Author

Sandeep Nalla

21f1006125

21f1006125@student.onlinedegree.iitm.ac.in

About: Software Professional with 8 years of industry experience with the following skill sets

- REST API development using Spring Boot/Spring Reactive (Java) framework
- Automation Frontend (Web & Mobile Apps) using Selenium (Java) & REST API using RestAssured (Java)

Description

Implement Self tracker web app for tracking habits, activities, and other life parameters

- Creating or Updating or Deleting a tracker
- Logging events under a tracker and updating or deleting logged events
- Displaying Stats of a tracker in form of graph & list

Technologies used

- Flask==2.0.3 – To build dynamic frontend web application
- Flask-RESTful==0.3.9 – To build REST APIs
- Flask-SQLAlchemy==2.5.1 – To connect to DB
- Flask-Security – To allow authenticated users to login & authorized users to perform action
- Jinja2==3.0.3 – To generate HTML programmatically
- HTML – Markup language
- SQLite – Data base management
- Bootstrap – UI framework
- Plotly

Tools used

- PyCharm (IDE)
- DB browser for SQLite

DB Schema Design

- User – For storing allowed user details to access the app
  - id (Integer, Autoincrement, Primary key)
  - email (String, Unique)
  - username (String)
  - password (String)
  - active (Boolean)
- Role – For storing role details
  - id (Integer, Autoincrement, Primary key)
  - name (String, Unique)
  - description (String)

- roles_users – For maintaining relation between users & roles
  - id (Integer, Autoincrement, Primary key)
  - user_id (Integer, Foreign key)
  - role_id (Integer, Foreign key)
  - Constraints:
    - Foreign key – user_id – To link user
    - Foreign key – role_id – To link role
- Tracker – For storing tracker details
  - id (Integer, Autoincrement, Primary key)
  - name (String, unique, non-nullable)
  - description (String, non-nullable)
  - type (String, non-nullable)
  - settings (String)
- Log – For storing logged events
  - id (Integer, Primary key, Autoincrement)
  - timestamp (String, non-nullable)
  - tracker (Integer, non-nullable)
  - value (String, non-nullable)
  - note (String)
  - Constraint:
    - Foreign key - tracker.id – To link logged events to a tracker

API Design

CRUD operations for tracker & log
- /api/trackers
- /api/trackers/<int:tracker_id>
- /api/trackers/<int:tracker_id>/logs
- /api/trackers/<int:tracker_id>/logs/<int:log_id>

Swagger:
 https://app.swaggerhub.com/apis/NallaSandeep/iit.mad1.finalproject/0.3/

Architecture and Features

Project structure:
- Root
  - application
    - config
    - controllers
    - models
  - db-directory
    - db sqlite file
  - static
    - css
    - js
    - images
  - templates

- HTML files
  - app.py (Orchestration)

Features:
- User login
- Tracker management (Create, View, Edit, Delete)
  - Dashboard and Trendlines
- Tracker log events (Create, View, Edit, Delete)
- APIs for CRUD operations

Video

https://drive.google.com/file/d/1f9BRFhvC0y1vCaVN5ROKQ7I5jtPO47Ua/view?usp=sharing