Konnect

40281448

Edinburgh Napier University - Advanced Web Technologies (SET09103)

1 Introduction

Konnect is social networking site for friends and associates to connect with one another and share updates with short posts. The site allows users to register, log in, view and update their profile with further information, like others' posts, and search for friends. The app requires a user to be logged in to access the features of the website, mainly for security, but secondly to add slight privacy for users and a sense of privilege for memberships.

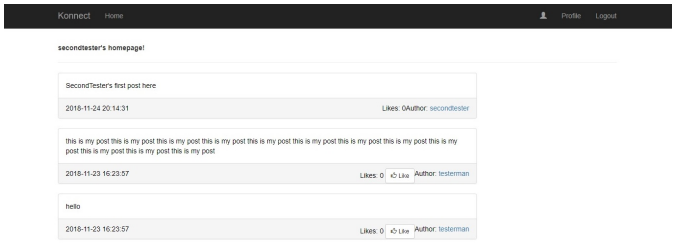

Figure 1: **Example home screen** - Shows recent posts from users

2 Design

Konnect uses a relational database to hold users information,their posts and likes, and their friends through SQLAlchemy in order to be able to store far larger amounts of data. As with the first coursework, the app makes use of template inheritance to greatly decrease the amount of code needed for the HTML side of things. Most of the sorting and data handling is done in the app with python and final variables are sent to the template as parameters.

The app relies on the user having a profile for the most part of the app, and as such, it is enforced that the user be logged in to access the deeper functionality of the website. Once logged in, users can view the most recent posts site-wide and interact with them by 'liking' them. The posts also allow the user to access the poster's profile, where from the user can add them as a friend, allowing them quick access back to them from the user's own profile. The relationship is also accessible from the 'friends' tab.

The url hierarchy, as detailed above, shows that users can navigate to the most frequently visited pages in a single click, through use of the navigational bar located at the top of the

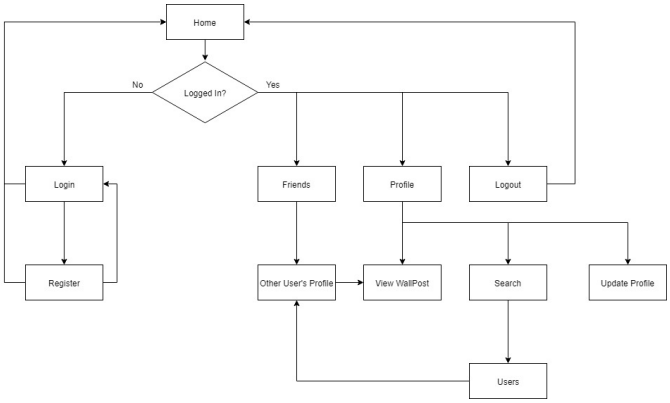

Figure 2: **Navigation Map**

screen. This bar is shown throughout the website, allowing users to quickly jump to and forth features with ease.

When registering and logging in, validation checks are performed to ensure correct formatting of data and uniqueness of usernames is persistant throughout. Users are asked to consent to their personal data being stored and processed in the use of the website for educational purposes, in keeping with GDPR and Data Handling guidelines.

When updating the user's profile, the approach of "Do not trust input from the client" has been heeded and as such, the filename of the uploaded image (assuming the file extension meets criteria) is stripped and and a 17 character, mixed numerical and ASCII string is generated and fixed with the given extension, before being saved into the static folder. The database then stores the path to the said file, where references can be taken from. This approach also ensures no two users share a profile picture and have the ability to change each other's profile picture as a result.

As the website deals in keeping users updated with their friends, there is no immediate need to store users' sensitive data, such as political or religious beliefs. Users providing their name can do so at their own leisure and it is not enforced that this name must include first nor last names, it is merely for narrowing down a search for a particular user. The only personal information that is required is a user's email address, purely for registration purposes. The email address serves as a backup recovery method, allowing the owners of the website to remain in contact with and easily identify the user.

3 Enhancements

3.1 Instant Messaging

In terms of improving functionality of the web app, an instant messaging feature would be the next port of call. This would be between two users initially, but would span into allowing groups to be formed, where the server would push messages to users when stored in the database.

With regards to keeping the database a feasible size, an approach to message saving implemented by the likes of Snapchat would be incorporated. Messages would perhaps last for several hours, after which time, unless a option was selected on the message itself, they would be removed from the database, thus freeing up space for other conversations and keeping response times to a minimum.

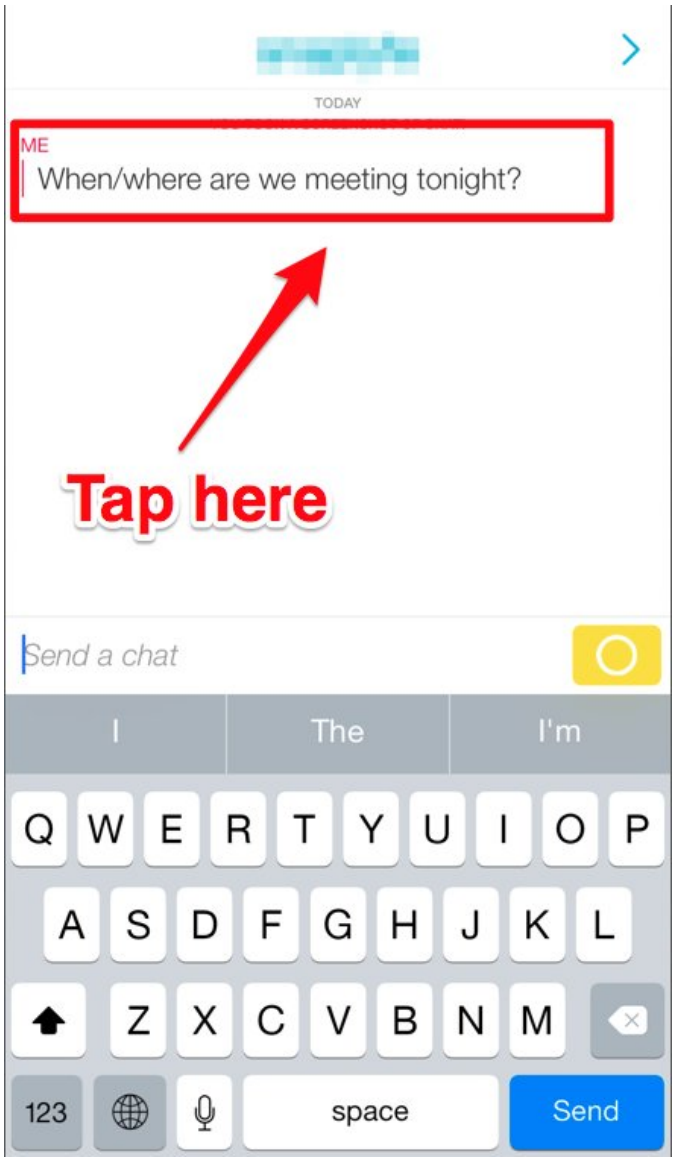

Figure 3: **Example of Snapchat's Method of saving messages**[1]

3.2 Two Way Friendship

A two way friendship option as standard would be another point of interest for further development. Currently users can add friends and quickly find them again, however, these friendships can also be one-sided. There are benefits to the approach chosen initially though, acting more like a follow rather than a friendship.

4 Critical Evaluation

Having set out to build a networking site for users to connect with one another, the web app performs as it should with the expected functionality of a basic social network. The website handles its errors, provides multiples routes to users, data remains persistant, and the website handles multiple users being logged in at the same time, to effectively keep up to date with one another.

4.1 Layout Design

Design of the actual layouts in HTML have not been given much regard due to the nature of the module, however this would be a point of improvement for the app, increasing readability and intuitiveness.

4.2 Database Design

The database structure could be improved further to give easier access to data and quicker responses from queries, once the database becomes larger. It has been noted that the database design is sufficient enough to perform the task asked of it at this current level, however, refactoring must be performed, naturally, should the data become larger in time or extra functionality be added or extended.

5 Personal Evaluation

Having no understanding of web app development before the beginning of this module, I am very pleased with how far my understanding has progressed throughout the period of time spent studying it. This is the first time I have chosen to incorporate a database with my app and can see the great benefits this holds.

I have discovered a subject that I very much enjoy and as such, find the time taken to understand certain aspects of it, less gruelling than perhaps some other modules. I have enjoyed the freedom to develop something I find interesting and believe that this has impacted my work in a very positive way.

I find myself more eager to develop my application with new ideas and plan to continue this on further than the coursework deadline for personal interest.

References

[1] M. M. Kircher, "Use this trick to keep your snapchat text messages from disappearing forever," Aug 2015.

[2] "Wtforms."

[3] M. Bayer, "Sqlalchemy."

[4] “Passlib.hash.”

[5] A. Ronacher, “Werkzeug.”