Author

Vaibhav Kumar
Roll: 21f1000737
vaibhav2002kr@gmail.com

I am a dedicated student pursuing a dual degree in B.Com. (hons) from Shri Ram College of Commerce and BS. in data science from IIT Madras. My goal is to leverage my diverse academic background and combine the best of business knowledge, strategic thinking, mathematical aptitude, and programming skills to solve complex problems in the dynamic world of business.

Source Code

Take me to Github

Description

At the heart of this project lies a tracker application, a digital product, designed to simplify the lives of users by providing them with a comprehensive tool to create and monitor their progress in various areas of their lives. With our user-friendly platform, users can effortlessly create trackers of different data types and log entries for each tracker, providing them with a bird's eye view of their progress over time.

Whether it's tracking exercise routines, dietary habits, or work productivity, our application offers a customizable interface that caters to the unique needs of every user. And with the ability to view real-time graphs and charts of their progress, users can easily visualize trends and identify areas for improvement.

Technologies used

- Text Editor – Sublime Text (Anaconda Command Prompt for running application)
- Package Manager – Anaconda
- For designing – Figma & Bootstrap
- Community Help – Stack Overflow
- Database from SQlite
- Framework – Flask

DB Schema Design

Table - User

```
"id" INTEGER NOT NULL,
"username" VARCHAR NOT NULL,
"password" VARCHAR(20),
PRIMARY KEY("id"),
UNIQUE("username")
```

Table - Tracker

```
"id" INTEGER NOT NULL,
"name"VARCHAR NOT NULL,
"description" VARCHAR(1000),
"tracker_type" VARCHAR NOT NULL,
"settings" VARCHAR,
"user_id" INTEGER NOT NULL,
PRIMARY KEY("id"),
FOREIGN KEY("user_id") REFERENCES "user"("id") ON DELETE CASCADE
```

Table - Log

```
"id" INTEGER NOT NULL,
"tracker_id" INTEGER NOT NULL,
"timestamp" DATETIME NOT NULL,
"value" VARCHAR NOT NULL,
"note" VARCHAR(1000),
PRIMARY KEY("id"),
FOREIGN KEY("tracker_id") REFERENCES "tracker"("id") ON DELETE CASCADE
```

*Note: **settings** is valid only when "Multiple Choice" is selected as **tracker_type** in Tracker table. It accepts csv data directly. The table is not in first normal form however, it will allow fast access of data.*

API Design

There are 3 APIs available for this project:

- UserAPI
- TrackerAPI
- LogAPI

Architecture and Features

```
final project/
   ├── application/
         │ ├── __init__.py
         │ ├── config.py
         │ ├── controllers.py
         │ ├── api.py
         │ ├── validations.py
         │ ├── database/
         │ │ └── tracker.db
         │ ├── forms.py
         │ ├── models.py
         │ ├── static/
            ├── images/
            │ └── logo.svg
          ├── styles/
                │ └── style.css
         │ ├── templates/
            ├── add_log.html
            ├── add_tracker.html
            ├── base.html
            ├──home.html
            ├──login.html
            ├──registration.html
            ├──tracker.html
   ├── run.py
   tests/
      ├── testapi.py
   ├── requirements.txt
   ├── readme.txt
```

The project is organized in such a way that it can be scaled further without any issues. The controllers are in "controllers.py". There is a separate folder for static and templates. Static folder includes all the images, logo, etc. Template folder includes all HTML files. Forms are in "forms.py", database and models in "models.py". The API code is available in "api.py" file.

Features:

- *A complete login/registration/logout system*
- *CRUD on Trackers*
- *CRUD on Logs for each Tracker*
- *Trend line for each tracker with option to choose the plot date range. ● API for users, trackers and logs*

Video