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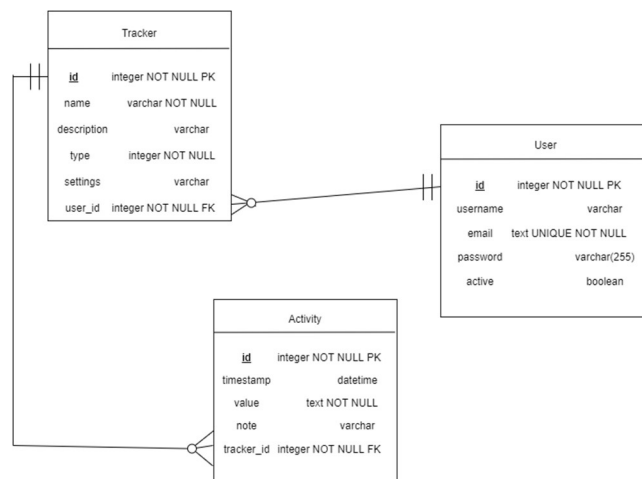
Description

This project is meant to design/develop an App which can track different activities an
individual may be doing for health and fitness. The app helps to aggregate the activity
data and help understand the progress. Possibly, adjust the future activities better to
achieve the goal.

Technologies used

- Flask
    - For web application framework
- SQLite & flask_sqlalchemy
    - For persistency of data
    - For interacting with SQLite db as an ORM
- Bootstrap & JINJA2
    - For UI & aesthetic
- flask_login, flask_security
    - For user management, session, and authentication
- Matplotlib, NumPy
    - For plotting graphical charts
    - For statistical computations
- Csv, base64
    - For data exporting
    - For converting image to base64image string
- JavaScript
    - For client-side validation and dynamicity

DB Schema Design

- Users can sign up to the app using their email id which is unique.
- A user can have more than one tracker Hence, the relation between the USER and
  TRACKER is one to many
- Further there can be more than one log entry for each tracker Hence, the relation
  between TRACKER and ACTIVITY is also one to many.
- Each table has primary key as id which is configured to be auto generated.

Tracker

id	integer NOT NULL PK
name	varchar NOT NULL
description	varchar
type	integer NOT NULL
settings	varchar
user_id	integer NOT NULL FK

User

id	integer NOT NULL PK
username	varchar
email	text UNIQUE NOT NULL
password	varchar(255)
active	boolean

Activity

id	integer NOT NULL PK
timestamp	datetime
value	text NOT NULL
note	varchar
tracker_id	integer NOT NULL FK

Architecture and Features

For most part of the application the code is organised as per MVC architecture

Models

USER, TRACKER and ACTIVITY

VIEWS

DASHBOARD, Create/Update tracker, Create/Update activity

Controller

Tracker controller and activity controller

- Application is subscription based, meaning user sign up to the application using their email id along with a password of user choice.
- Home page or Dashboard upon login lists the existing trackers created by user along with option to create/edit/remove trackers.
- Each tracker has option to log data against it from options provided in the table.
- Create/Update forms get auto adjusted based on user need for ex: tracker type, log type.
- There are 4 types of trackers user can create based on the data type it collects
  - Numeric (A positive value)
  - Multiple choice (option1, option2 …)
  - Time Duration (HH:mm:ss)
  - Boolean (yes/no)
- Tracker overview lets user to view the logs per tracker and with some stats and figures.
- User also has export to CSV as an option to download his data for further use.

Video

Demo Video