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CSC 520
Capstone Outline

webb

Project Description: webb is a web application with a focus on security for the user. The user will have the ability to import and export files and photos securely by enabling password locks on their data using secure encryption methods. Account creation has enhanced strict security specifications, making anyones account more secure with the help of two way authentication through a users email, and the use of multiple security questions with case sensitive responses.

Target Users: Customers whom would like to store their information securely, while knowing they are the only ones viewing and accessing said information. Managing data with security and confidence.

Security Features: Password requirements for a new users account will have a minimum requirement of fourteen characters and a maximum requirement of one hundred characters, requiring at least one capital letter, one number and one special character. The user will have the ability to set password locks on all their data once imported; and all passwords secured with account creation/login as well as encryption passwords set on files, will be secured by a PBKDF2 algorithm with a SHA256 hash. This ensures that passwords are stored securely, considering that to break the algorithm it takes an enormous computation time by a machine. If a file/document/photo is imported, the user can lock the contents with a custom set password. If a user cannot open said file due to not knowing password, the only option is to delete the file. The purpose of this is for the user to understand that they can secure their files as long as they know their credentials. If a user wants to export a file that is password protected, the password protection must be removed on the respective file before doing so. The app will also have two factor authentication with every account signed up. Whenever a new account is made, they will verify their email address with a code that is sent to them, which they must enter into the app within sixty seconds. The user will also have the ability to setup security questions with their answers being case sensitive. The purpose of these security questions is to help if a user forgot their password. When a new account is created, they will have the ability to create three to eight security questions to help secure the account and give them the option to have more security questions than just three. The app will also feature History, that will track everything that happens within the app and related to the account. The purpose of the History feature is for the user to be able see what changes are made during log in, as well as if the account has had an attempted log ins.

Data Management: All data management portions of the app will be stored within a database which includes account information, imported files, and folders created within the app. The database will also save the IP address for users whom have logged into the web app. Doing this allows the app to have the two factor

authentication system; if a user is signing into an IP that is new, a code will be sent to their email to be entered for login.

Development: webb will be created with the Django Framework using Python. Django is a free Python framework that helps with not only front end/back end development, but streamlines development by being fast, secure, and dependable. Django is used in development for major apps such as Instagram and Spotify, and will help make **webb** a unique, fast and secure data management web application.