Secure Software Design Final Project Design Document

Purpose:

Password management is paramount to any well secured system, and this can become especially difficult when the need arises to interact with a wide variety of systems. Managing individual passwords for a growing number of systems is a problem that a wide variety of people face. This project will act as a management system for an individual and their passwords, storing them in a secure manner while maintaining reasonable levels of accessibility to the passwords contained within.

Components:

Utilizing the Flutter framework and Google’s Firebase system, users are able to sign up for the password manager using an email address and master password. From there, users are able to add account names and passwords to the Firebase database. The stored passwords are locally encrypted using a dart implementation of the Salsa20 encryption algorithm with dynamic key generation based on user input. The corresponding account names are displayed on tappable/clickable cards. Upon tap or click, the user’s password is decrypted utilizing their dynamically generated key and is copied to the clipboard for usage outside of the password manager app.

Logging has been replaced by Firebase’s logs and analytics. They provide a much more in depth suite of usage information than any log system that I could have implemented within the allotted project time.

A user interface has been put into place that allows for easy navigation of the app.

Scope:

This application’s scope has grown from an individual user on an individual device to being able to service many users across multiple devices.