

# University of Arkansas: Campus Map

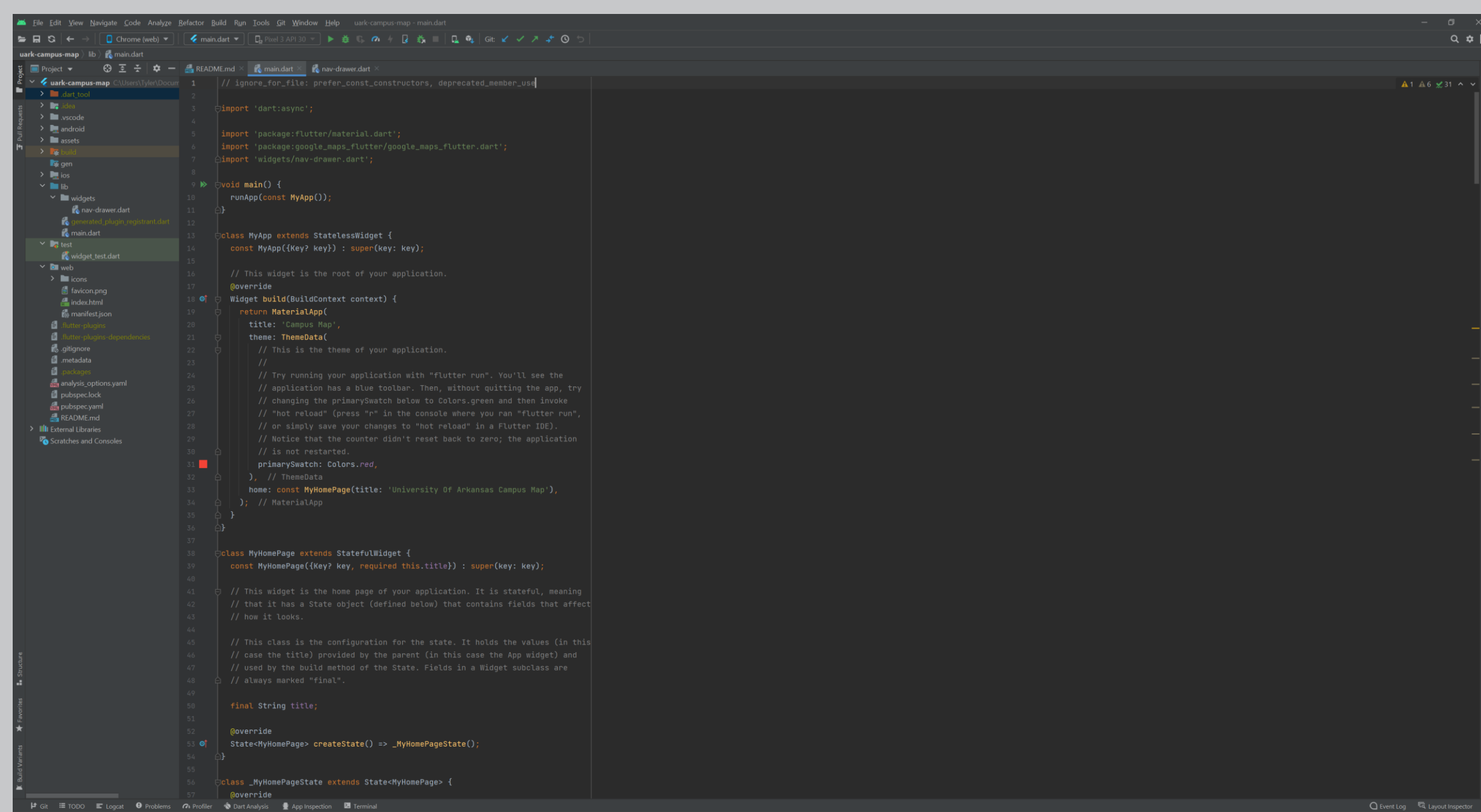
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## Introduction

The goal of our project is to design a campus map application that focuses on the University of Arkansas, enabling users to navigate around campus easily. The current campus map is only available on the web and is very cumbersome to use on mobile devices. Our application will feature interior views of select buildings as well as the ability to search for specific buildings by name or building code, along with other unique features.

## Software

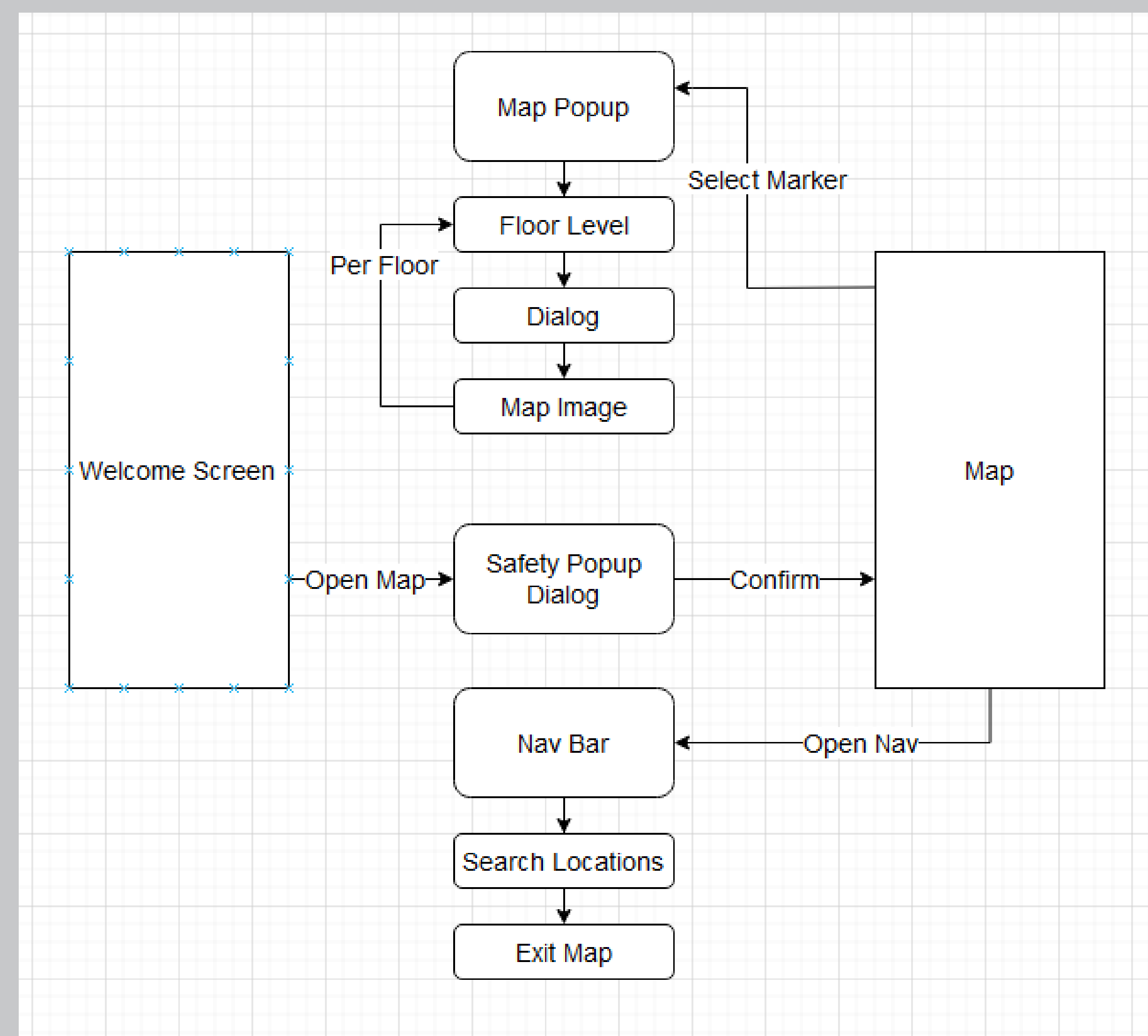
We developed our campus map using Android Studio. This IDE made it easy to implement the Flutter framework, an open-source framework by Google that allows us to build our application. Using the Dart programming language, this framework allows code to be compiled to many devices, like the web, Android, and iOS. Another benefit of Flutter is "hot reload," which allows us to build and iterate through code quickly. With this, we can see changes while coding almost instantly. The final component to our project is the Google Maps API. This platform from Google allows developers to use Google's tools to create real-time map experiences. With Android Studio, Flutter, Dart, and Google Maps API working together, developing our application was seamless.



Android Studio IDE

## Design & Architecture

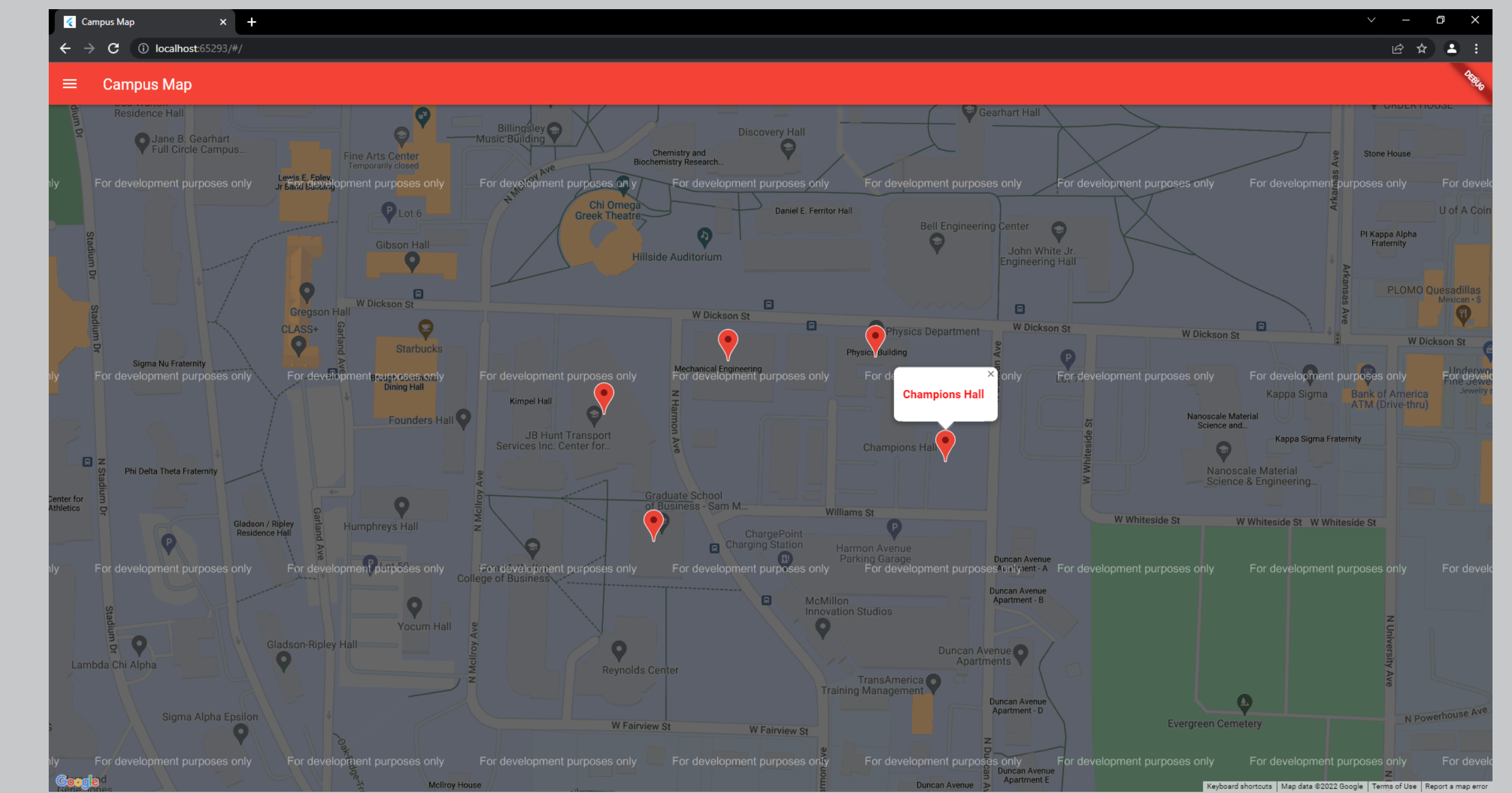
We started our campus map design by implementing a welcome screen, safety pop-up alert, and Google Maps API as the map foundation for our building markers and images of interior views. The user can access the floorplans of the buildings on campus by clicking on the building marker or using the navigation side bar that searches for specific locations. One of our goals was to make our app familiar, easy to use, and intuitive by following designs of common applications.



High-Level Architecture of the Campus Map

## Results

This screenshot of our app shows the Google Maps API being used for the map, the side menu at the top left, the search bar at the top right, and the custom markers in the middle.



Main View of the Campus Map with Features

## Conclusion

The software tools used to create our application made it easy to collaborate with each other. There are many resources online on how to use Flutter, which was very helpful in creating different functions of our campus map. Overall, we reached our goal of creating an alternative, easy-to-use map of the U of A for students, parents, faculty, and guests.

## Future Work

Moving forward, we plan to improve our taskbar that allows the user to search for specific university building codes. We also intend to clean up our code to provide a more readable source code. Implementing a GUI to support the interactions for saved routes across campus with the appropriate server-side structures is another future design goal. Finally, we also want to expand the interior views to all buildings on campus.