# Doggo

**Mobile Application for Dog Owners**

**Raz Olewsky | Shir Tzfania | Nizan Naor**
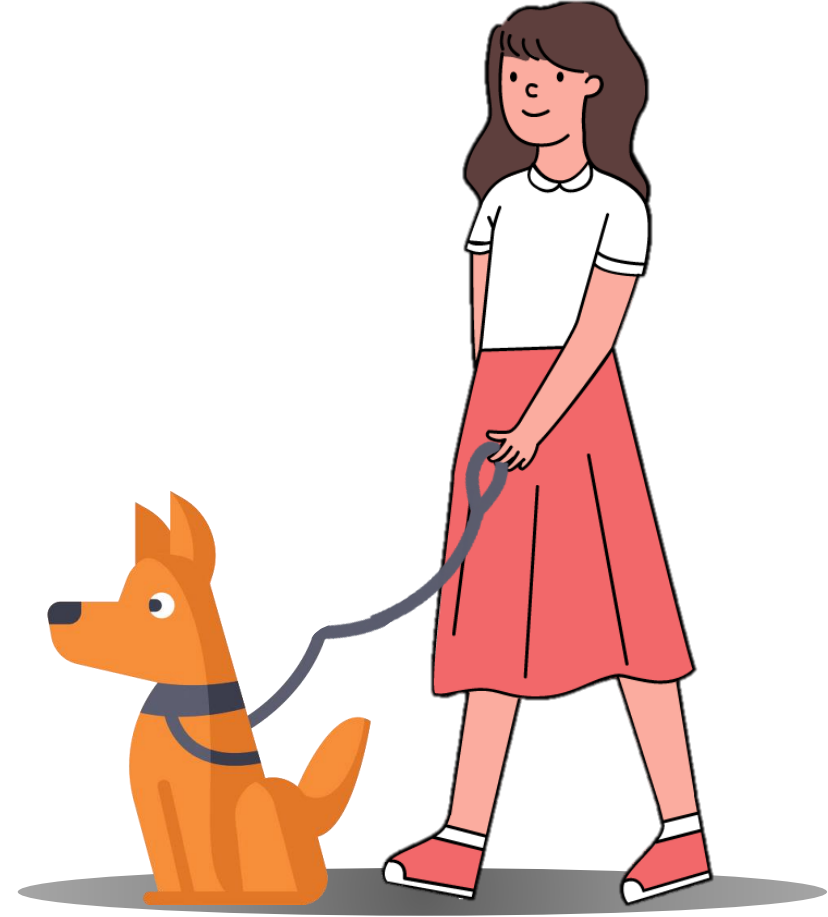
Project Number: 15006502

Mentor: Gili Kamma

# Why Doggo?

# The Problem 🔴❗

- Tracking dog's activities

- Dog's safety

- Socialize with other dog owners

- All in one platform

# Our Solution

### Your Dog's Collar

### Mobile Application

IoT Device

# Main Features 🔑

**Fitness tracking**

**Dog-Friendly places**

**Information Management**

Social Networking

Coming Soon... חבילת ברזל

# **Dog-Friendly places**

- Open Street Map (OSM) API

- Useful recommended places

- Favorite places
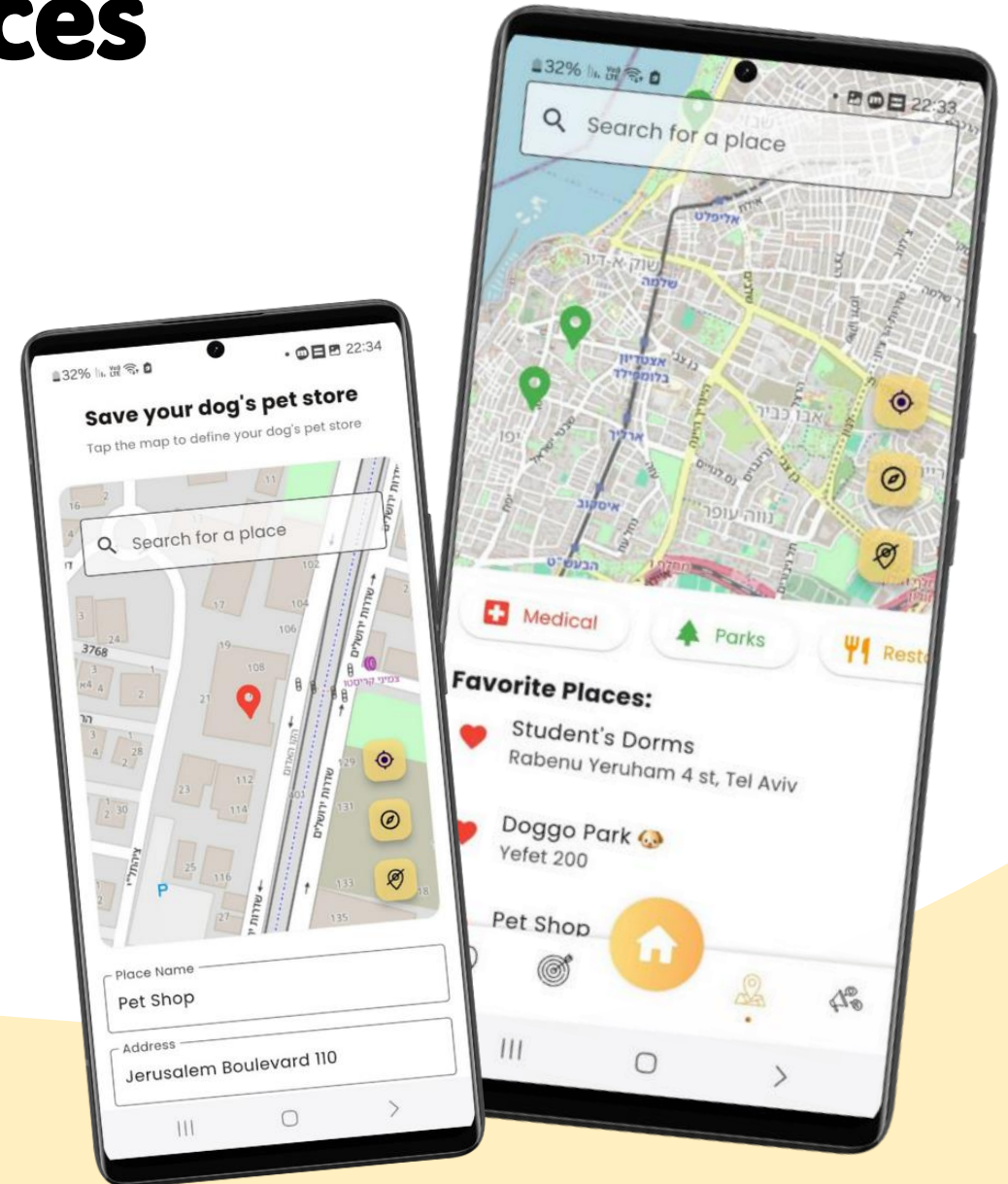
# Information Management

- Dog's basic profile

- Medical records

- Food & nutrition

- Pension & vet information
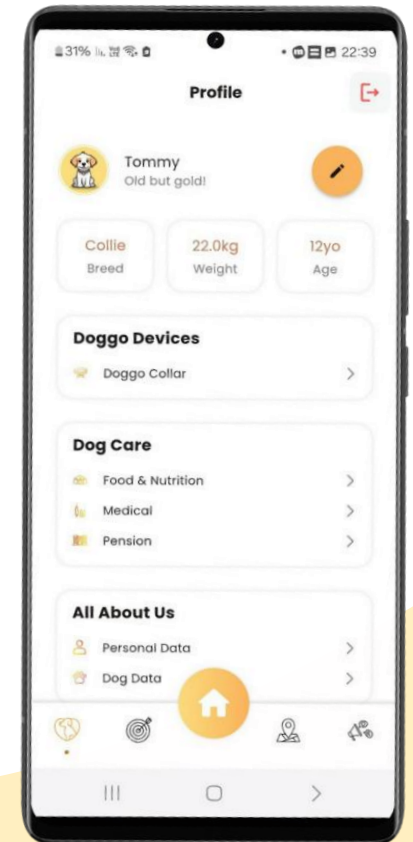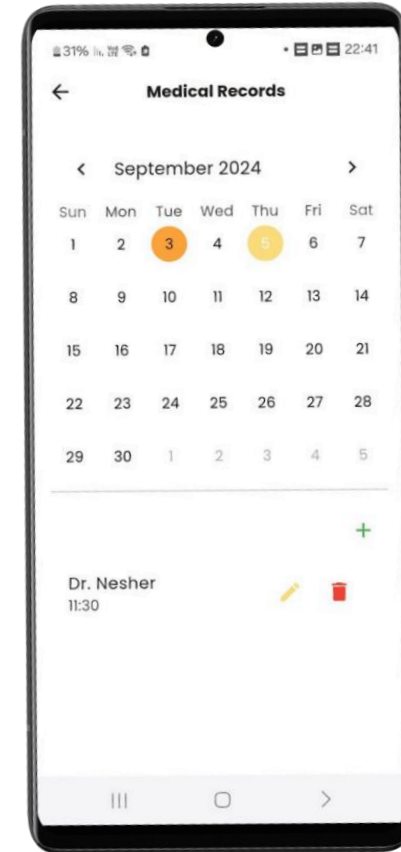
# Technical Architecture



BLE

http

http

Doggo Collar

Mobile App

Servers

DB
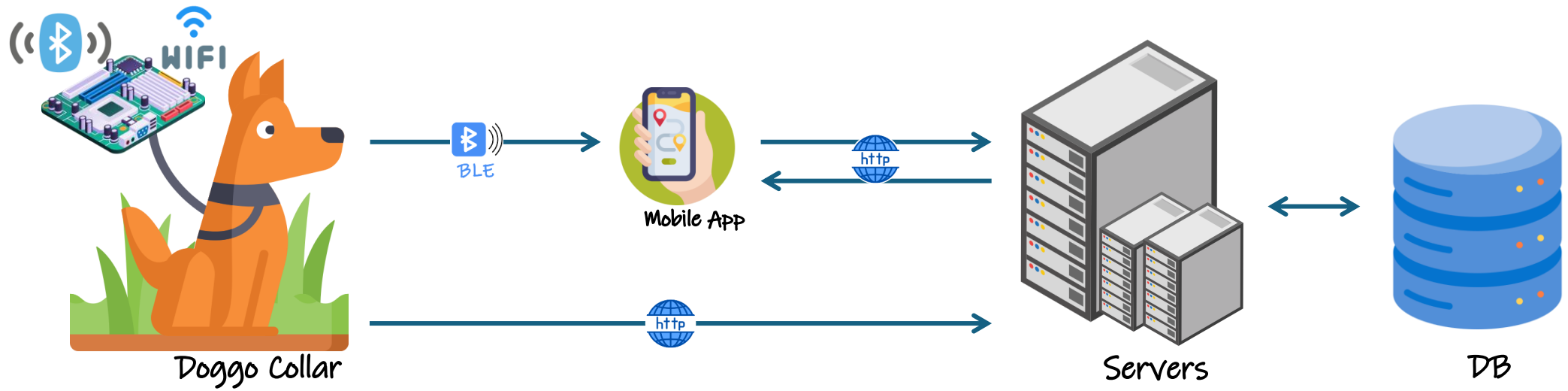
# Technology Stack

## Embedded

Arduino Board

Arduino NANO 33 – IoT

Charged Battery

Language: C++

IDE: Arduino IDE

## Mobile

Language: Dart

Framework: Flutter

Mobile Application:

Android

## Backend

Language: Python

Framework: Flask

Architecture:

Monolith

# Database Architecture

PostgreSQL

**Legend:**
- Entities
- Information management
- Social Networking
- Fitness Tracking
- Dog-Friendly Places
- Other

**FAQ**
| FAQ_id | int NN |
| question | varchar(500) |
| answer | varchar(500) |

**notifications** — Notifications
| notification_id | integer NN |
| user_id | integer NN |
| timestamp | timestamp |
| is_read | boolean |
| type | varchar(30) |

**collars** — Collars
| collar_id | varchar(50) NN |
| battery_service_uuid | varchar(50) |
| battery_level_characteristic_uuid | varchar(50) |
| step_service_uuid | varchar(50) |
| step_count_characteristic_uuid | varchar(50) |
| distance_service_uuid | varchar(50) |
| distance_characteristic_uuid | varchar(50) |
| dog_id | int |
| ble_connected | boolean |
| wifi_connected | boolean |
| battery_level | int |
| last_update | timestamp |

**medical_records** — Medical Records
| record_id | int NN |
| vet_name | varchar(50) NN |
| address | varchar(50) |
| record_date | timestamp NN |
| description | varchar(255) |
| dog_id | int |

**nutrition** — Nutrition
| dog_id | int |
| food_brand | varchar(100) |
| food_type | varchar(100) |
| food_amount_grams | integer |
| daily_snacks | integer |
| notes | varchar(500) |
| primary | key(dog_id) |

**activities** — Activities
| activity_id | int |
| dog_id | int |
| activity_type | varchar(30) NN |
| start_time | timestamp NN |
| end_time | timestamp |
| duration | interval |
| steps | int |
| distance | float |
| calories_burned | float |

**fitness** — Fitness
| dog_id | int |
| fitness_date | date NN |
| distance | float |
| steps_today | int |
| calories_burned | float |
| primary | key(dog_id,date) |

**chat** — Chat
| chat_id | int |
| user_id_1 | int |
| user_id_2 | int |
| last_message_datetime | timestamp |

**users_dogs** — User - Dog
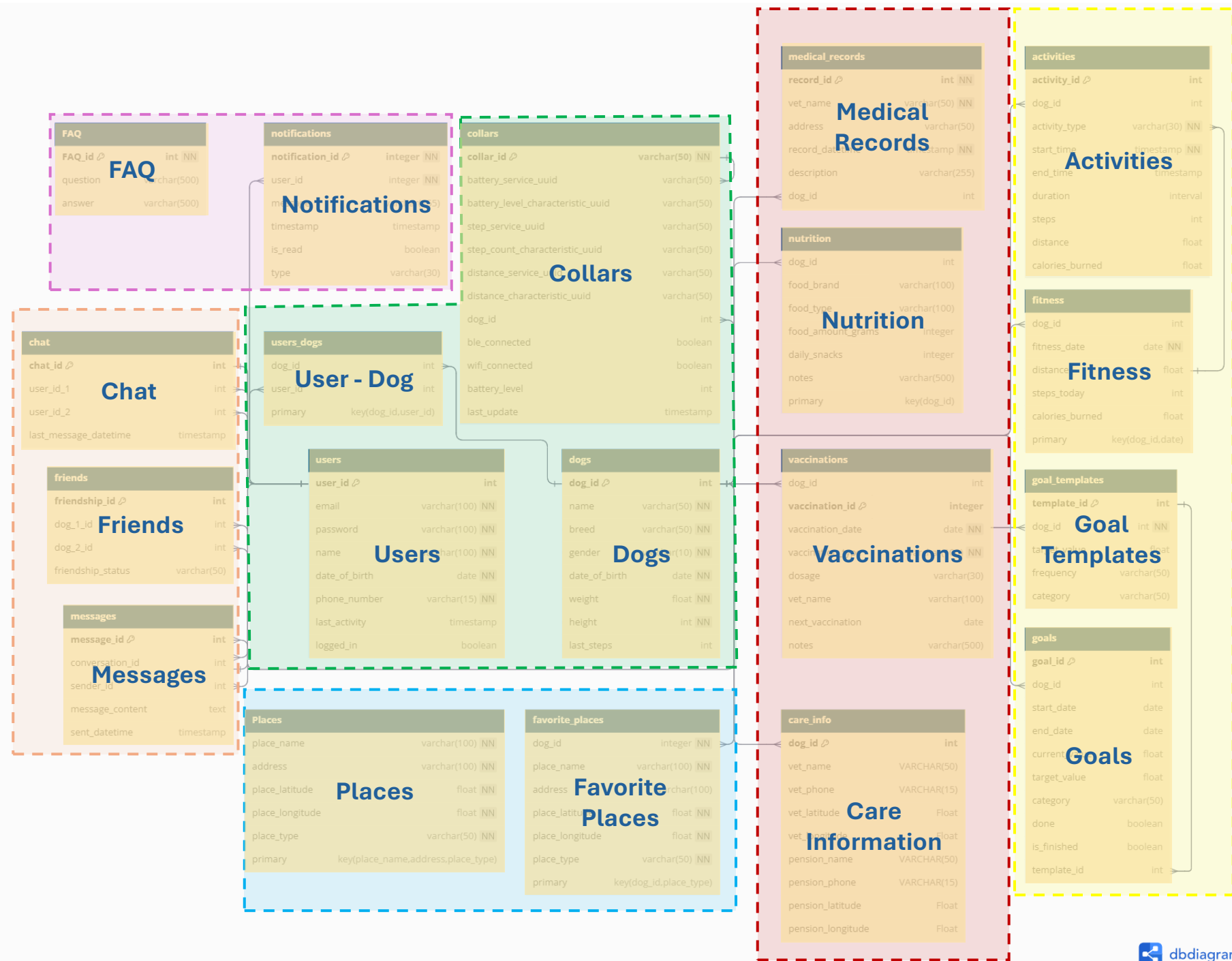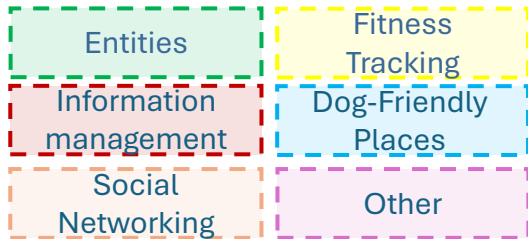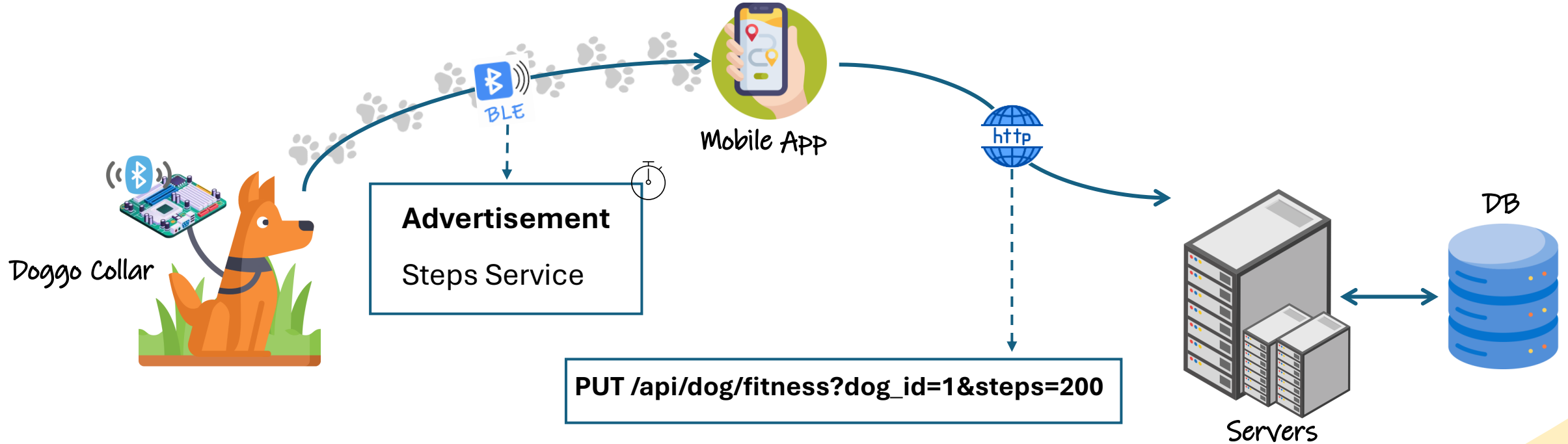| dog_id | int |
| user_id | int |
| primary | key(dog_id,user_id) |

**friends** — Friends
| friendship_id | int |
| dog_1_id | int |
| dog_2_id | int |
| friendship_status | varchar(50) |

**users** — Users
| user_id | int |
| email | varchar(100) NN |
| password | varchar(100) NN |
| name | varchar(100) NN |
| date_of_birth | date NN |
| phone_number | varchar(15) NN |
| last_activity | timestamp |
| logged_in | boolean |

**dogs** — Dogs
| dog_id | int |
| name | varchar(50) NN |
| breed | varchar(50) NN |
| gender | varchar(10) NN |
| date_of_birth | date NN |
| weight | float NN |
| height | int NN |
| last_steps | int |

**vaccinations** — Vaccinations
| dog_id | int |
| vaccination_id | integer |
| vaccination_date | date NN |
| vaccine_name | varchar(100) |
| dosage | varchar(30) |
| vet_name | varchar(100) |
| next_vaccination | date |
| notes | varchar(500) |

**goal_templates** — Goal Templates
| template_id | int |
| dog_id | int |
| title | varchar(50) |
| frequency | varchar(50) |
| category | varchar(50) |

**messages** — Messages
| message_id | int |
| conversation_id | int |
| sender_id | int |
| message_content | text |
| sent_datetime | timestamp |

**Places** — Places
| place_name | varchar(100) NN |
| address | varchar(100) NN |
| place_latitude | float NN |
| place_longitude | float NN |
| place_type | varchar(50) NN |
| primary | key(place_name,address,place_type) |

**favorite_places** — Favorite Places
| dog_id | integer NN |
| place_name | varchar(100) NN |
| address | varchar(100) |
| place_latitude | float NN |
| place_longitude | float NN |
| place_type | varchar(50) NN |
| primary | key(dog_id,place_type) |

**care_info** — Care Information
| dog_id | int |
| vet_name | VARCHAR(50) |
| vet_phone | VARCHAR(15) |
| vet_latitude | Float |
| vet_longitude | Float |
| pension_name | VARCHAR(50) |
| pension_phone | VARCHAR(15) |
| pension_latitude | Float |
| pension_longitude | Float |

**goals** — Goals
| goal_id | int |
| dog_id | int |
| start_date | date |
| end_date | date |
| current | float |
| target_value | float |
| category | varchar(50) |
| done | boolean |
| is_finished | boolean |
| template_id | int |

dbdiagram.

# Endpoint Example: Steps Update



Doggo Collar

**Advertisement**

Steps Service

Mobile App

http

PUT /api/dog/fitness?dog_id=1&steps=200

Servers

DB

Scan me!