Python Project

[Company name] | [Company address]

PYTHON aPPLICATION FOR MESSENGING

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# Project Background

Due to the increasing use of digital communications and the increase in concern for privacy we have been task to develop an application that allows a secure form of communication between the executives of our client. This application must be able to login into a login server and must be able to send and receive a message or file. The client must be able to their profile and edit it.

# Features Developed

Features that were developed for the application are as follows:

Login

The user can login with their username and password. The password is hidden from the client as they type it into the submission box. This adds a higher level of security as the risk of someone seeing the password decreases.

Logout

The user once they are logged in can logout of the applications and they will appear as an inactive user due to this

User Profile

User can view their profile which has their full name, position, description, picture, and the last time the profile was edited

User Profile Edit

The user can edit their full name, position, description, and picture.

See users online

The users can who is currently logged in

Send and Receive and See Messages

The user can send messages and receive messages from any other user.

Send and Receive Files

The user can receive and send files to any other user.

Profiles

The user can see other people’s profile and others can see theirs

Databases

Databases are used to store the users who are currently reporting to the login server. They also store the messages being sent and received.

# Issues During Development

Network Issues

Several issues can up during the development phase of the application most notably being the restrictive host and requesting from other people’s APIs. This makes testing particularly difficult when you want to send and receive messages we someone is on their laptop but cannot due to the network restrictions.

Accounting for other’s APIs

Interacting with other user’s API become very hectic as it become apparent that errors could crop up because of many reasons. Many times working APIs on both my side and the other users would break due to a multitude of reasons.

# Improvements

Usage of databases made the keeping record of the current user who are online. This made it so it was easier to get the ip and port of the user without having to sort through a text file. The Databases made keeping record of the message being sent and received much easier to record and access to display to the user.

# Methods of Communication

The usage of mainly peer to peer for our applications is very beneficial as it reduces the cost and need for a central server to handle the information. The suitability of using this for a internal messaging web applications is very high. It is low cost, and low resources intensive and will appeal to a client looking for a simple internal messaging software that does not require a central server to be setup. For our scenario where only less than a hundred people are needed to communicate with as such setting up a central server is not necessary.

The protocol used to communicate with the login-server is minimal and such is low weight making in clear that the login server is not central to the application’s functionality. The protocol for the application is suitable as it is not overly complicated and only requires a few required values to be sent.

# Suitability of Python for Web Applications

Python is a very suitable tool for web applications due to it being a high-level programming language. It abstracts a lot of things for the user and so the user has less to worry about. In addition python is a very good starting point for people who want to get into coding and web development.

# Improvements for future development

The future improvement to my application would be the user interface and the security of the program. Currently the user interfaces are using only html and very little JS and CSS. In the future I would like to improve the look so that is more inline with modern website design. This would make the user experience much more comfortable and will make the program more professional. The second improvement would be the encryption security. I would like to add this as encryption is more increasingly the norm in the modern world. With large cybersecurity leaks in previous years I would like to take the opportunity to develop basic encryption to prevent information leaks.

# Conclusion

My final thoughts on this project is that it was very challenging as it required to combine many different languages and figuring out how they interact with each other. There were issues with the networking making testing difficult but again it allowed interaction with the other developers. This helped share knowledge and ideas between each other.