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Mobile Programming

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ShredLog

ShredLog is an android application designed for surfers and snowboarders to log and keep track of their sessions. Users can record location, conditions, ratings, and notes, with data being stored locally on the device. The app has a dark mode feature and a simple user interface for managing sessions.

The application implements the Model-View-ViewModel (MVVM) architecture, which divides the application into three layers. The model layer consists of the Session data class and SessionManager, which handles the data representation using DataStore with JSON serialization. The view layer comprises three Jetpack Compose screens: HomeScreen for adding sessions, SessionListScreen for viewing all sessions, and SettingsScreen for app configuration. The ViewModel layer, represented by SessionViewModel, manages the UI state and coordinates between the View and Model layers while ensuring data survives configuration changes such as screen rotations. This separation of jobs improves code maintainability, testability, and scalability.

This application was built using the Kotlin programming language with Jetpack Compose and Material 3 for the user interface. The MVVM architecture provides the structure and the Jetpack Compose handles the navigation. The DataStore stores sessions as JSON while the settings preferences are stored simply as native types. The project includes JUnit unit tests for verification and uses Git and GitHub for version control.

This project originally planned to display a satellite image when given coordinates, however time constraints and API compatibility problems halted this idea. The decision was then made to pivot to a session tracking app aligned with personal interests to allow for more focus on core Android development.

This project allowed for many lessons to be learned. The importance of proper architecture became clear throughout the course of this project. MVVM significantly improves code organization and makes applications easier to understand and maintain. Also, learning to pivot when faced with technical blockers became an essential skill. Despite not following through with the original plan, the final application successfully meets all the requirements.

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