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**Statement of Motivation**

The most important motivation for choosing this project is to offer something to the people that they would use on a daily basis. This project has both a meaning and a value, and it addresses a problem that does exist. It gains its value from the fact that owning a car is expensive. As a result, this app offers the car owner a way to cover some of its expenses and offers the rider a cheaper option of transportation. Also, this project has the potential to be monetized or even be acquired by another company which gives us the motivation to work hard on it.

Another big motivation is the challenges and technical problems that we have to solve during this project. These challenges will push me to learn something new every step of the way as we are going to use some technologies that I do not know about or know little about. Potential challenges would be dealing with real money transactions and payments, therefore security is a huge factor here. Other factors include using google maps API to create real-time navigation and using firebase to create push notifications.

Finally, I'd like to add that Software Engineering is my favorite branch of Computer Science, and this project would help me put myself on the right track to a brighter future. It would also be a great achievement to have a big project like this on my resume to show future employers what I am capable of, especially in a team environment.

- Ahmed Elshetany

Since my first day in freshman year, I have always had the ambition to develop an app where it could have the potential to become an actual product in today’s market, in addition to the added benefit of having a large project made up of various languages with real life advantages and uses with my name on it. I have always been looking forward to Senior Design as it is the course where one can be innovative alongside a group of dedicated individuals that can help see the project through to the end. While developing this application, not only will I be adding my own touch to the project, but I will also be gaining a substantial amount of knowledge of how applications work and how completion of tasks take place on both the frontend and backend.

The systematic approach to completing a project is often the product of trial and error when inexperienced individuals are working together. Despite the potential for an experience gap within the group, we are lucky in that we can capitalize off of various member experiences as some of us, including myself, have been privileged enough to work or intern in the field. As such, our emotional intelligence stands to gain in an unlikely environment, which is significantly opportune. This will certainly carry over into our future real-world experiences in the global job market, and I look forward to relating back to all that stands to be learned from this very project.   
- Hussein Noureddine

Let me start from the beginning, from when I chose to major in Computer Science. This choice was an easy one for me because ever since the beginning I was extremely attached to technology and fascinated by the things people have created using it. This choice also opened up many opportunities I never thought that I would’ve had. From learning various programming languages, meeting like-minded individuals, and even working on some very intriguing and exciting projects. Now comes the time for Senior Design! Where we as students get to design, create, and implement something big. Something that we’ve never created before. And to me this is very exciting. From all the projects I’ve worked on throughout my journey in university, this will be the one that shines.

My team’s idea of making a carpool app interests me a lot. I am all about going green and saving the planet, so creating something that will give people an option to change the way they regularly travel while also contributing less to their carbon footprint is a win-win situation for everyone. And this carpool app will be extremely inclusive, something that anyone anywhere can use. Right when we decided for this to be our Senior Design project, I immediately started brainstorming. I have many ideas on what technologies we can use, features the app can have, and even what the overall design of the app will look like. This is just the start, but I already know that this will be an exciting journey for me and my teammates. We will come across many hurdles throughout our designing process, but I assure you that there will be nothing in our way that we can’t jump over.  
- Kavi Chapadia

Senior design class is the most important class in computer science major, where I can implement the knowledge acquired during the first three years of my undergraduate courses. Therefore, it is important for me to participate in a project where I can learn some of the most demanding technologies in the market. This will help enrich my experience, knowledge and enforce my resume. A strong and diverse team is also another factor to success and come up with a good working project. Each member of the team has his own strengths and skills. I like to learn from others which I believe is an effective way to improve my knowledge and learn new skills.

I was always fascinated by application development, especially the ones that deal with GPS navigation, payment process, security, chat, and notifications system. kärpōōl is an interesting project for sharing a ride between a driver and rider(s) heading to the same destination for a reasonable cost. It has all features that rideshare apps have and many challenges to solve, which will be a great learning opportunity. I am motivated to create this app with my team and enrich my knowledge, sharpen my skills on how to develop such apps and learn how to mix between many important features, programming languages, and technologies.  
-Taoufik Laaroussi

At the start of SD1 I wanted to choose a project I thought was interesting and a specific field in which I could gain expereince. Having a strong interest in the project I’m working on helps me to stay motivated throughout the process. When our team discussed different ideas for our project, the Karpool app was the obvious choice. The way we layed out the project allowed us to do a little bit of everything. The project includes a fully functional website, iOS and Android applications, and third party APIs.

While there are other ride sharing applications in the market, we feel Karpool brings something new. Uber, Lyft, and other applications are called ride sharing apps, when in reality they’re taxi services. Karpool connects users and drivers who both need to go to the same destination, while keeping the price down. We think that Karpool will not only be a successful seniors design project, but a viable project to continue after we graduate.   
- Steven Jimenez

During my first two years of high school, I was mainly interested in mechanical design and did not have any knowledge about programming. However, after enrolling in an entry level computer science and dabbling in Apple’s new Swift programming language, I recognized my passion for software development. Still unsure about my career path, I enrolled at UCF as a mechanical engineering major. Over time, as I transitioned to incorporating other programming languages and technologies into my software projects, I decided I would like to guide my career path towards web and mobile app development and made the switch to a computer science major.

I chose to be part of this project because I am sure to put in the effort because it has a real purpose to solve real problems. I realized in a previous semester that it is nearly impossible to find the motivation to work on a project one does not find meaningful. Even if the graduation is at stake, the project’s quality is guaranteed to be stunted by lack of interest. In addition, this project will require a mobile app and a web front-end; both of which I am interested in learning more about.

- Chris Foreman

**Project Description**

Nowadays, everyone uses cars to travel from place to place. Whether it be your daily commute to work, driving cross country for vacation, or even going to the grocery store located right around the corner. Notice how we will almost always resort to using cars to accomplish these tasks, no matter the distance being short or long. And the main reason for that is convenience. Convenience plays a major role in people's everyday lives. But this comes at a cost. The cost which is destroying our environment and causing global warming.

So, our idea is to create a convenient, feature-rich mobile carpool application for both iOS and Android. We will also create an informational website which will be used to advertise our app and its features. This mobile application will be targeted towards people who are green conscious and are looking for an alternative, yet convenient way to travel. So, people who want to head to or towards the same location, whether it be long or short in distance, would be able to join one another and go to that same location together using one car. People riding along as passengers with the drivers would be saving money as they won’t be needing to rent a car or take an uber. Instead, they will be paying a small fee that would go towards the driver and gas fees depending on the distance travelled. The driver would make some money while driving to a location they were already headed for. This benefits both the driver and the riders, a win-win situation for everyone using the app and the environment!

**Goals and Objectives**

* Allow drivers to use their cars as another source of income without any extra effort.
* Provide riders with a convenient and cheaper option of transportation.
* Raise awareness of the dangers of car emissions, how it affects the environment, and encourage the community to go green.
* The scope of the project will include:
  1. A mobile app to connect the riders and drivers. The mobile app will be our main focus; it will have all the features we want to implement.
  2. A website with limited functionality. These functionalities would be creating an account for both drivers and riders, where they can view their rides, bills, and change their profile picture. However, it will not include any advanced features that the mobile app would have, like reserving a ride or navigating the roads, etc. The website will show how the app works and promotes green living that helps conserve energy and prevents air pollution.

**Broader Impacts**

Although the application we are developing will not be immediately used as a product in the market, the idea behind this application can be used on both a local and global level. Accordingly, this application bears significant impacts in terms of economic, environmental, and developmental factors within any nation state that adopts it.

Primarily, economic improvements are attainable via the relief associated with distributing financial burden of transportation across all participants within a given vehicle. Provided that participants partake in a manner congruent with the application guidelines, financing the transportation is distributed across all members of a given pool via fees and the burden subsequently removed from the driver by way of funds for gas and other vehicular needs. The driver too is compensated for the driving by way or role discounts. As such, others are encouraged to download the app and partake in such a role or at least save on their own transportation costs.

Additionally, the effective reduction of individual vehicles on the road serves to benefit the environment and encourages the green movement, which is now heading towards electric vehicles. Future electric cars would benefit all participants within a given vehicle as gas fees are then waived. Accordingly, environmental benefits are derived, and future ventures are encouraged, thus sustaining future developments by demonstrating public support. Given these impacts, on both broad and minute levels, the greater impacts of our application are thus identifiable and in many ways tangible.

**Ethical Issues**

The use of personal data is a common occurrence in today's tech industry. The data allows users to communicate with each other and with their environment. Some tech firms' entire business models revolve around the sale of personal data. The data is not used in a malicious manner but as a marketing tool to sell the users products and services. While there is a public discussion of the security and ethical use of this data by some of these tech firms, at the moment the practice of using user data is commonplace.

The Karpool app will require the user to provide data about themselves and their physical location. This data is essential to our project, without it our application could not function. At the moment we are not planning on monetizing our users' data. Our plan is to use the data only as needed to allow users to interact with other users and with predefined features. With these intentions clearly laid out we feel that we are not in breach of any ethical issues.

**Constraints**

* Products must meet the quality and expectations of the stakeholders.
* Project must be completed exclusively by the six team members listed above before the senior design showcase at the end of the Fall semester of 2021.
* Project must stay within budget.