

INTRO/ABSTRACT

We developed an Android mobile app using the SDLC approach to enable users to log their trips. Users can enter trips they have taken in the past and track their current trips with the travel distance and time being recorded via GPS. The app was built with the Flutter framework in the Dart language on Android Studio.

METHODS

We utilized Flutter to manage both appearance, user interaction, and to guarantee consistent UI elements. We followed a three-layer architecture: the presentation layer, which handles all UI elements; the application layer, which contains the core logic including GPS tracking and list management; and the data layer, which defaults to local device storage; cloud storage is available but opt-in only for privacy reasons. For GPS functionality, we integrated the Geolocator package to obtain user coordinates and calculate distances between locations. We applied git for version control and collaborated on GitHub through issues and pull requests.

RESULTS

The application comprises several crucial components: EntryView, EntryListManager, GPSTrip, and StorageManager. EntryView serves as the main interface for users to add, edit, and delete entries. EntryListManager handles the management of Entry objects, facilitating filtering, addition, removal, and retrieval. GPSTrip oversees GPS functionality, managing the start, end, and tracking of trips, as well as distance calculation. StorageManager is responsible for data storage: simply read and write operations. Additionally, the app ensures necessary location permissions are permitted and manages user interaction primarily through dialogs.

Straightforward and flexible personal tracker for various trip properties.

