PROJECT PETLIYST

Onur Uygar Küçük

Problem Domain

Modern veterinary clinics deal with complex operations like managing pet records, scheduling appointments, handling treatment and diagnosis histories, and coordinating communication between pet owners and veterinarians. Many small to mid-sized clinics still rely on manual or partially digital systems, leading to inefficiencies, errors, and poor customer service.

Data Requirements
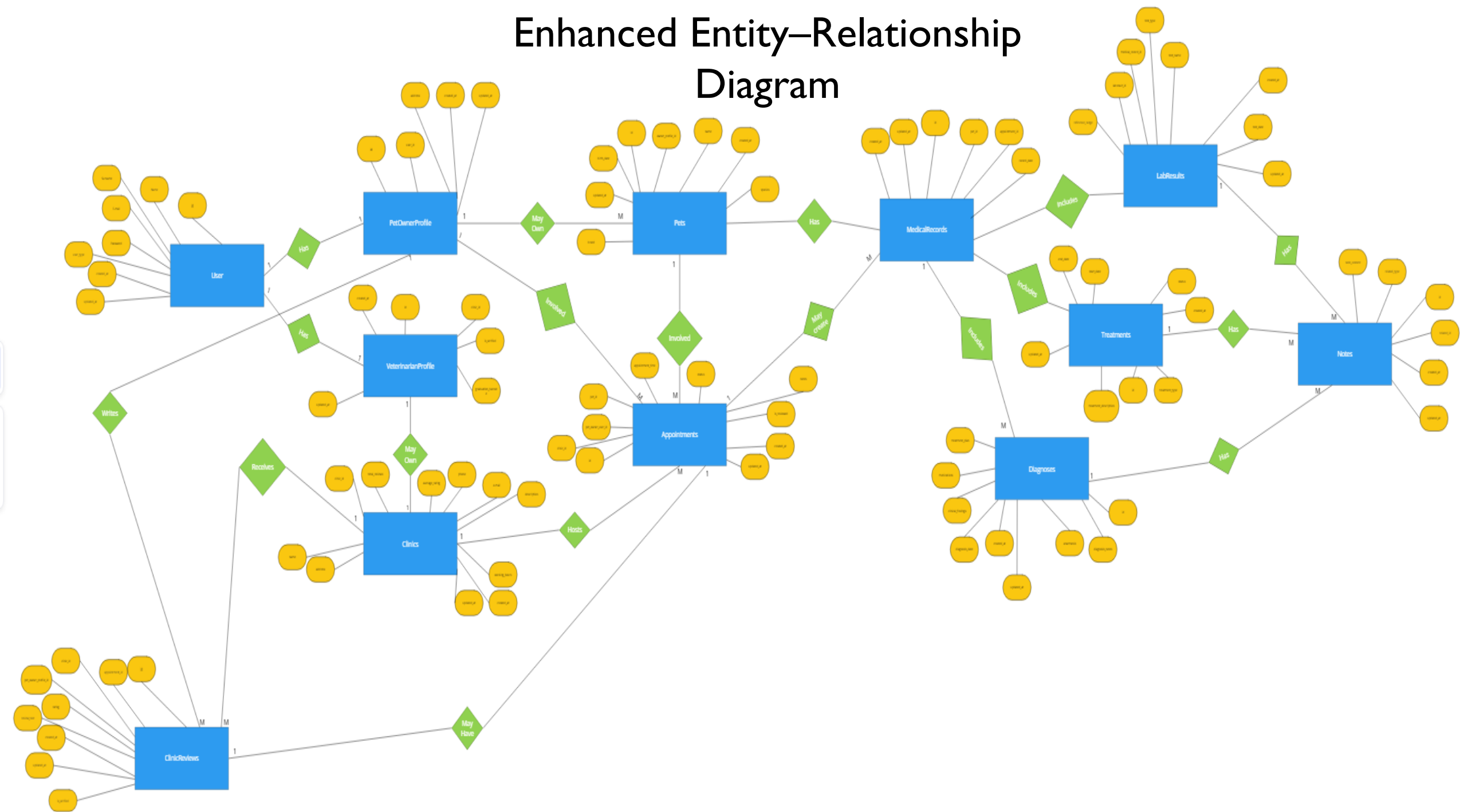
Enable clinics to store and access pet medical records.
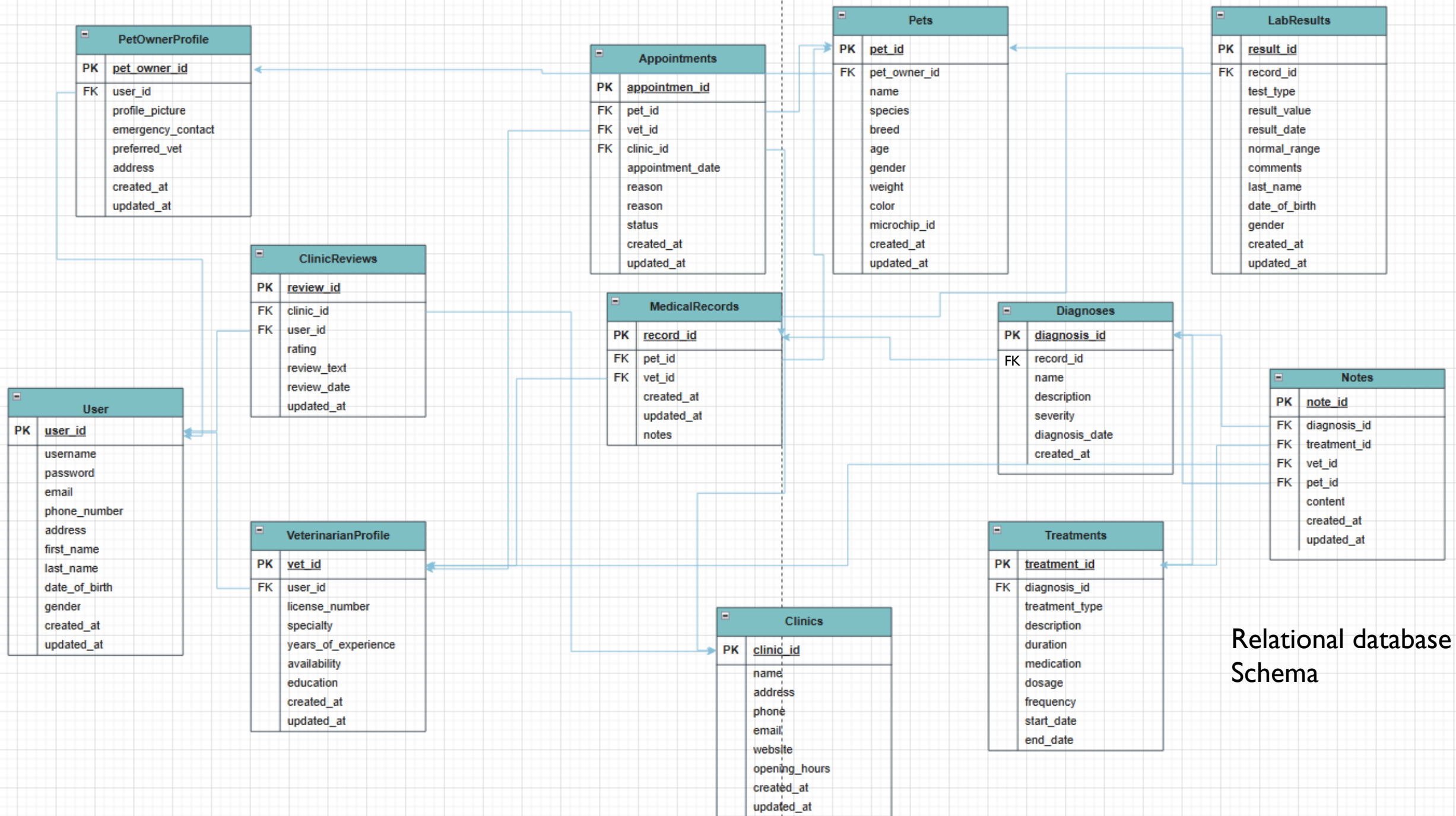
Allow pet owners to book and manage appointments.

Support veterinarians in diagnosing,prescribing and documenting treatments.

Facilitate communication through notes and record sharing.

Enable reviews for clinics by pet owners for transparency.

Enhanced Entity–Relationship Diagram

PetOwnerProfile

PK	pet_owner_id
FK	user_id
	profile_picture
	emergency_contact
	preferred_vet
	address
	created_at
	updated_at

Appointments

PK	appointmen_id
FK	pet_id
FK	vet_id
FK	clinic_id
	appointment_date
	reason
	reason
	status
	created_at
	updated_at

Pets

PK	pet_id
FK	pet_owner_id
	name
	species
	breed
	age
	gender
	weight
	color
	microchip_id
	created_at
	updated_at

LabResults

PK	result_id
FK	record_id
	test_type
	result_value
	result_date
	normal_range
	comments
	last_name
	date_of_birth
	gender
	created_at
	updated_at

ClinicReviews

PK	review_id
FK	clinic_id
FK	user_id
	rating
	review_text
	review_date
	updated_at

MedicalRecords

PK	record_id
FK	pet_id
FK	vet_id
	created_at
	updated_at
	notes

Diagnoses

PK	diagnosis_id
FK	record_id
	name
	description
	severity
	diagnosis_date
	created_at

Notes

PK	note_id
FK	diagnosis_id
FK	treatment_id
FK	vet_id
FK	pet_id
	content
	created_at
	updated_at

User

PK	user_id
	username
	password
	email
	phone_number
	address
	first_name
	last_name
	date_of_birth
	gender
	created_at
	updated_at

VeterinarianProfile

PK	vet_id
FK	user_id
	license_number
	specialty
	years_of_experience
	availability
	education
	created_at
	updated_at

Clinics

PK	clinic_id
	name
	address
	phone
	email
	website
	opening_hours
	created_at
	updated_at

Treatments

PK	treatment_id
FK	diagnosis_id
	treatment_type
	description
	duration
	medication
	dosage
	frequency
	start_date
	end_date

Relational database Schema

Portgresql Tables

```sql
CREATE TABLE Userr (
    user_id INT,
    username VARCHAR(50),
    password VARCHAR(100),
    email VARCHAR(100),
    phone_number VARCHAR(20),
    address TEXT,
    first_name VARCHAR(50),
    last_name VARCHAR(50),
    date_of_birth DATE,
    gender VARCHAR(10),
    created_at TIMESTAMP,
    updated_at TIMESTAMP,
    PRIMARY KEY (user_id)
);
CREATE TABLE PetOwnerProfile (
    pet_owner_id INT PRIMARY KEY,
    user_id INT,
    profile_picture VARCHAR(255),
    emergency_contact VARCHAR(100),
    address TEXT,
    preferred_vet INT,
    created_at TIMESTAMP,
    updated_at TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES Userr(user_id)
    );
CREATE TABLE VeterinarianProfile (
    vet_id INT PRIMARY KEY,
    user_id INT,
    license_number VARCHAR(50),
    specialty VARCHAR(100),
    years_of_experience INT,
    availability TEXT,
    education TEXT,
    created_at TIMESTAMP,
    updated_at TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES Userr(user_id)
);
```

```sql
CREATE TABLE Pets (
    pet_id INT PRIMARY KEY,
    pet_owner_id INT,
    name VARCHAR(50),
    species VARCHAR(50),
    breed VARCHAR(50),
    age INT,
    gender VARCHAR(10),
    weight DECIMAL(5,2),
    color VARCHAR(30),
    microchip_id VARCHAR(100),
    created_at TIMESTAMP,
    updated_at TIMESTAMP,
    FOREIGN KEY (pet_owner_id) REFERENCES PetOwnerProfile(pet_owner_id)
);
CREATE TABLE Appointments (
    appointment_id INT PRIMARY KEY,
    pet_id INT,
    vet_id INT,
    clinic_id INT,
    appointment_date TIMESTAMP,
    reason TEXT,
    status VARCHAR(20),
    created_at TIMESTAMP,
    updated_at TIMESTAMP,
    FOREIGN KEY (pet_id) REFERENCES Pets(pet_id),
    FOREIGN KEY (vet_id) REFERENCES VeterinarianProfile(vet_id),
    FOREIGN KEY (clinic_id) REFERENCES Clinics(clinic_id)
);
CREATE TABLE Clinics (
    clinic_id INT PRIMARY KEY,
    name VARCHAR(100),
    address TEXT,
    phone VARCHAR(20),
    email VARCHAR(100),
    website VARCHAR(255),
    opening_hours TEXT,
    created_at TIMESTAMP,
    updated_at TIMESTAMP
);
```

Portgresql Tables

```sql
CREATE TABLE MedicalRecords (
    record_id INT PRIMARY KEY,
    pet_id INT,
    vet_id INT,
    created_at TIMESTAMP,
    updated_at TIMESTAMP,
    notes TEXT,
    FOREIGN KEY (pet_id) REFERENCES Pets(pet_id),
    FOREIGN KEY (vet_id) REFERENCES VeterinarianProfile(vet_id)
);
CREATE TABLE LabResults (
    result_id INT PRIMARY KEY,
    record_id INT,
    test_type VARCHAR(100),
    result_value TEXT,
    result_date DATE,
    normal_range VARCHAR(100),
    comments TEXT,
    FOREIGN KEY (record_id) REFERENCES MedicalRecords(record_id)
);
CREATE TABLE Diagnoses (
    diagnosis_id INT PRIMARY KEY,
    record_id INT,
    name VARCHAR(100),
    description TEXT,
    severity VARCHAR(50),
    diagnosis_date DATE,
    created_at TIMESTAMP,
    FOREIGN KEY (record_id) REFERENCES MedicalRecords(record_id)
);
```

```sql
CREATE TABLE Treatments (
    treatment_id INT PRIMARY KEY,
    diagnosis_id INT,
    treatment_type VARCHAR(100),
    description TEXT,
    duration INT,
    medication VARCHAR(100),
    dosage VARCHAR(50),
    frequency VARCHAR(50),
    start_date DATE,
    end_date DATE,
    FOREIGN KEY (diagnosis_id) REFERENCES Diagnoses(diagnosis_id)
);
CREATE TABLE Notes (
    note_id INT PRIMARY KEY,
    diagnosis_id INT,
    treatment_id INT,
    vet_id INT,
    pet_id INT,
    content TEXT,
    created_at TIMESTAMP,
    updated_at TIMESTAMP,
    FOREIGN KEY (diagnosis_id) REFERENCES Diagnoses(diagnosis_id),
    FOREIGN KEY (treatment_id) REFERENCES Treatments(treatment_id),
    FOREIGN KEY (vet_id) REFERENCES VeterinarianProfile(vet_id),
    FOREIGN KEY (pet_id) REFERENCES Pets(pet_id)
);
CREATE TABLE ClinicReviews (
    review_id INT PRIMARY KEY,
    clinic_id INT,
    user_id INT,
    rating INT,
    review_text TEXT,
    review_date DATE,
    updated_at TIMESTAMP,
    FOREIGN KEY (clinic_id) REFERENCES Clinics(clinic_id),
    FOREIGN KEY (user_id) REFERENCES Userr(user_id)
);
```

DATA

User

| user_id [PK] integer	username character varying (50)	password character varying (100)	email character varying (100)	phone_number character varying (20)	address text	first_name character varying (50)	last_name character varying (50)	date_of_birth date	gender character varying (10)
1	1 Ahmet	123456	ahmet@gmail.com	05465483214	Ankara	Ahmet	Taşçı	1991-07-06	Male
2	2 Sibel	75321	sibel@gmail.com	05479423641	İstanbul	Sibel	Bayrak	1991-08-14	Female
3	3 Taner	951753	Taner@gmail.com	05426984512	Antalya	Taner	Terim	1985-02-20	Male
4	1001 elifcan	hashed_pass_1001	elif.can@example.com	5321112233	123 Papatya Sk., No:5, Ankara	Elif	Can	1990-05-15	Female
5	1002 ayseyilmazvet	hashed_pass_1002	ayse.yilmaz@vetclinic.com	5551234567	789 Veteriner Cd., No:10, Ankara	Ayşe	Yılmaz	1985-08-20	Female
6	1003 mehmetdemirvet	hashed_pass_1003	mehmet.demir@vetclinic.com	5559876543	456 Cerrahi Sk., No:3, İzmir	Mehmet	Demir	1980-03-25	Male
7	1004 cemaksoy	hashed_pass_1004	cem.aksoy@example.com	5432223344	789 Menekşe Cad., No:12, İzmir	Cem	Aksoy	1992-11-01	Male
8	1005 denizcelik	hashed_pass_1005	deniz.celik@example.com	5053334455	321 Lale Sk., No:8, İstanbul	Deniz	Çelik	1988-02-28	Female

Pets

pet_id [PK] integer	pet_owner_id integer	name character varying (50)	species character varying (50)	breed character varying (50)	age integer	gender character varying (10)	weight numeric (5,2)	color character varying (30)	microchip_id character varying (100)
1	1	1 Max	Dog	Golden Retriever	5	Male	30.50	Golden	ABCD12345678
2	2	2 Whiskers	Cat	Siamese	3	Female	4.20	Cream Point	EFGH98765432
3	3	1 Buddy	Dog	Labrador	6	Male	28.10	Black	IJKL56789012
4	4	3 Tweety	Bird	Canary	2	Female	0.03	Yellow	[null]

PetOwnerProfiles

pet_owner_id [PK] integer	user_id integer	profile_picture character varying (255)	emergency_contact character varying (100)	address text	preferred_vet integer	created_at timestamp without time zone	updated_at timestamp without time zone
1	1	1001	https://example.com/profiles/elif_can.jpg	Ali Can - 5329998877	123 Papatya Sk., No:5, Ankara	[null]	2024-01-01 10:30:00	2024-01-01 10:30:00
2	2	1004	https://example.com/profiles/cem_aksoy.j...	Ayşe Aksoy - 54377766...	789 Menekşe Cad., No:12, İzmir	[null]	2024-01-10 14:30:00	2024-01-10 14:30:00
3	3	1005	https://example.com/profiles/deniz_celik.jpg	Veli Çelik - 5056667788	321 Lale Sk., No:8, İstanbul	[null]	2024-01-12 16:30:00	2024-01-12 16:30:00

DATA

VetProfile

vet_id [PK] integer	user_id integer	license_number character varying (50)	specialty character varying (100)	years_of_experience integer	availability text	education text	created_at timestamp without time zone	updated_at timestamp without time zone
1	1002	TR-VET-001-ANK	Small Animal Internal Medicine	15	Mon-Fri 09:00-17:...	Ankara University Faculty of Veterinary Medicine	2024-01-05 09:30:00	2024-01-05 09:30:00
2	1003	TR-VET-002-IZM	Veterinary Surgery	10	Tue-Sat 10:00-18:00	Ege University Faculty of Veterinary Medicine	2024-01-06 11:30:00	2024-01-06 11:30:00

Clinic

clinic_id [PK] integer	name character varying (100)	address text	phone character varying (20)	email character varying (100)	website character varying (255)	opening_hours text	created_at timestamp without time zone	updated_at timestamp without time zone
10	Central Pet Clinic	123 Atatürk Blv., Çankaya, Ankara	312-111-2233	info@centralpet.com	http://www.centralpet.com	Mon-Sat: 09:00-18:...	2024-01-01 08:00:00	2024-01-01 08:00:00
20	Happy Paws Veterinary	456 Sahil Cd., Konak, İzmir	232-444-5566	contact@happypaws.com	http://www.happypaws.c...	Mon-Fri: 10:00-19:00	2024-01-02 09:00:00	2024-01-02 09:00:00

Appointments

appointment_id [PK] integer	pet_id integer	vet_id integer	clinic_id integer	appointment_date timestamp without time zone	reason text	status character varying (20)	created_at timestamp without time zone	updated_at timestamp without time zone
1	1	1	10	2024-05-25 14:00:00	Annual Checkup	Scheduled	2024-05-20 10:00:00	2024-05-20 10:00:00
2	2	2	20	2024-05-26 10:30:00	Vaccination	Scheduled	2024-05-20 11:00:00	2024-05-20 11:00:00
3	3	1	10	2024-05-27 16:00:00	Limping left front leg	Scheduled	2024-05-21 09:00:00	2024-05-21 09:00:00

MedicalRecords

| record_id [PK] integer	pet_id integer	vet_id integer	created_at timestamp without time zone	updated_at timestamp without time zone	notes text
101	1	1	2024-03-10 10:00:00	2024-03-10 10:00:00	Routine check-up. All vital signs normal. Advised on diet.
102	2	2	2024-04-05 15:00:00	2024-04-05 15:00:00	Cat presented with sneezing. Suspected Feline URI.
103	3	1	2024-03-20 11:30:00	2024-03-20 11:30:00	Dog is due for annual vaccinations. Owner has questions about joint supplements.

DATA

Notes

note_id [PK] integer	diagnosis_id integer	treatment_id integer	vet_id integer	pet_id integer	content text	created_at timestamp without time zone	updated_at timestamp without time zone
1	1	1	2	2	Owner reports improvement in sneezing, cat eating better. Continue medication as prescribed.	2024-04-08 09:00:00	2024-04-08 09:00:00

Clinic Reviews

review_id [PK] integer	clinic_id integer	user_id integer	rating integer	review_text text	review_date date	updated_at timestamp without time zone
1	1	1001	5	Harika bir klinik, personel çok ilgili ve bilgili. Max her zaman mutlu ayrılıyor!	2024-05-18	2024-05-18 14:00:00
2	2	1004	4	Randevu süreleri biraz uzun olabilir ama veterinerler çok iyi.	2024-05-19	2024-05-19 10:00:00

Treatments

treatment_id [PK] integer	diagnosis_id integer	treatment_type character varying (100)	description text	duration integer	medication character varying (100)	dosage character varying (50)	frequency character varying (50)	start_date date	end_date date
1	1	Antibiotic Course	Oral antibiotics to prevent secondary bacterial infections.	7	Amoxicillin	10mg/kg	BID	2024-04-05	2024-04-12

Diagnosis

diagnosis_id [PK] integer	record_id integer	name character varying (100)	description text	severity character varying (50)	diagnosis_date date	created_at timestamp without time zone
1	1	102	Feline Upper Respiratory Infection (FURI)	Common viral infection affecting cat's respiratory system.	Medium	2024-04-05	2024-04-05 15:30:00

Results

result_id [PK] integer	record_id integer	test_type character varying (100)	result_value text	result_date date	normal_range character varying (100)	comments text
1	1001	102	PCR Test	Positive for Feline Herpesvirus	2024-04-06	Negative	Confirms viral cause of URI.

QUERIES
Find pets with their owners' details

```
195
196
197 ∨  SELECT
198        p.pet_id,
199        p.name AS pet_name,
200        p.species,
201        p.breed,
202        po.pet_owner_id,
203        u.user_id,
204        u.first_name AS owner_first_name,
205        u.last_name AS owner_last_name,
206        u.email AS owner_email,
207        u.phone_number AS owner_phone
208  FROM
209        Pets p
210  JOIN
211        PetOwnerProfile po ON p.pet_owner_id = po.pet_owner_id
212  JOIN
213        Userr u ON po.user_id = u.user_id;
214
```

Data Output   Messages   Notifications

pet_id integer	pet_name character varying (50)	species character varying (50)	breed character varying (50)	pet_owner_id integer	user_id integer	owner_first_name character varying (50)	owner_last_name character varying (50)	owner_email character varying (100)	owner_phone character varying (20)
1	1	Max	Dog	Golden Retriever	1	1001	Elif	Can	elif.can@example.com	5321112233
2	2	Whiskers	Cat	Siamese	2	1004	Cem	Aksoy	cem.aksoy@example.co..	5432223344
3	3	Buddy	Dog	Labrador	1	1001	Elif	Can	elif.can@example.com	5321112233
4	4	Tweety	Bird	Canary	3	1005	Deniz	Çelik	deniz.celik@example.com	5053334455

QUERIES

List veterinarians and their specialties, along with the count of appointments they have

```sql
216 ⌄  SELECT
217         v.vet_id,
218         u.first_name,
219         u.last_name,
220         v.specialty,
221         COUNT(a.appointment_id) AS appointment_count
222     FROM
223         VeterinarianProfile v
224     LEFT JOIN
225         Appointments a ON v.vet_id = a.vet_id
226     LEFT JOIN
227         Userr u ON v.user_id = u.user_id
228     GROUP BY
229         v.vet_id, u.first_name, u.last_name, v.specialty
230     ORDER BY
231         appointment_count DESC;
```

Data Output   Messages   Notifications

	vet_id integer 🔒	first_name character varying (50) 🔒	last_name character varying (50) 🔒	specialty character varying (100) 🔒	appointment_count bigint 🔒
1	1	Ayşe	Yılmaz	Small Animal Internal Medicine	2
2	2	Mehmet	Demir	Veterinary Surgery	1

QUERIES

Find clinics with their contact details and the count of appointments

```sql
233 ∨  SELECT
234        c.clinic_id,
235        c.name AS clinic_name,
236        c.address,
237        c.phone,
238        c.email,
239        COUNT(a.appointment_id) AS appointment_count
240     FROM
241        Clinics c
242     LEFT JOIN
243        Appointments a ON c.clinic_id = a.clinic_id
244     GROUP BY
245        c.clinic_id, c.name, c.address, c.phone, c.email
246     ORDER BY
247        appointment_count DESC;
248     |
```

Data Output   Messages   Notifications

	clinic_id [PK] integer	clinic_name character varying (100)	address text	phone character varying (20)	email character varying (100)	appointment_count bigint
1	10	Central Pet Clinic	123 Atatürk Blv., Çankaya, Ankara	312-111-2233	info@centralpet.com	2
2	20	Happy Paws Veterinary	456 Sahil Cd., Konak, İzmir	232-444-5566	contact@happypaws.com	1

QUERİES
Get a list of pets, their vets, and their upcoming appointments

```sql
336 ∨  SELECT
337         a.appointment_id,
338         p.name AS pet_name,
339         u.first_name AS vet_first_name,
340         u.last_name AS vet_last_name,
341         c.name AS clinic_name,
342         a.appointment_date,
343         a.reason,
344         a.status
345     FROM
346         Appointments a
347     JOIN
348         Pets p ON a.pet_id = p.pet_id
349     JOIN
350         VeterinarianProfile vp ON a.vet_id = vp.vet_id
351     JOIN
352         Userr u ON vp.user_id = u.user_id
353     JOIN
354         Clinics c ON a.clinic_id = c.clinic_id
355     WHERE
356         a.appointment_date BETWEEN '2024-05-20' AND '2024-05-27'
357     ORDER BY
358         a.appointment_date;
```

Data Output   Messages   Notifications

	appointment_id integer	pet_name character varying (50)	vet_first_name character varying (50)	vet_last_name character varying (50)	clinic_name character varying (100)	appointment_date timestamp without time zone	reason text	status character varying (20)
1	1	Max	Ayşe	Yılmaz	Central Pet Clinic	2024-05-25 14:00:00	Annual Checkup	Scheduled
2	2	Whiskers	Mehmet	Demir	Happy Paws Veterinary	2024-05-26 10:30:00	Vaccination	Scheduled