADD CONSTRAINT realization_status_check CHECK ((realization_status =
ANY (ARRAY['в обработке'::bpchar, 'отменен'::bpchar, 'в работе'::bpchar,
'выполнен'::bpchar, 'выполнен с рекламацией'::bpchar]))) NOT VALID;


--
-- TOC entry 3520 (class 2606 OID 16537)
-- Name: salable_item salable_item_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.salable_item
    ADD CONSTRAINT salable_item_pkey PRIMARY KEY (salable_item_id);


--
-- TOC entry 3493 (class 2606 OID 16556)
-- Name: salable_item salable_item_price_rub_check; Type: CHECK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.salable_item
    ADD CONSTRAINT salable_item_price_rub_check CHECK
((salable_item_price_rub > (0)::double precision)) NOT VALID;


--
-- TOC entry 3522 (class 2606 OID 16539)
-- Name: salable_item salable_item_unique_fkeys; Type: CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.salable_item
    ADD CONSTRAINT salable_item_unique_fkeys UNIQUE (item_id,
warehouse_id, realization_id);
```

```
--
-- TOC entry 3494 (class 2606 OID 16562)
-- Name: salable_item salable_items_quantity_check; Type: CHECK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE wholesale_warehouse.salable_item
    ADD CONSTRAINT salable_items_quantity_check CHECK
((salable_items_quantity > 0)) NOT VALID;


--
-- TOC entry 3502 (class 2606 OID 16426)
-- Name: supply supply_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.supply
    ADD CONSTRAINT supply_pkey PRIMARY KEY (supply_id);


--
-- TOC entry 3496 (class 2606 OID 16401)
-- Name: vendor vendor_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.vendor
    ADD CONSTRAINT vendor_pkey PRIMARY KEY (vendor_id);


--
-- TOC entry 3516 (class 2606 OID 16518)
-- Name: warehouse_item warehouse_item_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.warehouse_item
    ADD CONSTRAINT warehouse_item_pkey PRIMARY KEY
(warehouse_item_id);


--
```

```
-- TOC entry 3518 (class 2606 OID 16520)
-- Name: warehouse_item warehouse_item_unique_fkeys; Type: CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.warehouse_item
    ADD CONSTRAINT warehouse_item_unique_fkeys UNIQUE (item_id,
warehouse_id);


--
-- TOC entry 3514 (class 2606 OID 16507)
-- Name: warehouse warehouse_pkey; Type: CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.warehouse
    ADD CONSTRAINT warehouse_pkey PRIMARY KEY (warehouse_id);


--
-- TOC entry 3528 (class 2606 OID 16479)
-- Name: customer address_id_to_customer_address_id; Type: FK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.customer
    ADD CONSTRAINT address_id_to_customer_address_id FOREIGN KEY
(customer_address_id) REFERENCES wholesale_warehouse.address(address_id)
NOT VALID;


--
-- TOC entry 3523 (class 2606 OID 16408)
-- Name: vendor address_id_to_vendor_address; Type: FK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.vendor
    ADD CONSTRAINT address_id_to_vendor_address FOREIGN KEY
(vendor_address_id) REFERENCES wholesale_warehouse.address(address_id)
NOT VALID;


--
```

```
-- TOC entry 3531 (class 2606 OID 16508)
-- Name: warehouse adress_id_to_warehouse_address; Type: FK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.warehouse
    ADD CONSTRAINT adress_id_to_warehouse_address FOREIGN KEY
(warehouse_address_id) REFERENCES
wholesale_warehouse.address(address_id) NOT VALID;


--
-- TOC entry 3529 (class 2606 OID 16492)
-- Name: realization customer_company_id_to_realization; Type: FK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.realization
    ADD CONSTRAINT customer_company_id_to_realization FOREIGN KEY
(customer_company_id) REFERENCES
wholesale_warehouse.customer(customer_company_id) NOT VALID;


--
-- TOC entry 3530 (class 2606 OID 16497)
-- Name: realization employee_id_to_realization; Type: FK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.realization
    ADD CONSTRAINT employee_id_to_realization FOREIGN KEY
(employee_id) REFERENCES wholesale_warehouse.employee(employee_id)
NOT VALID;


--
-- TOC entry 3524 (class 2606 OID 16427)
-- Name: supply employee_id_to_supply; Type: FK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.supply
    ADD CONSTRAINT employee_id_to_supply FOREIGN KEY (employee_id)
REFERENCES wholesale_warehouse.employee(employee_id) NOT VALID;
```

```
--
-- TOC entry 3526 (class 2606 OID 16466)
-- Name: procurement_item item_id_to_procurement_item; Type: FK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.procurement_item
    ADD CONSTRAINT item_id_to_procurement_item FOREIGN KEY (item_id)
REFERENCES wholesale_warehouse.item(item_id) NOT VALID;


--
-- TOC entry 3534 (class 2606 OID 16540)
-- Name: salable_item item_id_to_salable_item; Type: FK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.salable_item
    ADD CONSTRAINT item_id_to_salable_item FOREIGN KEY (item_id)
REFERENCES wholesale_warehouse.item(item_id) NOT VALID;


--
-- TOC entry 3532 (class 2606 OID 16521)
-- Name: warehouse_item item_id_to_warehouse_item; Type: FK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.warehouse_item
    ADD CONSTRAINT item_id_to_warehouse_item FOREIGN KEY (item_id)
REFERENCES wholesale_warehouse.item(item_id) NOT VALID;


--
-- TOC entry 3535 (class 2606 OID 16550)
-- Name: salable_item realization_id_to_salable_item; Type: FK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.salable_item
    ADD CONSTRAINT realization_id_to_salable_item FOREIGN KEY
(realization_id) REFERENCES wholesale_warehouse.realization(realization_id)
NOT VALID;
```

```
--
-- TOC entry 3527 (class 2606 OID 16461)
-- Name: procurement_item supply_id_to_procurement_item; Type: FK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.procurement_item
    ADD CONSTRAINT supply_id_to_procurement_item FOREIGN KEY
(supply_id) REFERENCES wholesale_warehouse.supply(supply_id) NOT
VALID;


--
-- TOC entry 3525 (class 2606 OID 16432)
-- Name: supply vendor_id_to_supply; Type: FK CONSTRAINT; Schema:
wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.supply
    ADD CONSTRAINT vendor_id_to_supply FOREIGN KEY (vendor_id)
REFERENCES wholesale_warehouse.vendor(vendor_id) NOT VALID;


--
-- TOC entry 3536 (class 2606 OID 16545)
-- Name: salable_item warehouse_id_to_salable_item; Type: FK CONSTRAINT;
Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.salable_item
    ADD CONSTRAINT warehouse_id_to_salable_item FOREIGN KEY
(warehouse_id) REFERENCES wholesale_warehouse.warehouse(warehouse_id)
NOT VALID;


--
-- TOC entry 3533 (class 2606 OID 16526)
-- Name: warehouse_item warehouse_id_to_warehouse_item; Type: FK
CONSTRAINT; Schema: wholesale_warehouse; Owner: postgres
--

ALTER TABLE ONLY wholesale_warehouse.warehouse_item
```

```
    ADD CONSTRAINT warehouse_id_to_warehouse_item FOREIGN KEY
(warehouse_id) REFERENCES wholesale_warehouse.warehouse(warehouse_id)
NOT VALID;


-- Completed on 2022-03-18 16:59:07 MSK

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

ВЫВОДЫ

В процессе выполнения работы на основе схем, разработанных во второй лабораторной работе прошлого семестра, с помощью программы pgAdmin была создана база данных, наполненная данными, а также были созданы логическая схема и dump. С помощью последнего инструмента база данных была восстановлена.