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**THE UNIVERSITY OF TEXAS AT DALLAS**

**Vision Document**

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**ADVANCED SOFTWARE ENGINEERING PROJECT**

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1. Introduction

The CometRide system will provide a two-way solution to the low ridership and ignorance surrounding UT Dallas’s Comet Cab (“shuttle”) system by providing a mobile application for prospective riders to keep tabs on the shuttles and a mechanism for shuttle drivers to broadcast their status and location.

2. Positioning

**2.1 Business Opportunity**

The market for our project is completely open for the taking. There’s no current shuttle management system in place even though it’s evident that one is desperately needed. By providing a means for the shuttles and riders to know about each other, we can turn the shuttle system into something that’s actually useful for people on campus.

**2.2 Problem Statement**

The current problems with the shuttles on campus are twofold:

● The only means the students have of knowing where the shuttles are and what their routes are is a static map on the UT Dallas website, meaning that trying to catch a shuttle to speed up movement around campus is at best a guessing game, and at worst impossible.

● The shuttle drivers have no idea who wants or needs a ride except for those lucky enough to be noticed while they attempt to flag down the shuttle, meaning that even if students had a perfect knowledge of shuttle locations, ridership would still be lower than it could be.

**2.3 Product Position Statement**

For the UTD students who wish to make better use of the shuttles, CometRide is a mobile application that allows them to effectively keep track of the shuttles and their routes to better catch rides. Unlike the current static map, CometRide is dynamic and allows the user to judge whether the shuttle is the right call.

For shuttle drivers who need to know who wants a ride and where, CometRide is an application that allows them to broadcast their shuttle’s location to potential riders as well as see who wants a ride and where they are. There is nothing like this in place at the moment.

For the UTD Transportation Deparment who needs to know about how their shuttles are being used and establish special temporary routes, CometRide is an application that will keep track of the shuttles and their ridership as well as enabling creation of temporary routes. Though the department can create special routes as they wish, there is currently no communication system in place for that, nor is there any sort of tracking or oversight on the shuttles.

**2.4 Alternatives and Competition**

At present, the only alternative is a static map displaying the different routes viewable online at. However, it provides no dynamic information, such as where the cabs are or how full they are. Purchasable alternatives such as fleet management systems used by trucks are both expensive and lacking when it comes to the specifics needed by UTD.

3. User Description

**3.1 User/Market Demographics**

There are three primary demographics for CometRide. First is students and professors, who wish to use the shuttle service - theoretically speaking, every single one of the thousands of students and faculty at UTD are potential users. Guests to the university may also be short-term users, if they know of the application. The second is shuttle drivers, who commandeer the shuttles along their predefined routes. The third is the UT Dallas Transportation Department, which is responsible for overseeing and managing the shuttle system.

**3.2 User Profiles**

As stated above, our system will have three types of users.

* The consumers will be UT Dallas students (or, on occasion, professors) who wish to use the shuttle service and will rely on the application to help them find their shuttle.
* The shuttle drivers will want to keep the consumers updated on their shuttle’s status and location, and figure out where the consumers are waiting.
* The Transportation Department may want to generate temporary routes for special events or keep track of their shuttles.

**3.3 Key User Needs**

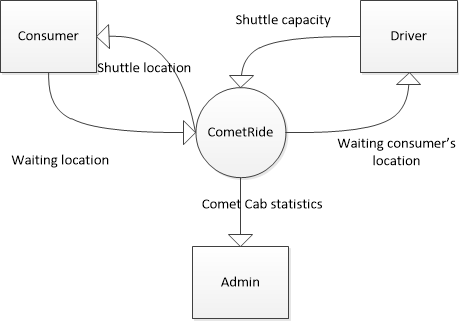
The key user needs for this application, aside from the functionality that have been discussed at length, are ease of use and responsiveness. After all, no users will use a difficult-to-use application, and if the application is slow to update the shuttle positions or a potential rider’s desire for a ride, the application is worse than useless because it will potentially mislead users. Of special note to the drivers is that the app must not distract them from driving the shuttles.

**3.4 User Environment**

All users of this app will be located on the UT Dallas campus, regardless of what type of user they are. This application will also be exclusively accessed via Android smartphone. Data is both generated and consumed by the users (Consumers use data from the drivers and vice-versa), making the application a relatively closed system. Given the time sensitivity of using the shuttles compared to walking, a fast response time is of the utmost importance to our system. If response times are slow, a potential rider might be missed, causing them to uselessly stand around waiting for a shuttle. On the other hand, while service interruptions are far from ideal they’re actually more tolerable as long as they’re known about, since they will merely mark a return to today’s status quo. Security issues are of lesser concern with this system, however. While an identifier will be needed to properly create and remove notices of who is waiting for a ride, this information need not be personally identifiable, so any potential attackers would only learn that “Somebody was waiting for a ride at X location and Y time”. However, security will still be treated with standard levels of concern, even if its impact is minimal.

4. Product Overview

**4.1 Product Perspective**



**4.2 Summary of Capabilities and benefits**

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| **Feature** | **User Benefit** |
| Consumers can track location of shuttles on campus | Save time - Consumers will be able to know if it is worth waiting for the shuttle to come by |
| Consumers can view shuttle routes | Consumers will gain information vital to using the shuttles |
| Consumers can view shuttle capacity | Consumers will gain information on whether they wish to wait for the shuttle |
| Consumers will be able to notify drivers of their location | Save time and effort - Consumers will not have to wait as long and will not have to strain to notify the driver |
| Admins will be able to view statistics on drivers performance | Admins will be able to see better what can be done to improve the Comet Cab |
| Admins can create and modify temporary routes | Students will now know what the temporary routes are so they can take advantage of them |

**4.3 Assumptions and Dependencies**

It is assumed that riders of Comet Cab already own smart phones, and if they do not or wish to not participate that this system will not interfere in the use of the shuttles as they are used today. Also that there is enough internet on the UTD campus to support our needs. For success the UTD transportation department must be willing to install our final product on their shuttles. We are also dependent on the Android platform (Perhaps eventually IOS as well), our device’s GPS, Google Cloud Messaging, HTML, and sufficient internet access.

**4.4 Cost and Pricing**

The mobile application will be free to download, but smartphone will not be provided and must be bought separately. An android tablet can be bought for $100 that can be used for the drivers. A data connection is necessary and can be bought for $10.00 per 1 GB which would last for a long time.

**4.5 Licensing and Installation**

Installation of the tracking devices will be required for all shuttles. The specifics of this will be discussed later, but location of device for ease of use and safety should be discussed. At this point licensing does not seem to be needed, but we will discuss this later if something arises.

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5. Appendix Glossary

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| **Term** | **Definition** |
| **Shuttle** | Officially known as a “Comet Cab”, “shuttle” refers to the golf carts that ferry passengers around campus. |
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6. Appendix References

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