МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ

ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ

ВЫСШЕГО ОБРАЗОВАНИЯ

«НОВОСИБИРСКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ»

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Кафедра вычислительной техники



**Лабораторная работа №1**

по дисциплине: «WEB - ПРОГРАММИРОВАНИЕ»

на тему: **«Проектирование и реализация базы данных»**

Вариант №6

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Новосибирск

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СОДЕРЖАНИЕ

Введение 3

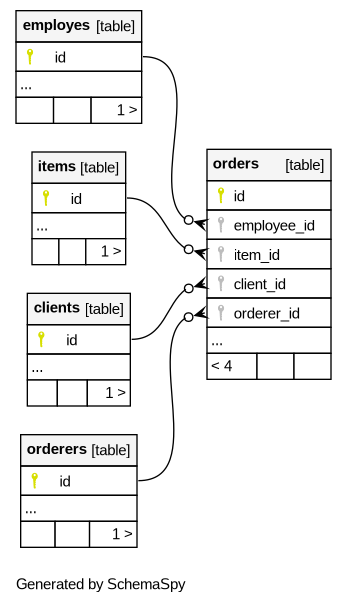
Ход работы 3

Вывод 6

# **Задание**

**Вариант 6.** Спроектировать структуру базы данных о заказах, полученных сотрудниками фирмы: фамилия, сумма заказа, наименование товара, название фирмы - клиента, фамилия заказчика.

**Структура базы данных**

****

**Скрипт создания БД**

DROP DATABASE orders;

CREATE DATABASE orders;

\set ON\_ERROR\_STOP on

\c orders

CREATE TABLE employes (

id SERIAL PRIMARY KEY,

name VARCHAR(64) NOT NULL

);

CREATE TABLE items (

id SERIAL PRIMARY KEY,

name VARCHAR(64) NOT NULL

);

CREATE TABLE clients (

id SERIAL PRIMARY KEY,

name VARCHAR(64) NOT NULL

);

CREATE TABLE orderers (

id SERIAL PRIMARY KEY,

name VARCHAR(64) NOT NULL

);

CREATE TABLE orders (

id SERIAL PRIMARY KEY,

employee\_id INT REFERENCES employes(id) ON DELETE RESTRICT,

price INT CHECK (price >= 0),

item\_id INT REFERENCES items(id) ON DELETE RESTRICT,

client\_id INT REFERENCES clients(id) ON DELETE RESTRICT,

orderer\_id INT REFERENCES orderers(id) ON DELETE RESTRICT

);

INSERT INTO employes (name) VALUES

('Employe 1'),

('Employe 2'),

('Best employe');

INSERT INTO items (name) VALUES

('Good stuff'),

('Nice stuff'),

('Bad stuff');

INSERT INTO clients (name) VALUES

('One-day firm'),

('Better future inc.');

INSERT INTO orderers (name) VALUES

('James Wilson'),

('Gregory House'),

('Liza Cuddy');

INSERT INTO orders (employee\_id, price, item\_id, client\_id, orderer\_id) VALUES

((SELECT id FROM employes WHERE name = 'Best employe'), 1200, (SELECT id FROM items WHERE name = 'Good stuff'), (SELECT id FROM clients WHERE name = 'Better future inc.'), (SELECT id FROM orderers WHERE name = 'Liza Cuddy'));

SELECT \* FROM items;

UPDATE orderers SET name = 'House M.D.' WHERE name = 'Gregory House';

DELETE FROM items WHERE name = 'Bad stuff';

**Дамп БД**

--

-- PostgreSQL database dump

--

-- Dumped from database version 17.5

-- Dumped by pg\_dump version 17.5

SET statement\_timeout = 0;

SET lock\_timeout = 0;

SET idle\_in\_transaction\_session\_timeout = 0;

SET transaction\_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;

SET default\_tablespace = '';

SET default\_table\_access\_method = heap;

--

-- Name: clients; Type: TABLE; Schema: public; Owner: postgres

--

CREATE TABLE public.clients (

id integer NOT NULL,

name character varying(64) NOT NULL

);

ALTER TABLE public.clients OWNER TO postgres;

--

-- Name: clients\_id\_seq; Type: SEQUENCE; Schema: public; Owner: postgres

--

CREATE SEQUENCE public.clients\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

ALTER SEQUENCE public.clients\_id\_seq OWNER TO postgres;

--

-- Name: clients\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: postgres

--

ALTER SEQUENCE public.clients\_id\_seq OWNED BY public.clients.id;

--

-- Name: employes; Type: TABLE; Schema: public; Owner: postgres

--

CREATE TABLE public.employes (

id integer NOT NULL,

name character varying(64) NOT NULL

);

ALTER TABLE public.employes OWNER TO postgres;

--

-- Name: employes\_id\_seq; Type: SEQUENCE; Schema: public; Owner: postgres

--

CREATE SEQUENCE public.employes\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

ALTER SEQUENCE public.employes\_id\_seq OWNER TO postgres;

--

-- Name: employes\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: postgres

--

ALTER SEQUENCE public.employes\_id\_seq OWNED BY public.employes.id;

--

-- Name: items; Type: TABLE; Schema: public; Owner: postgres

--

CREATE TABLE public.items (

id integer NOT NULL,

name character varying(64) NOT NULL

);

ALTER TABLE public.items OWNER TO postgres;

--

-- Name: items\_id\_seq; Type: SEQUENCE; Schema: public; Owner: postgres

--

CREATE SEQUENCE public.items\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

ALTER SEQUENCE public.items\_id\_seq OWNER TO postgres;

--

-- Name: items\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: postgres

--

ALTER SEQUENCE public.items\_id\_seq OWNED BY public.items.id;

--

-- Name: orderers; Type: TABLE; Schema: public; Owner: postgres

--

CREATE TABLE public.orderers (

id integer NOT NULL,

name character varying(64) NOT NULL

);

ALTER TABLE public.orderers OWNER TO postgres;

--

-- Name: orderers\_id\_seq; Type: SEQUENCE; Schema: public; Owner: postgres

--

CREATE SEQUENCE public.orderers\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

ALTER SEQUENCE public.orderers\_id\_seq OWNER TO postgres;

--

-- Name: orderers\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: postgres

--

ALTER SEQUENCE public.orderers\_id\_seq OWNED BY public.orderers.id;

--

-- Name: orders; Type: TABLE; Schema: public; Owner: postgres

--

CREATE TABLE public.orders (

id integer NOT NULL,

employee\_id integer,

price integer,

item\_id integer,

client\_id integer,

orderer\_id integer,

CONSTRAINT orders\_price\_check CHECK ((price >= 0))

);

ALTER TABLE public.orders OWNER TO postgres;

--

-- Name: orders\_id\_seq; Type: SEQUENCE; Schema: public; Owner: postgres

--

CREATE SEQUENCE public.orders\_id\_seq

AS integer

START WITH 1

INCREMENT BY 1

NO MINVALUE

NO MAXVALUE

CACHE 1;

ALTER SEQUENCE public.orders\_id\_seq OWNER TO postgres;

--

-- Name: orders\_id\_seq; Type: SEQUENCE OWNED BY; Schema: public; Owner: postgres

--

ALTER SEQUENCE public.orders\_id\_seq OWNED BY public.orders.id;

--

-- Name: clients id; Type: DEFAULT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.clients ALTER COLUMN id SET DEFAULT nextval('public.clients\_id\_seq'::regclass);

--

-- Name: employes id; Type: DEFAULT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.employes ALTER COLUMN id SET DEFAULT nextval('public.employes\_id\_seq'::regclass);

--

-- Name: items id; Type: DEFAULT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.items ALTER COLUMN id SET DEFAULT nextval('public.items\_id\_seq'::regclass);

--

-- Name: orderers id; Type: DEFAULT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orderers ALTER COLUMN id SET DEFAULT nextval('public.orderers\_id\_seq'::regclass);

--

-- Name: orders id; Type: DEFAULT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orders ALTER COLUMN id SET DEFAULT nextval('public.orders\_id\_seq'::regclass);

--

-- Data for Name: clients; Type: TABLE DATA; Schema: public; Owner: postgres

--

COPY public.clients (id, name) FROM stdin;

1 One-day firm

2 Better future inc.

\.

--

-- Data for Name: employes; Type: TABLE DATA; Schema: public; Owner: postgres

--

COPY public.employes (id, name) FROM stdin;

1 Employe 1

2 Employe 2

3 Best employe

\.

--

-- Data for Name: items; Type: TABLE DATA; Schema: public; Owner: postgres

--

COPY public.items (id, name) FROM stdin;

1 Good stuff

2 Nice stuff

\.

--

-- Data for Name: orderers; Type: TABLE DATA; Schema: public; Owner: postgres

--

COPY public.orderers (id, name) FROM stdin;

1 James Wilson

3 Liza Cuddy

2 House M.D.

\.

--

-- Data for Name: orders; Type: TABLE DATA; Schema: public; Owner: postgres

--

COPY public.orders (id, employee\_id, price, item\_id, client\_id, orderer\_id) FROM stdin;

1 3 1200 1 2 3

\.

--

-- Name: clients\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres

--

SELECT pg\_catalog.setval('public.clients\_id\_seq', 2, true);

--

-- Name: employes\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres

--

SELECT pg\_catalog.setval('public.employes\_id\_seq', 3, true);

--

-- Name: items\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres

--

SELECT pg\_catalog.setval('public.items\_id\_seq', 3, true);

--

-- Name: orderers\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres

--

SELECT pg\_catalog.setval('public.orderers\_id\_seq', 3, true);

--

-- Name: orders\_id\_seq; Type: SEQUENCE SET; Schema: public; Owner: postgres

--

SELECT pg\_catalog.setval('public.orders\_id\_seq', 1, true);

--

-- Name: clients clients\_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.clients

ADD CONSTRAINT clients\_pkey PRIMARY KEY (id);

--

-- Name: employes employes\_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.employes

ADD CONSTRAINT employes\_pkey PRIMARY KEY (id);

--

-- Name: items items\_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.items

ADD CONSTRAINT items\_pkey PRIMARY KEY (id);

--

-- Name: orderers orderers\_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orderers

ADD CONSTRAINT orderers\_pkey PRIMARY KEY (id);

--

-- Name: orders orders\_pkey; Type: CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orders

ADD CONSTRAINT orders\_pkey PRIMARY KEY (id);

--

-- Name: orders orders\_client\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orders

ADD CONSTRAINT orders\_client\_id\_fkey FOREIGN KEY (client\_id) REFERENCES public.clients(id) ON DELETE RESTRICT;

--

-- Name: orders orders\_employee\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orders

ADD CONSTRAINT orders\_employee\_id\_fkey FOREIGN KEY (employee\_id) REFERENCES public.employes(id) ON DELETE RESTRICT;

--

-- Name: orders orders\_item\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orders

ADD CONSTRAINT orders\_item\_id\_fkey FOREIGN KEY (item\_id) REFERENCES public.items(id) ON DELETE RESTRICT;

--

-- Name: orders orders\_orderer\_id\_fkey; Type: FK CONSTRAINT; Schema: public; Owner: postgres

--

ALTER TABLE ONLY public.orders

ADD CONSTRAINT orders\_orderer\_id\_fkey FOREIGN KEY (orderer\_id) REFERENCES public.orderers(id) ON DELETE RESTRICT;

--

-- PostgreSQL database dump complete

--