# Is It Possible

## technical research

### The Platform:

#### We’re planning to create a phone app as our product. It seems like the ideal platform, partly due to the data we want to collect but also as people tend to use their phone almost twice as frequently as their desktop or other devices1.

### Building the App:

#### For the Android app we will use Android Studio. This is an open source development platform made by Android. The main available programming languages are Kotlin, Java and C++. The studio software is versatile and available on MacOS, Windows, Linux

#### To create the IOS app we will use Xcode. This is the development platform made by apple for creating iOS apps. The main available programming languages are C, C ++, Java, Python, Ruby, Swift. This software is unfortunately less versatile and only available for MacOS.

#### Both Android and iOS offer their own software development kits (SDK) to aid in the development of mobile applications. Both offer the flexibility we need to develop our application allowing for the integration of multiple API’s. A key feature would also have to be the use of a secure Bluetooth connection, allowing for our application to receive data from our OBD system.

### Data Sources:

#### To make our application we will need extensive data sets collected from several different sources. The first will be current location information, location history and work/home locations. We will use Google Maps APIs2 and in-device GPS for this, the only data which will difficult to obtain will be location history as Google Timelines does not currently have an API. This is okay though as this is not an essential part of our product. We will also need a Miles Per Gallon API3 which is responsive to a majority of different car makes and models. The third required data set will be public transport routes and times, luckily Google also provides this as an API4. Our final data source will be on global warming, we will need relevant and up to date data so that we can work out how much each user is contributing towards global warming, and more specifically the melting of the North Pole.

#### Google Maps API - https://developers.google.com/maps/documentation/android-sdk/intro

#### In-device Location

#### IOS - <https://developer.apple.com/documentation/corelocation>

#### Android - <https://developer.android.com/reference/>

#### MPG API - https://www.programmableweb.com/api/fueleconomygov

#### Google Transit API - https://developers.google.com/transit/

#### Environment data- Self found and created

### OBD Device:

#### OBD (On Board Diagnostics) is used to measure important data from a car such as emissions, mpg, distance, warnings and how full the fuel tank is. We will then take this raw data and use an OBD2 converter such as OpenXC5 to convert it into a readable format. This data will be an important source of information such as car make and model, how full fuel tank is and the estimated mpg. This will be very important to calculating how much the user is spending on petrol, their impact on the environment and how far they travel to work every day/how long it takes them.

### References:

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