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DROP TABLE IF EXISTS username_password CASCADE;
DROP TABLE IF EXISTS chain CASCADE;
DROP TABLE IF EXISTS location CASCADE;
DROP TABLE IF EXISTS customer CASCADE;
DROP TABLE IF EXISTS visits CASCADE;
DROP TABLE IF EXISTS pharmacist CASCADE;
DROP TABLE IF EXISTS diagnosis CASCADE;
DROP TABLE IF EXISTS disease CASCADE;
DROP TABLE IF EXISTS treats CASCADE;
DROP TABLE IF EXISTS hospital CASCADE;
DROP TABLE IF EXISTS doctor CASCADE;
DROP TABLE IF EXISTS manufacturer CASCADE;
DROP TABLE IF EXISTS drug CASCADE;
DROP TABLE IF EXISTS prescription CASCADE;
DROP TABLE IF EXISTS prescribed CASCADE;
DROP TABLE IF EXISTS filled CASCADE;

CREATE TABLE username_password (
        username VARCHAR NOT NULL,
        password VARCHAR NOT NULL,
        user_type VARCHAR NOT NULL,
        PRIMARY KEY (username));

CREATE TABLE chain (
        stock_id VARCHAR NOT NULL,
        name VARCHAR NOT NULL,
        year_founded NUMERIC,
        ceo VARCHAR,
        PRIMARY KEY (stock_id));

CREATE TABLE location (
        address VARCHAR NOT NULL,
        city VARCHAR NOT NULL,
        state VARCHAR NOT NULL,
        zipcode integer NOT NULL,
        stock_id VARCHAR NOT NULL,
        manager_name VARCHAR NOT NULL,
        phone_no VARCHAR NOT NULL,
        PRIMARY KEY (address, zipcode, stock_id),
        FOREIGN KEY (stock_id) REFERENCES chain(stock_id));

CREATE TABLE pharmacist  (
        username VARCHAR NOT NULL,
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	name VARCHAR NOT NULL,
	location_address VARCHAR NOT NULL,
	location_zipcode INTEGER NOT NULL,
	location_stock_id VARCHAR NOT NULL,
	phone_no VARCHAR NOT NULL,
	salary NUMERIC NOT NULL,
	sex VARCHAR NOT NULL,
	hired_date DATE,
	home_address VARCHAR,
	PRIMARY KEY (username),
	FOREIGN KEY (username) REFERENCES username_password(username),
	FOREIGN KEY (location_address, location_zipcode, location_stock_id) REFERENCES
location(address, zipcode, stock_id));

CREATE TABLE hospital (
	name VARCHAR NOT NULL,
	address VARCHAR NOT NULL,
	city VARCHAR NOT NULL,
	state VARCHAR NOT NULL,
	zipcode INT NOT NULL,
	phone_no VARCHAR NOT NULL,
	PRIMARY KEY (name, address, zipcode));

CREATE TABLE doctor (
	username VARCHAR NOT NULL,
	name VARCHAR NOT NULL,
	specialization VARCHAR,
	sex VARCHAR,
	phone_no VARCHAR,
	address VARCHAR,
	date_of_birth DATE,
	hospital_name VARCHAR NOT NULL,
	hospital_address VARCHAR NOT NULL,
	hospital_zipcode INT NOT NULL,
	PRIMARY KEY (username),
	FOREIGN KEY (hospital_name, hospital_address, hospital_zipcode) REFERENCES
hospital(name, address, zipcode));

CREATE TABLE customer (
	username VARCHAR NOT NULL,
	name VARCHAR NOT NULL,
	date_of_birth DATE,
	phone_no VARCHAR,
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        sex VARCHAR,
        address VARCHAR,
        PRIMARY KEY (username),
        FOREIGN KEY (username) REFERENCES username_password(username));

CREATE TABLE visits (
        location_address VARCHAR NOT NULL,
        location_zipcode INTEGER NOT NULL,
        location_stock_id VARCHAR NOT NULL,
        customer_username VARCHAR NOT NULL,
        PRIMARY KEY (location_address, location_zipcode, location_stock_id,
customer_username),
        FOREIGN KEY (customer_username) REFERENCES customer(username),
        FOREIGN KEY (location_address, location_zipcode, location_stock_id) REFERENCES
location(address, zipcode, stock_id));

CREATE TABLE manufacturer(
   stock_id VARCHAR NOT NULL,
   name VARCHAR NOT NULL,
   year_founded INT NOT NULL,
   ceo VARCHAR NOT NULL,
   PRIMARY KEY (stock_id));

CREATE TABLE drug(
   ndc VARCHAR NOT NULL,
   name VARCHAR NOT NULL,
   ingredients VARCHAR NOT NULL,
   side_effects VARCHAR NOT NULL,
   price VARCHAR NOT NULL,
   dosage VARCHAR NOT NULL,
   manufacturer_stock_id VARCHAR NOT NULL,
   PRIMARY KEY(ndc),
   FOREIGN KEY (manufacturer_stock_id) REFERENCES manufacturer(stock_id));

CREATE TABLE disease (
        name VARCHAR NOT NULL,
        symptoms VARCHAR,
        disease_type VARCHAR,
        PRIMARY KEY (name));

CREATE TABLE treats (
        disease_name VARCHAR NOT NULL,
        drug_ndc VARCHAR NOT NULL,
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        PRIMARY KEY (disease_name, drug_ndc),
        FOREIGN KEY (disease_name) REFERENCES disease(name),
        FOREIGN KEY (drug_ndc) REFERENCES drug(ndc));

CREATE TABLE diagnosis (
        customer_username VARCHAR NOT NULL,
        disease_name VARCHAR NOT NULL,
        doctor_username VARCHAR NOT NULL,
        diagnosis_date DATE NOT NULL,
        PRIMARY KEY (customer_username, disease_name, doctor_username,
diagnosis_date),
        FOREIGN KEY (customer_username) REFERENCES customer(username),
        FOREIGN KEY (doctor_username) REFERENCES doctor(username),
        FOREIGN KEY (disease_name) REFERENCES disease(name));

CREATE TABLE prescription(
   customer_username VARCHAR NOT NULL,
   disease_name VARCHAR NOT NULL,
        doctor_username VARCHAR NOT NULL,
   diagnosis_date DATE NOT NULL,
        no_of_fills INTEGER,
        fill_frequency VARCHAR,
   PRIMARY KEY (customer_username, disease_name, doctor_username, diagnosis_date),
   FOREIGN KEY (customer_username, disease_name, doctor_username, diagnosis_date)
REFERENCES diagnosis(customer_username, disease_name, doctor_username,
diagnosis_date));

CREATE TABLE prescribed(
   ndc VARCHAR NOT NULL,
        customer_username VARCHAR NOT NULL,
   disease_name VARCHAR NOT NULL,
        doctor_username VARCHAR NOT NULL,
   diagnosis_date DATE NOT NULL,
   PRIMARY KEY (ndc, customer_username, disease_name, doctor_username,
diagnosis_date),
   FOREIGN KEY (ndc) REFERENCES drug(ndc),
   FOREIGN KEY(customer_username, disease_name, doctor_username, diagnosis_date)
REFERENCES prescription(customer_username, disease_name, doctor_username,
diagnosis_date));

CREATE TABLE filled(
   pharmacist_username VARCHAR NOT NULL,
   customer_username VARCHAR NOT NULL,
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    disease_name VARCHAR NOT NULL,
        doctor_username VARCHAR NOT NULL,
    diagnosis_date DATE NOT NULL,
    filled_date DATE,
    PRIMARY KEY (pharmacist_username, customer_username, disease_name,
doctor_username, diagnosis_date),
    FOREIGN KEY (pharmacist_username) REFERENCES pharmacist(username),
    FOREIGN KEY (customer_username, disease_name, doctor_username, diagnosis_date)
REFERENCES prescription(customer_username, disease_name, doctor_username,
diagnosis_date));

CREATE TABLE stock(
        address VARCHAR NOT NULL,
        zipcode integer NOT NULL,
        stock_id VARCHAR NOT NULL,
        drug_ndc VARCHAR NOT NULL,
        amount numeric NOT NULL,
        PRIMARY KEY (address, stock_id, zipcode, drug_ndc),
        FOREIGN KEY (address, stock_id, zipcode) REFERENCES location(address, stock_id,
zipcode),
        FOREIGN KEY (drug_ndc) REFERENCES drug(ndc));
```