Министерство образования и науки Российской Федерации

Федеральное государственное автономное образовательное учреждение

высшего образования

МОСКОВСКИЙ ПОЛИТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

(МОСКОВСКИЙ ПОЛИТЕХ)

Лабораторная работа «Реализация структуры Data Vault»

По дисциплине

«Хранилища данных»

Факультет «Информационные технологии»

Кафедра «Прикладная информатика»

Группа 203-321

Студентка \_\_\_\_\_\_\_\_\_\_Д.С. Комарова

Преподаватель \_\_\_\_\_\_\_\_\_\_В.С Ноздрин

Москва 2024 г.

Carshops (автосалоны).

*CREATE TABLE carshops(*

*id INTEGER NOT NULL PRIMARY KEY,*

*name VARCHAR(64) NOT NULL UNIQUE,*

*contact\_phone VARCHAR(16) NOT NULL,*

*country VARCHAR(64) NOT NULL,*

*city VARCHAR(64) NOT NULL,*

*address VARCHAR(128) NOT NULL*

*);*

Manufacturer (производители)

*CREATE TABLE manufacturer(*

*id INTEGER NOT NULL PRIMARY KEY,*

*name VARCHAR(128) NOT NULL*

*);*

Factory (заводы)

*CREATE TABLE factory(*

*id INTEGER NOT NULL PRIMARY KEY,*

*country VARCHAR(64) NOT NULL,*

*city VARCHAR(64) NOT NULL,*

*address VARCHAR(128) NOT NULL,*

*manufacturer\_id INT,*

*FOREIGN KEY (manufacturer\_id) REFERENCES manufacturer(id) ON DELETE SET NULL*

*);*

Engines (двигатели)

*CREATE TABLE engines(*

*id INTEGER NOT NULL PRIMARY KEY,*

*name VARCHAR(32) NOT NULL,*

*volume FLOAT NOT NULL,*

*power INT NOT NULL*

*);*

Bodies (кузов)

*CREATE TABLE bodies(*

*id INTEGER NOT NULL PRIMARY KEY,*

*name VARCHAR(32) NOT NULL,*

*color VARCHAR(32) NOT NULL,*

*material VARCHAR(32) NOT NULL,*

*height FLOAT NOT NULL,*

*width FLOAT NOT NULL,*

*length FLOAT NOT NULL*

*);*

Tech\_parameters (тех.характеристики)

*CREATE TABLE tech\_parameters(*

*id INTEGER NOT NULL PRIMARY KEY,*

*body\_id INT,*

*engine\_id INT,*

*weight INT NOT NULL,*

*FOREIGN KEY (engine\_id) REFERENCES engines(id) ON DELETE SET NULL,*

*FOREIGN KEY (body\_id) REFERENCES bodies(id) ON DELETE SET NULL*

*);*

Cars (автомобили)

*CREATE TABLE cars(*

*id INTEGER NOT NULL PRIMARY KEY,*

*model VARCHAR(32) NOT NULL,*

*mark VARCHAR(32) NOT NULL,*

*tech\_parameters\_id INT NOT NULL,*

*FOREIGN KEY (tech\_parameters\_id) REFERENCES tech\_parameters(id) ON DELETE CASCADE*

*);*

После того как таблицы были созданы я настроила Many To Many связь между автосалонами и автомобилями:

*CREATE TABLE assortment(*

*id INTEGER NOT NULL PRIMARY KEY,*

*car\_id INT NOT NULL,*

*carshop\_id INT NOT NULL,*

*FOREIGN KEY (car\_id) REFERENCES cars(id) ON DELETE CASCADE,*

*FOREIGN KEY (carshop\_id) REFERENCES carshops(id) ON DELETE CASCADE*

*);*

Далее я заполнила таблицы небольшим набором данных (по 3-5 строк)

*-- Автосалоны*

*INSERT INTO carshops (id, name, contact\_phone, country, city, address)*

*VALUES (NULL, 'Nissan Official', '89145551155', 'Россия', 'Москва', 'Улица Пушкина');*

*INSERT INTO carshops (id, name, contact\_phone, country, city, address)*

*VALUES (NULL, 'Mercedes', '89314344425', 'Россия', 'Москва', 'Улица Академика Нестерова');*

*INSERT INTO carshops (id, name, contact\_phone, country, city, address)*

*VALUES (NULL, 'Авторынок', '894333345', 'Россия', 'Москва', 'Улица Автозаводская');*

*-- Производители*

*INSERT INTO manufacturer (id, name) VALUES (NULL, 'Nissan');*

*INSERT INTO manufacturer (id, name) VALUES (NULL, 'Mercedes');*

*INSERT INTO manufacturer (id, name) VALUES (NULL, 'Toyota');*

*INSERT INTO manufacturer (id, name) VALUES (NULL, 'Subaru');*

*-- Заводы*

*INSERT INTO factory (id, country, city, address, manufacturer\_id)*

*VALUES (NULL, 'Россия', 'Москва', 'Улица Собирателей', 1);*

*INSERT INTO factory (id, country, city, address, manufacturer\_id)*

*VALUES (NULL, 'Россия', 'Москва', 'Улица Разбирателей', 2);*

*INSERT INTO factory (id, country, city, address, manufacturer\_id)*

*VALUES (NULL, 'Россия', 'Москва', 'Улица Победителей', 3);*

*INSERT INTO factory (id, country, city, address, manufacturer\_id)*

*VALUES (NULL, 'Россия', 'Москва', 'Улица Проигрателей', 4);*

*-- Двигатели*

*INSERT INTO engines (id, name, volume, power) VALUES (NULL, 'Мега движок', 8, 500);*

*INSERT INTO engines (id, name, volume, power) VALUES (NULL, 'Ультра Мега движок', 8, 760);*

*INSERT INTO engines (id, name, volume, power) VALUES (NULL, 'XXL ENGINE', 12, 1000);*

*INSERT INTO engines (id, name, volume, power) VALUES (NULL, 'Engine+', 4, 300);*

*INSERT INTO engines (id, name, volume, power) VALUES (NULL, 'Ведро и гайки', 1, 150);*

*INSERT INTO engines (id, name, volume, power) VALUES (NULL, 'BOMB', 7.5, 600);*

*-- Кузовы*

*INSERT INTO bodies (id, name, color, material, height, width, length)*

*VALUES (NULL, 'Q12', 'Серый', 'Аллюминий', 1.5, 1.6, 4.5);*

*INSERT INTO bodies (id, name, color, material, height, width, length)*

*VALUES (NULL, 'BX128', 'Чёрный', 'Аллюминий', 1.5, 1.6, 5);*

*INSERT INTO bodies (id, name, color, material, height, width, length)*

*VALUES (NULL, 'MJ-a', 'Чёрный', 'Аллюминий', 1.3, 1.6, 4.5);*

*INSERT INTO bodies (id, name, color, material, height, width, length)*

*VALUES (NULL, 'FW-blue', 'Синий', 'Аллюминий', 1.3, 1.6, 6);*

*INSERT INTO bodies (id, name, color, material, height, width, length)*

*VALUES (NULL, 'Ведёрко', 'Белый', 'Вибраниум', 1.5, 1.6, 4.3);*

*INSERT INTO bodies (id, name, color, material, height, width, length)*

*VALUES (NULL, 'MMM', 'Серый', 'Аллюминий', 1.5, 1.6, 4.3);*

*-- Тех. параметры*

*INSERT INTO tech\_parameters (id, body\_id, engine\_id, weight) VALUES (NULL, 1, 1, 1200);*

*INSERT INTO tech\_parameters (id, body\_id, engine\_id, weight) VALUES (NULL, 2, 2, 1350);*

*INSERT INTO tech\_parameters (id, body\_id, engine\_id, weight) VALUES (NULL, 3, 3, 1350);*

*INSERT INTO tech\_parameters (id, body\_id, engine\_id, weight) VALUES (NULL, 4, 4, 1560);*

*INSERT INTO tech\_parameters (id, body\_id, engine\_id, weight) VALUES (NULL, 5, 5, 1110);*

*INSERT INTO tech\_parameters (id, body\_id, engine\_id, weight) VALUES (NULL, 6, 6, 1200);*

*-- Автомобили*

*INSERT INTO cars (id, model, mark, tech\_parameters\_id) VALUES (NULL, 'Ultra', 'Nissan', 1);*

*INSERT INTO cars (id, model, mark, tech\_parameters\_id) VALUES (NULL, 'Mega', 'Nissan', 2);*

*INSERT INTO cars (id, model, mark, tech\_parameters\_id) VALUES (NULL, 'Rich', 'Mercedes', 3);*

*INSERT INTO cars (id, model, mark, tech\_parameters\_id) VALUES (NULL, 'Pooshka', 'Toyota', 4);*

*INSERT INTO cars (id, model, mark, tech\_parameters\_id) VALUES (NULL, 'Star', 'Subaru', 5);*

*INSERT INTO cars (id, model, mark, tech\_parameters\_id) VALUES (NULL, 'Sun', 'Subaru', 6);*

*-- Ассортимент*

*-- Nissan Official*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 1, 1);*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 2, 1);*

*-- Mercedes*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 3, 2);*

*-- Авторынок*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 1, 3);*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 2, 3);*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 3, 3);*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 4, 3);*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 5, 3);*

*INSERT INTO assortment (id, car\_id, carshop\_id) VALUES (NULL, 6, 3);*

