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### Feasibility Report

For our project, we have decided to create an application that makes use of the Google Maps API. We will use this API to mark locations of personal protective equipment (PPE) such as masks and other helpful information to students on campus during the Covid-19 pandemic. This will be a continuation of a project that was created last semester on a web browser. We will make it into an Android application for ease of access to those who wish to use it on their smartphones in real time on campus.

The target audience is those who will be living on campus, going to classes, or simply visiting the SEMO. However, with a few tweaks, the app could very easily be used on any other campus across the US or the world in general as Google Maps has information on many parts of the world. The age and demographic targets are varied as the age and demographics of college campuses are extremely varied, but it would mostly target those in the 18-30 age range with a few others outside of that age range having interest in the app. As far as we're aware, there aren't any other services that show precisely on college campuses where the PPE is available, so we don't believe that there are any other competitors for this same type of project. This could reach our audience by presenting the app to the college campus directors and having them advertise its usefulness to students through emails and other social media outlets. Ads could be included to give a revenue stream to the app if the campus wished, but wouldn't really be necessary and might even cause more problems for students trying to use the app. Every year the app would gain more loyal customers as new students would need to know where the PPE is located until

the pandemic is in a place where it is under control and PPE is no longer necessary. The competitive advantage comes in the ease for college campuses to customize the app to their own needs and where they have their PPE options located for students.

To complete this project we will need to first create the Android app UI to best hold and display the information to the users. This will be done using Android studio. The next step will be to take the Java code that was used in the website and format it to work well within the Android app space. The final step will be to obtain a Google Maps API key that will allow us to integrate the information into our application. Once this is done the app should run and display the map with the pins showcasing where the PPE and other medical information is located. At the time of writing this report, we will have about 2 months to complete the project. In order to ensure quality control of the app, we will be doing extensive testing of each new addition to the app. This is made fairly easy within Android Studio as you are able to run an emulation of what the app will look like on specific phones and devices running Android. Utilizing this functionality, we will be able to ensure that our app looks how we intend it to, and more importantly, runs how we intend it to.

With each app and program created, there are always potential risks involved; however, with our app, the main risk would be data protection in the form of possible location data being received, as well as a possible data stream to the device. We will be using a google maps API key as mentioned before, but if the key is left exposed, the security risk will be minimal because the key cannot be used without the SHA1 fingerprint that we will keep hidden and secure. As with any program requiring input, the endpoint security will mainly focus on the input from the user device. Seeing as the app will not require much more than the input from the user, the security will have only a couple of main focuses necessary, leaving room to improve one of the focus

points as well. With an increased focus on a smaller amount of focus points, security will thereby be increased substantially more than that of an app requiring more than just a single input at a time, or an app that needs to store sensitive personal information. Were this a paid project as well, only needing to focus on one security risk would save money in terms of labor costs. Finally, another risk is the lifetime of the project. Currently in Cape Girardeau county, where SEMO resides, a health task force will soon meet to discuss the necessity of masks, and they may even possibly move the county from a mask “mandate” to only being “strongly suggested.” However, we predict that SEMO will require PPE longer than is fully required just to be safe and as long as SEMO requires masks this project will retain usefulness. The project can also be updated or tweaked to serve a different purpose when the time comes. However, SEMO already offers on their website a detailed map containing quite a few useful objects and locations around campus.

Some benefits of using programming API software include promotion of consistency, simplified learning, and programming benefits and simplicity. Operating environments, such as Microsoft’s Windows or, in our case, Google Maps, offer an API to enable programmers to write applications that are consistent with that operating environment. This can help to prevent issues such as the program not being able to run properly, or allowing a program based on the operating environment to have longer life and fewer updates due to a consistency from the API. Programmers are usually posed with a variety of challenges. Of one these challenges may be compatibility with an operating system. An API allows the programmers to overcome this challenge as it produces the protocols for creating the programs. Programmers (our group included) will have an easier time creating a product adhered to the API. The API functions like

the building block and all you have to do is to organize these building blocks together. There are several sample applications that you can use to assist you start up.

Even though an API is essentially made for programmers, it is beneficial for our target audience of the community of college students, as well. This is mainly due to the fact that it ensures that each program that abides by standard API is going to have a similar interface. This will make it simpler for new users to learn how to use the program. We can conclude that using API in developing our software project will hopefully be able to help us achieve our project goal, and promote a better app and trouble-free program environment.

In conclusion, we believe that extending this project to an Android application will help students and faculty, along with anyone else visiting the campus, to accurately find the most updated locations where PPE is available. The apps UI will be created using Android Studio. We will also need to obtain a Google Maps API key that will allow us to integrate the information into our application. Our main two security risks of this application is the breach of personal location data, and the endpoint security focusing on the input from the user device. The SHA1 fingerprint working along with the google maps API key should help mitigate the personal location data risk. With only a few security risks, increased focus on the endpoint security should help mitigate that risk as well. There are many benefits of using this API software, including promotion of consistency, simplified learning, and programmer benefits. Using an API software that ensures it will abide by a standard API will also make it easier for new users to learn how to use the program. While continuing to navigate though this pandemic, it is important to make this information as accessible as possible to as many people on campus as possible. This project has the potential to reach beyond just the SEMO campus and to be adopted by other highly trafficked

areas and facilities across the world as PPE continues to be needed to slow the spread of this virus.