**Milestone Two: Software Design and Engineering**

The artifact used in this module in an application I created as a mobile event tracking app, which is designed and developed for Android smartphones. This project was the final project assignment of CS 360 course that was created in April 2025. This project was developed in Android Studios app using java as its main language. It makes it simple for users to add, view, and remove events as well as set up accounts and log in. To remind users of upcoming events, it also has a feature that asks for permission to send SMS notifications. The app is a useful and efficient tool for anyone who want to keep track of their schedule because it is supported by a database that holds both user and event information.

**Inclusion of the Artifact**

I chose this artifact since it was one of the most exciting and complex projects I worked on. Also, it allowed me to get actual experience with both frontend development and backend database management. My skills and abilities are demonstrated in this project based on following:

* By adding methods of creating accounts and login, I put user authentication into practice.
* I created a straightforward user interface and linked it to a working database.
* I worked on data persistence, which permits the saving, changing, and deleting the events.

Some of the planed enhancements were made in the artifact. The artifact was improved in the following ways:

* Input Validation: Not letting users to leave the event fields empty. Input from the user is checked to make sure it is valid.
* Security Enhancements: I included basic security features like saving unique usernames and finding duplicate users. In the future, more advanced functions like password encryption can be included.
* Database Optimization: Enhancing the database structure for more reliable and effective event management.
* Error Handling: Including helpful messages to help users know what’s wrong, if login or event creation does not work.

So, with these improvements, I achieved some of the outcomes I aimed for.

**Reflection**

I learned how various components of a mobile app functions when working on this project. For me, using the application was a great learning experience. I learned how user data is stored and how mobile apps communicates with databases. Additionally, how to combine different screens and functionality to create smooth user experience and the value of continuously testing each component. There were some challenges that I faced while developing this app. Some of them are:

* Fixing errors and issues when the application did not function properly.
* Resolving little but important problems, like invalid database queries or missing permissions.
* Ensuring that when users rejected access, the SMS authorization logic would not cause the app to fail.

This project gave me more confidence in my ability to create mobile applications and increased my understanding of the how the frontend design and backend functionality works.