Leuphana University Lüneburg

Technological Basics II

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# Application Development

# Serenity: emotional wellness app

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## Methodology

This report contains information about the ‘Serenity’ app (a tool for emotional well-being for people with anxiety). The design of the application allows people to log their anxiety levels daily, as well as perform certain other activities which can potentially help them with their emotional state.

The first phase of the development included defining the application’s core objectives and features. As the primary programming tool, Python was used in the development process due to its readability and extensive libraries. The tkinter library was used to create the graphical user interface of the app. Additional tools and library (pandas, pygame) were utilized for data management and audio file handling. The background images for the application were created via generative AI ‘DALL-E’. The music used in the app was downloaded from the FreeSound.org website.

## Application design

In this section the description of the application will be presented.

On the **Home** page of the application, the user is greeted with the title ‘Welcome to Serenity’ and soothing ambient music playing on the background. This page is designed to give users who do not have an account yet, an ability to proceed to the **Registration** page, and users who already created an account, to proceed to the **Activities** page.

Upon clicking the ‘register’ button, the **Registration** page opens, where users can put their name and username in the respective input boxes. The button ‘create a new user’ verifies whether both of the required input boxes were filled and submits the data. The data is then stored in the csv file.

Logged in users can access the **Activities** page – the main page of the application, which gives access to the key features: log anxiety level, view past logs, meditation practice and breathing.

After clicking the button ‘log anxiety level’ on the **Activities** page, the users can answer the question “How high is your anxiety level right now’. They can select one of the three: ‘low’, ‘average’, or ‘high’, and the buttons submit and store these logs to a csv file.

The users have access to the anxiety logs via the button ‘view past logs’ on the **Activities** page. This button which opens the popup window with previous logs. However, the displayed data is specific to the current user only.

Additionally, on the Activities page the users can proceed to the ‘Breathing Exercise’ as well as ‘Meditation Practice’ by clicking respective buttons. Both of these features are aimed at providing the users with means to reduce their anxiety levels.

Overall, the application has 5 pages, 4 specific custom features, navigation (via ‘homepage’, ‘close application’ and ‘go back’ buttons), the sign up / login functionality, and background music.

## Limitations

The main limitation of the application is the current data storage approach. For data security reasons, more advanced solutions need to replace the current data storage implementation with the csv files. Additionally, the application was developed and tested on a machine operated by macOS. Therefore, additional testing for Windows operating system is required.

## References

Some of the code turned out to be more complex than expected, therefore additional code guidance was needed for certain functions in the app.

These functions include: ‘view_past_logs’ (app.py file, code line 357) and ‘log anxiety levels’ (app.py file, code line 485). The solutions for the implementation of these functions were found on websites like ChatGPT, StackOverflow.

Other functions were implemented using the study materials and the source code we were provided with within the study process.


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