**Basic Design Document**

**This app follows MVVM architecture (Model, View, ViewModel)**

**A diagram of a service

AI-generated content may be incorrect.**

**Folder Structure:**

A screenshot of a computer program

AI-generated content may be incorrect.

*/Dependencies:*

* Contains external libraries.

*/Models*

* Contains the data structure for the Zip Code API response in ZipLookupResponse.

*/Platforms*

* Platform specific code for iOS, Windows, Android and MacOS. Only focusing on Windows for this project.

*/Resources*

* Stores images, fonts, styles, etc.

*/Services*

* Responsible for data access and the API call to the Zip Code API with HTTPClient. I also have an interface which is a bit excessive for this simple application.

*/ViewModels*

* Handles the UI state, data binding, and the commands that the Views utilize to interact with app logic. Allow automatic UI updates when data changes.

*/Views*

* Holds the UI XAML files that bind to the ViewModels. Specifically the .xaml files describe the ui and the xaml.cs declare the bindings to the ViewModels.

*App.xaml*

* Defines global styles and resources.

*AppShell.xaml*

* Defined navigation structure of the application. In this case it is from StartPage.xaml in the Views folder and that later navigates to ZipCodeDetailPage.xaml.

*MauiProgram.cs*

* Entry point to the app. I inserted some dependency injections here which are a bit excessive for this simple application.

**General Flow of the Zip Code Application:**

The user starts with StartPage.xaml which binds to StartPageViewModel. The StartPageView model has multiple parameters that bind to the UI of StartPage like labels, enabling submit button upon correctly formatted Zip Code entered, etc. An additional purpose for StartPageViewModel is for Zip Code validation, updating any error messages, and fulfilling the API call on submit. After submitting, StartPageViewModel passes the data and navigates to ZipCodeDetailPage.xaml.

Similarly, ZipCodeDetailPage data binds to ZipCodeDetailPageViewModel to display the Zip Code data returned from the API. The user can navigate back from this screen to StartPage and input another Zip Code they want information about.