SpotMe: A Parking Space Finder App
Feasibility Study

INTRODUCTION

The increased demand for parking and the limited spaces on the Fresno State campus has created a frustrating and time-consuming environment for all students, faculty, and staff who commute by car. Our project, the SpotMe mobile app, aims to ease the task of finding open spots around campus through a mobile application that tracks and provides real-time data on parking space availability. The purpose of this feasibility study is to gauge the achievability of our project based on what technologies we can utilize and learn if necessary as well as desirability based on feedback from other students who may find value in such a project.

TOOLS AND RESOURCES

In an effort to create a quality mobile application, we researched various technologies to create an optimized solution stack. For the front end, we have chosen React Native as the framework because of its lightweight, cross-platform compatible Javascript implementation and robust API platform. For the back end, we plan to use MongoDB for data management and Django as the primary server-side framework due to their relative ease of use and flexibility; additionally, we plan to use the Google Maps API to display campus parking spaces and gather real-time traffic analytics. Finally, to allow real-time communication with an always-on service, we intend to incorporate cloud hosting with Google Cloud Services to ensure a reliable and consistent user experience and to reduce platform diversity due to our existing plans to use the Google Maps API.

SURVEY RESULTS

Note: the survey data can be found on page 2. The data from our survey results returned rather conclusive results across the board. **Figure 2**, for example, shows that 64.4% of users agree to strongly agree that parking is an issue; this alone supports that our project is an effort worth pursuing in the first place. In terms of opinions regarding safety, **Figure 3** indicates that 64.5% of users (both pedestrian and driving) express some amount of discomfort when traversing through congested parking lots. Finally, **Figure 4** showcases that 51.1% of users generally feel inconvenienced by the congestion caused by the parking situation. Overall, there is a clear indication that SpotMe can potentially alleviate an irritation experienced by a sizable portion of CSU Fresno students.

CONCLUSION

Our feasibility study research concludes that pursuing the SpotMe mobile application project is 1) realistic given the existing technologies we can use for our solution stack, and 2) desirable based on survey feedback highlighting the severity of the issue we are trying to address. While we may need to make adjustments to the exact specifications of how the application will operate, we are confident that this is an achievable prospect and are willing to proceed forward with its development.

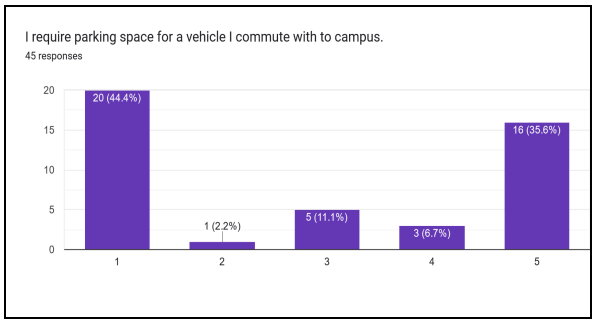

Figure 1: Parking Space Demand

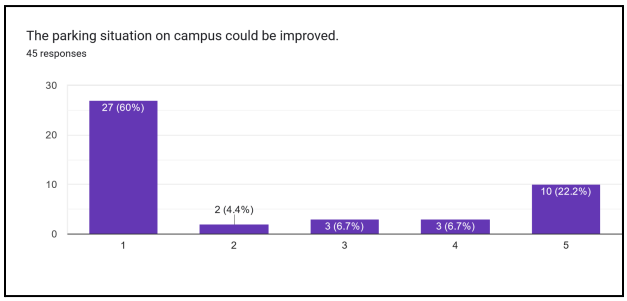

Figure 2: Opinions of Current Parking Situation

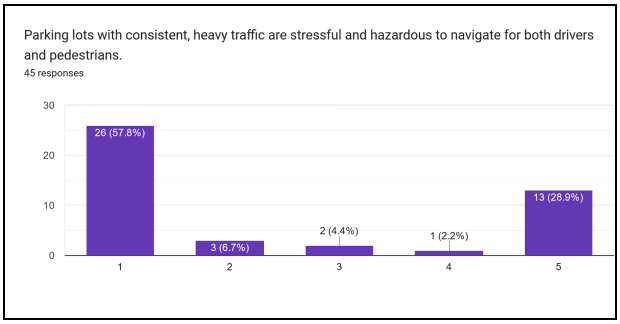

Figure 3: Parking Lot Safety Concerns

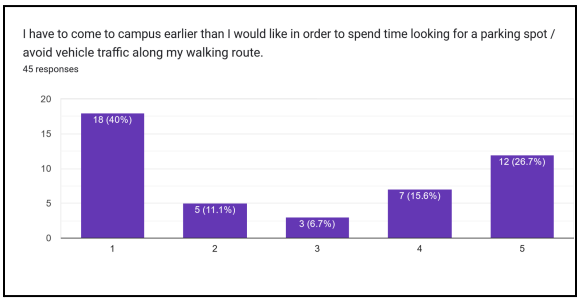

Figure 4: Convenience Impact from Parking Traffic

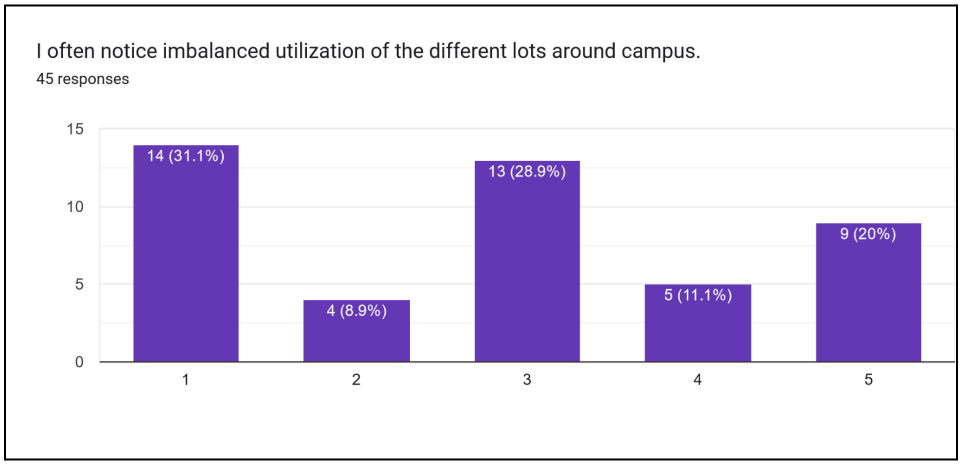

Figure 5: Opinions of Campus Lot Usage Imbalance