**MODERN APPLICATION DEVELOPMENT-1**

**SELF QUANTIFIED WEB APPLICATION**

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**About me:***I’m Komal! I study in Hansraj College, DU. Pursuing a second degree from IITM because I’m very much interested in coding. I had a great time making this project! It really brushed up all my concepts and taught me so many new things.*

**Description**

Self Quantified Application: This application will enable users to track any metric or activity as per their needs. Users can make Trackers of activities and log its entry multiple times. The application then organises all their Trackers and Logs. It displays them along with creating graphs/trendlines and stats corresponding to the Tracker.

**Technologies Used**

The application is primarily built on Flask andFlask SQLAlchemy. Other technologies used are:

Flask WTF **-** For rendering and validation of forms

Flask Bcrypt - For password encryption of users in database

Flask Login- For handling user sessions (logging)

Matplotlib - For displaying graphs/trendlines

**DB Schema Design**

The database comprises of 3 Models of User, Tracker and Log. Schema for each is:

**User Model:** It stores the usernames, passwords and email of all the users registered through the app.

ID - Primary Key - Stores ID of each user

Username - Unique - Stores Username of all users

Email - Unique

Password - Stores the encrypted passwords of corresponding users

**Tracker Model:** Keeps the data of all the created trackers.

SNo -Primary Key - Serial Number of the Tracker

Title - Title of the Tracker

Type - Type of Tracker (Numerical type, Multiple Choice type etc)

Desc - Description of the Tracker

Date - DateTime - Stores the date on which the tracker was created/ last updated

Settings - If the tracker is of Multiple Choice Type, this column stores the options of entry values to choose from

User\_ID - Foreign Key - Stores the User who created a particular Tracker

**Log Model:** Used for logging all entries in a tracker.

LogNo - Primary Key

Tracker\_ID - Foreign Key - ID of the tracker whose log is being made.

Value - Log Entry Value (Example- 5 miles for a Running tracker, Happy for Mood Tracker etc)

Timestamp - DateTime - Time of log entry (User can change it)

Note - Any notes corresponding to the log entry (Optional)

Note: All columnsused are of Integer, String or DateTime type.

**Architecture and Features**

**Project Architecture:**

* All templates reside in “templates” folder.
* All images reside in “static” folder.
* The controllers and views are implemented in the main “app.py” file.
* Models are organised in “models.py” file.
* All form validation is done is “forms.py” file.

**Application Features:**

Core Features

* CRUD on Trackers

1. Users can create trackers of type: NUMERICAL, MULTIPLE CHOICE, TEXT
2. Viewing of User’s Trackers on dashboard
3. Update and Delete operations provided for Trackers

* CRUD on Logs

1. Create logs based on the Tracker type
2. Viewing of a particular tracker’s logs available
3. Update and Delete operations available for Logs

* Graphs and Trendlines - Graph corresponding to each tracker is provided for better understanding of Trackers.

Additional Features

* Proper Login Framework with User Authentication- Users can Sign up and Log in with Username (unique), Email and password. User Authentication is done and the corresponding dashboards are then loaded.
* Validation of Inputs- All input fields are validated in all forms.
* Password Security - With Bcrypt, all passwords are encrypted and hence security of application is increased.

**Presentation Video**

<https://drive.google.com/file/d/1GQ-PSE6KSD9AeoXdY7D16iJU3n7BrlX5/view?usp=sharing>

**Replit Project Link:**

<https://self-quantified-application.komalchamyal.repl.co/>