

The Vezeeta database is designed to manage healthcare operations by organizing main entities such as doctors, patients, pharmacies, facilities, appointments, and medicines. It facilitates scheduling appointments, managing prescriptions, and tracking medicines to support smooth and efficient healthcare services. To better understand how the Vezeeta database achieves this, let's take a closer look at its main entities and the relationships between them.

ENTITIES:

-The PATIENT entity represents the individuals receiving any kind of services (appointments/ordering from the pharmacy), each patient has a unique ID (PatientID), a name which is composed of first (FirstName), and last (LastName) names, a birthdate (BirthDate), an email (Email), a password (Password), gender (Gender), an insurance (Insurance), a phone number (PhoneNumber), and an address composed of the building (Building), street (Street), and the city (City).

-The DOCTOR entity represents the doctors working in a hospital, clinic, or a lab, each doctor has a unique ID (DoctorID), a name which is composed of first (FirstName) and last (LastName) names, a title (Title) (professor, consultant, specialist, etc.), gender (Gender), specialization (Specialization) (Dentistry/ Neurology/ Pediatrics/ Cardiology/ etc.), an email (Email), a rating (Rating), and a phone number (PhoneNumber).

-The APPOINTMENT entity has a unique ID (ApptID), date (Date), time (Time), status (Status) (scheduled/ cancelled/ completed), and a type (Type) (Home visit/ Teleconsultation/ Visit).

-The PHARMACY entity offers multiple services, where the patient can directly order the medicines they want from the pharmacy, or through a prescription prescribed by the doctor. This entity has a unique ID (PharmacyID), address (Address), a name (Name), and the pharmacy may have several phone numbers (PhoneNumber).

- The FACILITY entity represents the locations where healthcare services are provided. Each facility is categorized as either a hospital, clinic, or lab. Each facility has a unique ID (FacilityID), name (Name), type (Type) (Hospital/Clinic/Lab), address (Address), and the facility may have several phone numbers (PhoneNumber).

-The MEDICINE entity includes all the medicines being sold in the pharmacies, each medicine has a unique name (Name), and a price (Price).

RELATIONSHIPS:

Books: is a (1:N) relationship between PATIENT and APPOINTMENT, where a patient can book multiple appointments, but each appointment is associated with only one patient. Booking appointments is optional for patients, as patients can also place orders directly with pharmacies without needing to schedule an appointment.

With : is a (1:M) relationship between DOCTOR and APPOINTMENT, where each doctor can have multiple appointments, but each appointment is associated with exactly one doctor. Both entities participate fully in this relationship, meaning every doctor must have at least one appointment, and every appointment must be linked to a doctor.

- TakePlace: is a (1:N) relationship between FACILITY and APPOINTMENT that shows that one facility can have many appointments, but each appointment can only happen in one facility. Every facility must have at least one appointment, but some appointments don't need a facility, like home visits or teleconsultations.

-Visits: is a (1:N) relationship between FACILITIES and PATIENTS. A facility can have many patients visiting at the same time, but a patient can only visit one facility at a time for their appointment. Every facility must have patients visiting, but some patients can receive services without visiting a facility.

-Works at: is a (M:N) relationship between FACILITY and DOCTOR, where multiple doctors can work at the same facility, and a doctor can work in multiple facilities, each doctor must work in at least one facility, and each facility must have at least one doctor.

-Prescription: is a ternary relationship between PATIENT, DOCTOR, and PHARMACY.

-Order from: is a (1:N) relationship between PATIENT and PHARMACY, where the patient can order from the pharmacy directly without the prescription from a doctor, the patient can only order from one pharmacy at a time, but the pharmacy can have many orders from different patients at a time, not every patient has to order from the pharmacy, but each pharmacy must have orders from patients.

-Sells: is a (M:N) relationship between PHARMACY and MEDICINE where a medicine can be sold in many different pharmacies, and a pharmacy sells many different types of medicines, each pharmacy must sell different medicines, and each medicine must be sold in a pharmacy.