Team Assignment #1: Requirements Analysis and Specification of MCSTS

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CPSC 3720-002
25 February 2019

Team Communication

For this course, our team will be collaborating through the means of Google Docs, Discord, text messaging (to coordinate in-person meetups), and of course, in-person meetups as well. For this first part of the project, we met in-person at the library to discuss ideas for the system itself and for roles that each of us will take on in this project.

Initially, our roles will be slightly more broad and will be refined as the semester goes on and we discover each of our strengths and weaknesses regarding these individual projects. But for now, we have decided that Reagan will take the lead on the Executive Overview section of the Project Description. Jackson will write the business case for why the system is necessary. Jack will describe the stakeholders and the benefits they can expect to receive from the system. Our unofficial regular meeting date as of now is every Monday at 5:30. If one member is unable to meet in-person at that time on any given week, they will join the group on Discord as soon as they are able.

Executive Overview

This overview is a summary of this group's planning document for a computer system to optimize efficacy and efficiency of a company-wide transit system for travel between campuses of the company as well as employees homes. Our system is designed to minimize the number of times that employees have to make these commutes on their own and help them take full advantage of the company's available resources. An additional benefit of this system is that since less employees will be commuting in their own cars individually, we will reduce the company's carbon footprint by carpooling to different locations when possible. And finally, we hope that this system will optimize company transit in such a way that maximizes convenience and satisfaction for employees, producing a more positive company atmosphere in general. Theoretically, this positive attitude shift in the company should trickle down and produce a better experience for its customers, as well.

The implementation of this system requires a lot of planning, interviewing, design, and modeling. These are all things that this team is prepared to do. The system will require a heavy amount of scheduling and maintenance once it is put into place, as well. All of these issues and more will be addressed in this document as well as in future planning and design documents.

Business Case

The case for this new system can be built using several categories: efficiency, customer and employee satisfaction, and environmental responsibility.

The first case to be made for the necessity of the MCSTS is the improvements to the efficiency of the campus. There are countless factors involved with transportation that can delay or stop important personnel from arriving to their designated locations on time. An executive's car could break down, an event planner's only route could have detours or an employee could get rear ended on the way to work. Individual transportation has too many risks that can lead to the cancellation of meetings with fellow employees or clients which in turn leads to wasted money, time, and customer satisfaction. A standardized transport removes these problems by providing a safe and consistent method of getting all these people to campus, despite any personal differences between them.

The second case is the satisfaction of your customers and employees. Most employees will be overjoyed to hear that there is a new transportation system to get them to work. Employees will appreciate the MCSTS's ability to save them money on their personal vehicles and save time through the transport's consistent timing and reliability.

The last case to be made is in environmental responsibility. All of the staff heading to the campus from all around using their own vehicles is a huge source of pollution and fossil fuel use that could be completely avoided. Each of these vehicles belonging to the staff is polluting the environment with its emission every single time it is driven to campus and back; for the staff that lives farther away, the emissions are even greater per trip. Like any self-respecting business, you cannot sit by while the people on your payroll make careless mistakes that could greatly affect future generations. The MCSTS could drastically reduce carbon emissions by having most of these many environment-polluting commutes replaced by a few MCSTS vehicles carrying many of the staff.

With these improvements, in addition to the benefits already discussed, the company could make a big marketing push about how much they do to reduce environmental damage on every single level of their operation, emphasizing transportation. This would increase the company's reputation, incentivizing environmentally conscious customers to pick your business over less thoughtful ones.

Stakeholders & Benefits

- **Client:** will be provided with a web application that will allow for customization for their customers. They will see an increase in the promotion of in-person meetings in the businesses they offer their product to. Should the popularity of this product reach the point of possible mobile application interest, the system will be set up in a way where only the graphical user interface has to be adjusted.
- **Company Executives:** will see a decrease in costs regarding the reimbursement of employees for individual travel costs. Company meetings both with clients and fellow employees across multiple campuses will become more predictable and reliable. This will allow for more business to be conducted that would have otherwise been lost to inconsistent meeting schedules. Time management and company efficiency in regards to communication and travel will increase, allowing for more work to be done and consequently more business to be conducted.
- **Employees:** who find themselves frequently traveling will see a decrease in their personal spending on work travel costs. They will no longer have to wait to be reimbursed or worry about the hidden costs they may not be getting returns on, such as personal vehicle depreciation. Should there be unexpected travel delays that cause meetings to have to be rescheduled or canceled, employees will not be held nearly as accountable should they be using shared company transport. An added benefit being that if an employee need to make calls or do work during the period of time it takes for them to travel from one campus to another they now have gained the ability to do that on company transport. They will have a better idea of why a colleague may be running late as communication will be easier (and safer) since the individual will not be the one driving. Schedules will be revised and updated faster - allowing them to be more able to accept meetings with other colleagues or clients should the original person not make it. Employees who offer carpooling will be able to be tracked and rewarded.
- **Administrators/Scheduling Managers** will find that they will be kept more up to date in regards to the likelihood that company transport is delayed. This grants them the ability to adjust their scheduling at an earlier point in time - allowing for more convenient rescheduling options. Daily frustration and stress will decrease.
- **Finance Department** of the company will find they have less information to keep up with regarding employee travel. Instead of having to keep track of a huge number of individual costs to eventually reimburse, they will only deal with a small, manageable number. Tracking costs for company vehicles such as buses and shuttles - their maintenance, gas, etcetera - is much easier to track and more reliable that the many numbers given by a huge amount of employees. The system will allow for the efficient gathering and display of such information - improving the department's ability to adjust the company budget as needed.

- **The IT departments** of the many campuses of the company will be provided with a system that they can easily implement with their current software and hardware. They will be provided with the means to monitor and adjust the system - should company administration request it - as well as the knowledge that the system is the same across all campuses. There is no need to worry about having to reconfigure something because the software on one campus is different than another.

Stakeholder Questions

Client:

- What exactly is your role in this project?
    - *I'm simply a rich person with an idea. I'd like you to build it and then I'd like to sell it to various clients.*
- Do you want this system to serve a very specific purpose or do you want it to be broad and able to be changed?
    - *I want it to be able to be specialized toward the customer who buys it.*
- What is the budget for this system?
    - *You'll have enough for what you need.*
- Would you like us to design a web application or a mobile application for this system or both?
    - *I want a web application initially. I might contact you on creating a mobile application later.*
- What are your main priorities?
    - *Scheduling is the highest. There needs to be a well-maintained, easily accessible, and useful schedule for inter-campus transportation. I want to take everything off the user where we can. Make the system work harder than the person using it. I really want to promote these in-person meetings. The system needs to be able to accommodate employees if something goes wrong like if the carpool driver is sick or the bus breaks down. There should be an emergency system/backup plan.*
- What is your overall vision for the system?
    - *I want to increase productivity for companies. Companies should require very little training to use it. It should make companies more efficient. Their employees should be showing up on time, where they need to be more often than before. It should make employees happier because travel is easy. I want it to boost company morale for my clients. It should save money for everybody: employees, companies, and me.*
- What methods of transport should the system be compatible with?
    - *Whatever suits my customer's needs best based on the context/setting of their company. Maybe there should be a way for employees to carpool. The employee should be able to list himself as a driver to a location and the system will prompt other users with the question, "Who wants to carpool?" Maybe (if it's an option) a train would be more optimal for certain companies. I'd like public transport to be an option but I don't want to interact directly with their systems. I need to be able to really customize for each company who is going to buy this. This is NOT for home-pickup.*
- What is the timeframe in which the system needs to be completed?
    - *You have until the end of the semester to finish the project with checkpoints along the way.*
- Who will be responsible for the scheduling aspect of the system?
    - *The company who buys it is responsible for scheduling. The company who buys it is also responsible for supplying the buses if that is something they want to do. They also are in charge of putting in local public transport schedules into the*

available rides section since I don't want to have to work directly with each area's public transport.

- *What kind of security measures are needed for this project?*
    - *There should be a manager sign-in and a separate sign-in for employees with a required username and password.*

Company Executives:

- What is your company - are you more oriented towards urban transportation (cars, subways, buses, etc.) or rural transportation (cars, buses, trains, etc.)?
    - *We are an X Company. We would be more suited to rural transportation.*
- What is your budget?
    - *Approximately $250,000.*
- Do you have a preference for how the interface is designed - would you like the scheduling for campus to campus travel to be more client oriented (custom) or consistent (scheduled)?
    - *We would like it to be versatile with options for both. There should be options for carpooling that are custom to employees particular schedules and shuttle options that are scheduled by our secretaries.*
- Do you want a general system like a city bus schedule or do you want one that requires an employee to make some sort of notification that they are planning on using company transport at a specific time and keep track of that?
    - *The employee should register with the system for whatever company transport they are using. This system would not include public transport.*
- If yes to the above question: Would you like to implement a notification system for when an employee does not arrive for transport on multiple occasions?
    - *If transport fills up routinely (i.e. there are no more seats) and an employee regularly does not show up to take their registered seat, they will need to meet with their supervisor.Otherwise, there will be no severe penalty*
- How many company vehicles are you thinking of using in relation to the number of employees that you believe would use company transportation?
    - *I think we need to hire out 3 shuttles (one each to go from our headquarters to each of our three branches). Everything else would be covered through the carpooling aspect of the system.*
- Would you like the system to implement a driver rotation - such that it is also known what driver is using which vehicle and keeps track of the consistency of that driver being on time or late?
    - *No. When an employee signs up for to drive for a carpool, whoever signs up to ride with them is trusting them to get there on time and is willing to take*

responsibility for their own being late if that is the case. We will manually keep track of our shuttles being on time.

- What are your priorities for the system in regards to its purpose & goals?
    - *I want my employees to be able to have free or cheaper transportation so that they can get to their intercampus meetings on time and with ease.*
- Are we asking the right questions? Are these the questions we should be asking you or should they be addressed to someone else?
    - *Yes, I believe so. I think as the head of this company, I am the right person to be answering these questions.*
- Would you like to be able to view system metrics such as how often the system is being used as well as costs accrued from its different aspects?
    - *Absolutely. That would be very helpful to our IT and Financial departments, respectfully.*

Employees:

(These answers are summaries of all the answers we received from the many employees that we polled.)

- Would you like to be able to specify what method of transport you prefer and have that suggested to you first before others?
    - *Yes, because I would mostly use X method of transportation.*
- Would you like to be able to log the amount of time and miles you use?
    - *I think that would be helpful because the people who offer carpool rides the most should be rewarded for that.*
- Would you like to be notified in advance by the system when a ride is canceled or would you rely on the person providing the transportation to communicate that?
    - *It would be nice to have a notification. The carpool driver should cancel the ride on the system and then the system can notify myself and the other riders.*
- What time during the day do you typically need to leave to go to another campus?
    - *My meetings are usually around lunchtime or slightly before that (10:30am-1pm).*
- Would you prefer a way to request a specific block of time for your meetings or to have a consistent schedule of company transport that you can build your meetings around?
    - *Both would be nice to have because sometimes I am the one scheduling the meetings and sometimes I'm not. Sometimes the meeting time is just given to me and I have to be there at that time. It isn't always up to me.*
- How much time does it normally take you to travel between campuses?
    - *No more that 40 minutes, usually.*
- If you were creating this system, what would you want in it?
    - *I would like it to be as easy to use as possible.*

- What would you say your biggest problem is when it comes to driving your own vehicle to other company campuses?
    - *Traffic is always a problem, not to mention the cost of gas. Sometimes I have 3 meetings a week at different campuses. If I have to make a trip there and back for each trip, that's almost a tank of gas spent on just one week's meetings. Carpooling or a shuttle bus would really help me out.*
- Do you have any concerns about using company transport?
    - *I don't necessarily like the idea of getting to a meeting being out of my control, but as long as there's always a backup plan I think it will be a benefit to the company.*
- Is there anything you can think of that would make this system more useful than other public transport systems?
    - *No. I think the carpooling/shuttle idea is good already because it's goal is specifically to get employees to and from these campuses.*
- Would you want to be able to provide feedback regularly regarding the features of system?
    - *Yes, I think there should be a way to report an issue on the web application.*
- Are we asking the right questions? Are these the questions we should be asking you or should they be addressed to someone else?
    - *Yes, I think you've covered most of the things that I had in mind as an employee.*

Administrator/Schedule Manager:

- How much do unexpected individual travel delays impact company scheduling?
    - *These can be catastrophic to planned events, even more so for company administrators.*
- What type of interface would be most effective for providing you with the information you need to adjust shuttle schedules?
    - *I just need to be able to see a schedule of all intercampus meetings for the week by at least Friday morning of the prior week.*
- How much time ahead do you prefer a warning of meeting schedule changes such that you can reschedule shuttles effectively?
    - *As I said, as long as I have the final meeting schedule Friday morning of the week prior, I can adjust all the shuttle schedules appropriately. If a meeting gets rescheduled midweek, I will need to be notified so I can reschedule the shuttles as soon as possible.*
- Would you want the system to be able to be integrated with the calendar applications you may be using?
    - *That would help out a lot. I use my calendar for everything company-related so to be able to see the meeting schedules right alongside that would be very helpful.*
- How much late time is allowed for activities?

    - *10-30 minutes are usually allocated for employees to arrive.*
- Would a tracking system on the transports allow you to schedule better around incidents?
    - *I suppose that would be helpful for traffic. But if someone were to be involved in an accident (shuttle or carpool driver), the driver should report that immediately on the system.*
- What information do you need to help you change or alter schedules if an unexpected event were to happen?
    - *It would be helpful to have all the employees who were scheduled to use that transport (or were on the transport when it failed) so that we could make sure every employee was accounted for when solving the problem.*
- How much time do you estimate it will take you to make/maintain these schedules weekly?
    - *I would say approximately half a work day.*
- Does this time commitment fit into your current work week?
    - *Yes, scheduling is a big part of my job.*
- Are we asking the right questions? Are these the questions we should be asking you or should they be addressed to someone else?
    - *Yes, these are all questions that should be addressed to myself and myself only.*

Accountants/Financial Department:

- How much money is spent on reimbursing employees for personal vehicle travel?
    - *The pay will be proportional to the amount of carpooling done, we want to reward our employees for their generosity.*
- How much money can be devoted to this project?
    - *We are very excited to increase our in person meeting times so the expense of the project fits happily within what we are willing to spend.*
- What methods do you believe our system could implement that would decrease costs hidden within company vehicle transport?
    - *Administrators could create Efficient bus routes that take employee concentrations and local traffic into consideration to reduce costs.*
- How would you want gas and vehicle depreciation costs for company vehicles to be tracked?
    - *That information could simply be compiled and sent to my department.*
- Do you have any statistics you would like the system to track that we have not mentioned?
    - *Tracking the amount of employees in certain areas would allow us to create more efficient bus routes and save money.*
- How would you want any financially relevant data collected by the system to be displayed to you?

    - *This information could be put into a folder for my department to examine.*
- Do you have any ideas for the system?
    - *Perhaps, a segment of the system for viewing total costs would be efficient*
- Are the questions we are asking things that concern you or do they concern company administration?
    - *This is my field of expertise, so bring the financial questions my way*
- Would you like to be able to provide feedback regarding the efficiency of this system and its ability to fulfill your needs?
    - *A support system would be greatly appreciated so that we could send complaint and feedback.*
- Have the questions we have asked you been relevant to what you would want out of this system and if not what would you rather we asked?
    - *These specifications should allow for me to do my work far more efficiently than before.*

IT Departments:

- Do you have any experience working on a transportation network?
    - *Yes. We work with our company transport on maintaining their web applications.*
- Is there a way to establish reliable electronic communication between the other company sites already such as a company wide network?
    - *I believe so. We have access to our company transport scheduling system. It would not be incredibly difficult to integrate the scheduling program into another web application.*
- Would you like to have the system regularly provide you with updated metrics?
    - *We would not be able to do our job well without it - so yes. Plus it would keep our department aware of any major changes.*
- Would connecting the system to company networks be a wise decision - are the networks fast and reliable enough?
    - *Yes, since the network will mostly rely on premade schedules, the speed is not the most important aspect.*
- If there was a power outage on one campus would there be a way to have the system remain unaffected for the other campuses?
    - *While we have a database containing all company information - each campus has its own system for its needs.*
- Would you like to be able to send out notifications regarding system maintenance to users?
    - *Yes - it would prevent employees from other departments from sending us complaints when we take the system off-line to perform maintenance.*
- Are you capable of integrating employee authentication systems with the system?

    - *Yes. We would just have to connect it with our overall company employee database.*
- How dependent on already established company software systems would you say our proposed system would be?
    - *Considering you're suggesting we integrate our login system as well as company transport scheduling this would be incredibly dependent on our system.*
- Are there any aspects of your company's software/hardware that concern you when regarding this system?
    - *If our servers go down I am concerned that employees in other departments will not be able to access the information they need regarding their transport and meeting times. It might be best to instead create a login that is based on a server your employer has created that takes our employees to our company's system rather than running the system through our network.*
- Are we asking the right questions? Do you feel any of these questions should be addressed with someone else?
    - *I would say most of these questions are indeed correct - as head of our IT department I feel as though I am capable of answering many of these. However, I feel as though many of these questions should be addressed with our administration in regards to how they would wish to designate what parts of the system each user has access to.*

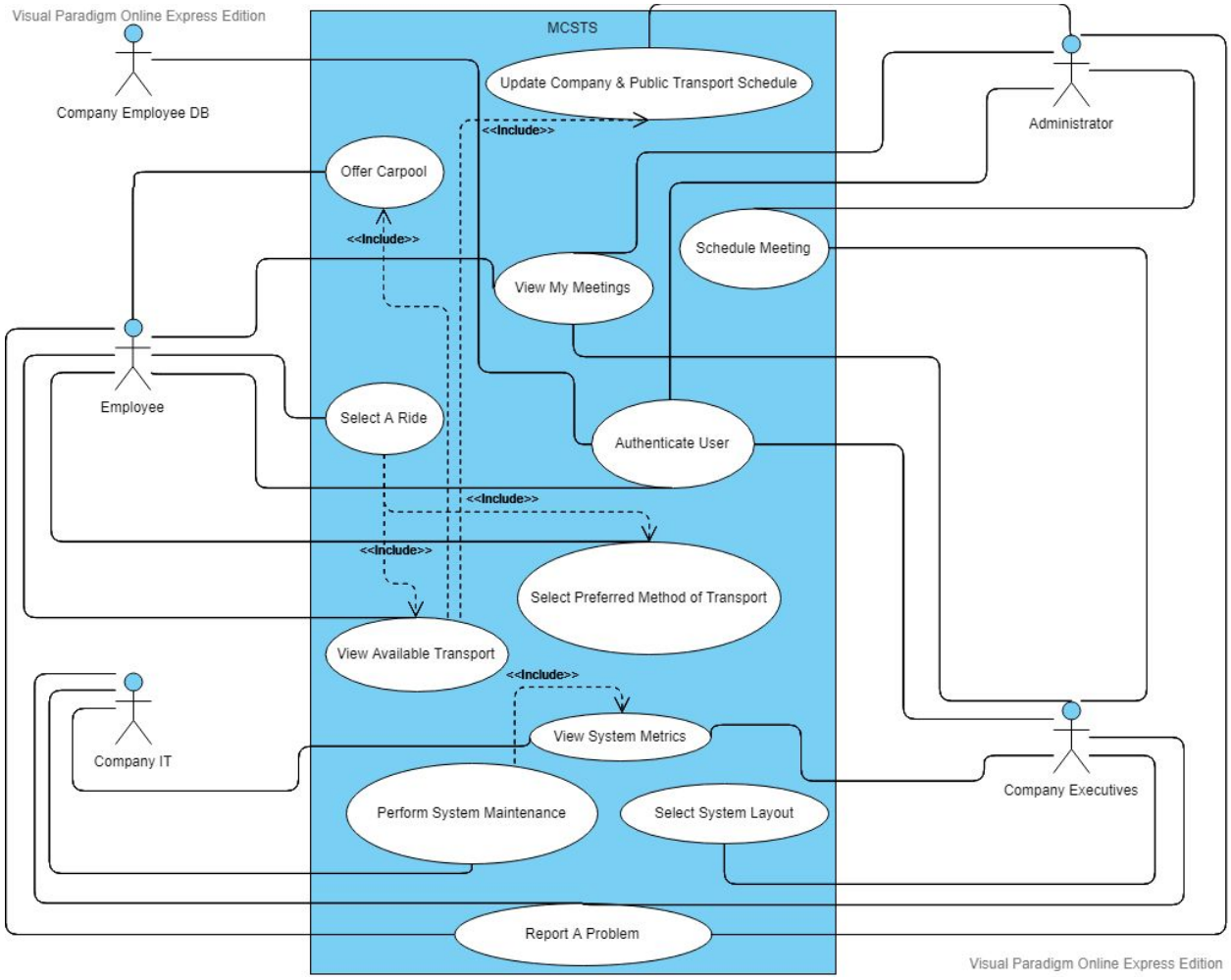
Risks

In this section, we will discuss the two most "risky" features of this system.

The first and arguably most risky facet of the system is the cost of any shuttles and general maintenance that any specific implementation of this system may require. In other words, there is a considerable amount of variability in terms of how any individual company could implement our system after buying it. A company who decides to incorporate shuttle transport in addition to carpooling may need to have a much larger budget than a company that does not rent/buy shuttles. Also, depending on these implementation options that allow customization for the user companies, the system could require a lot more maintenance from the company's IT department. This could result in time costs and therefore, more monetary costs due to paying those IT employees more for their man hours. The solution to this risk is for the company implementing our system to have a good budget plan beforehand. As long as they understand these monetary risks and budget for them accordingly, they can choose to implement the system in a way that will hurt them the least, financially.

The second most risky feature of this system is likely the possibility of scheduling problems and, stemming from that, the risk of someone to miss a meeting because they were counting on transportation that has the potential to fail. Regarding scheduling, it is possible, especially when the system is still new to the company using it, for there to be more demand for transportation than there is transportation available. For instance, if lunchtime happened to be a particularly popular time for intercampus meetings, there might be many employees registering for travel for that time. If the transportation medium was shuttles and the company had not prepared for this, there may not be enough seats to get everybody where they needed to go. If people weren't prepared to carpool, then some meetings might not occur, which could take a toll on company productivity. A way around these problems is again, simply preparing for them. If the administrator/scheduler sees that there are several meetings taking place at the same time on a given day, he/she would be wise to send out an email letting employees know that there may not be enough seating on the shuttles for everyone. Therefore, some carpooling would be required. It is also a good idea for a company (if they can afford it) to have an extra "emergency" shuttle that they can call on if one of their shuttles/carpool cars breaks down.

MCSTS Use Case Diagram



Description of Use Cases

1. Goal: Set up the system
   1. Company chooses to adopt our system.
   2. Administrator of the company signs into the administrator section of the system.
   3. Administor enter in the information for the buses and other transit options at their disposal.
   4. Administrator also enters in their custom schedule for these transports on a weekly, monthly, or yearly basis.
   5. Employees of this company can view these schedules at any time provided they log in.

2. Goal: Set up a meeting
   1. Administrator would like to plan a large meeting for an upcoming project.
   2. Administrator signs into the administrator login on our system and sets a time for the meeting.
   3. Attendees are notified of this and, after logging in to the employee area, are presented with options on how to get there.

3. Goal: Attend a meeting
   1. Employee is alerted through our system about a meeting that fellow employees have set up to discuss an ongoing issue with a project.
   2. Employee's usual form of transportation to work is unavailable.
   3. Employee signs into the employee section of our system and looks for available options at the time of the meeting.
   4. Employee finds that a fellow meeting attendee is offering to carpool and lives nearby. The employee notifies the carpooler that he needs transportation and attends the meeting that way.

Example Use Cases

Typical Employee Use Case:

In order for a user to log in to the system, he/she needs to have company-provided login credentials (username and password). They should also have a basic knowledge of how the system is supposed to work and its basic purpose. The system will have access to the user's login credentials in order to associate that employee with the transportation they select. Let's use Jeff Caper, a fictional general employee, as an example.

1. Jeff logs in with his username (jeffCap) and password (b12Hello!)
    a. Jeff enters the wrong username.
        i. An error is returned and he is told the username is incorrect.
    b. Jeff enters the wrong password.
        i. An error is returned and he is told the password is incorrect. He can either reset his password or try again.
            1. Jeff tries again.
            2. Jeff resets his password to c12Hello!
    c. Jeff successfully logs in and is confirmed to be a general employee.
2. Jeff views the Main Menu page.
    a. Jeff notices the "View My Meetings" option
    b. Jeff notices the "Select Preferred Method of Transport" option
    c. Jeff notices the "Report a Problem" option
    d. Jeff notices that he can log out.
3. Jeff selects the "View My Meetings" option
    a. An error occurs.
        i. Jeff goes back to Main Menu.
            1. Jeff selects the "Report A Problem" option
            2. Jeff selects the "View My Meetings" option again
    b. Jeff successfully views the "My Meetings" page
4. Jeff clicks on his meeting labeled "Annual Performance Evaluation with George Fiddle" to view the details.
    a. Jeff sees the meeting goes from 1 PM - 3 PM on March 4th and that it is located at Company X's Charleston Campus. Jeff is at their Clemson Campus.
    b. An error occurs and Jeff is unable to view the meeting details
        i. Jeff goes back to Main Menu
            1. Jeff selects the "Report A Problem option"
            2. Jeff goes back through "View My Meetings" to try again.
        ii. Jeff refreshes the page

5. Jeff selects the "View Available Transport" option for his meeting with George in Charleston.
    a. Jeff notices that there is a greyhound bus that leaves at 8 AM and is projected to arrive at 12 PM in Charleston.
    b. Jeff notices that there is a company bus that leaves at 11 AM and is projected to arrive at 3 PM in Charleston.
    c. Jeff notices that there is a carpool between his fellow employees Jamie Blankenship, Alex Smith, and Fred Jones (the driver) who are planning on leaving at 7:30 AM and hope to get to Charleston by 12 - accounting for bathroom stops. Carpooling is set as his "Preferred Method of Transport" so this option is highlighted on his dash.
    d. Jeff notices the "Offer Carpool" option.
6. Jeff selects the "Select a Ride" option and clicks on the carpool with Jamie, Alex, and Fred.*
    a. An error occurs.
        i. Jeff returns to the Main Menu.
            1. Jeff selects "Report A Problem"
            2. Jeff redoes the whole process
        ii. Jeff refreshes the page.
    b. Jeff successfully confirms his ride choice.
7. Jeff is taken back to his "My Meetings" page and his meeting with George now shows that he has selected a transportation option which he can view the details of should he want to.
    a. Jeff notices he can select "Return to Main Menu"
    b. Jeff notices he can select his "Paper Stock Discussion" meeting with Judy Crane and decide on a method of transportation for that meeting.
8. Jeff selects "Return to Main Menu"
    a. Jeff notices he can select "View My Meetings"
    b. Jeff notices he can select "Report a Problem"
    c. Jeff notices he can select "Select Preferred Method of Transport"
    d. Jeff notices he can log out.
9. Jeff logs out.

*<u>Alternate Path:</u>

6. Jeff selects the "Offer Carpool" option.
7. Jeff specifies that he will transport a maximum of four people, that he drives a Blue Honda Civic, and that he plans on leaving Clemson at 8 AM and arriving in Charleston at 12:30 PM.
8. Jeff selects "Confirm Carpool Specifications"

a. An error occurs.
    i. Jeff returns to the "Main Menu" page.
        1. Jeff selects the "Report a Problem" option.
        2. Jeff redoes the entire process.
    ii. Jeff refreshes the page.
b. Jeff successfully confirms his carpool specifications.

8. Jeff is taken back to his "My Meetings" page and his meeting with George now shows that he has selected a transportation option which he can view the details of should he want to.
    a. Jeff notices he can select "Return to Main Menu"
    b. Jeff notices he can select his "Paper Stock Discussion" meeting with Judy Crane and decide on a method of transportation for that meeting.
9. Jeff selects "Return to Main Menu"
    a. Jeff notices he can select "View My Meetings"
    b. Jeff notices he can select "Report a Problem"
    c. Jeff notices he can select "Select Preferred Method of Transport"
    d. Jeff notices he can log out.
10. Jeff logs out.

Typical Administrator Use Case:

In order for an Administrator to log into the system, he/she need to have a special administrator set of login credentials, allowing them more features than a typical employee. The administrator should have advanced knowledge of how the system works and all of its functions. Let's use Norville Rogers as a fictional administrator example.

1. Norville logs in with his username (norvRogers) and password (shaggyRogers67!)
    a. Norville enters the wrong username.
        i. An error is returned and he is told the username is incorrect.
            1. Norville tries again.
            2. Norville selects "Reset username" and enters his company email address. He follows the prompts to reset his username.
    b. Norville enters the wrong password.
        i. An error is returned and he is told the password is incorrect. He can either reset his password or try again.
            1. Norville tries again.
            2. Norville resets his password to shaggyJones85!
    c. Norville successfully logs in and is confirmed to be an administrator.
2. Norville views the "Main Menu" page.

   a. Norville notices the “Schedule Meeting” page
   b. Norville notices the “Update Company and Public Transport Schedule” option
   c. Norville notices the “View My Meetings” option
   d. Norville notices he can log out
3. Norville selects “Update Company and Public Transport Schedule” option
   a. Norville notices the “Update Company Transport Schedule” option
   b. Norville notices the “Update Public Transport Schedule” option
4. Norville selects “Update Company Transport Schedule” option
5. Norville selects “Update Company and Public Transport Schedule” option
   a. Beverly notices the “Update Company Transport Schedule” option
   b. Norville notices the “Update Public Transport Schedule” option
6. Norville selects “View Current Shuttle Schedule”
   a. An error occurs.
   b. Norville goes back to Main Menu.
      i. Norville selects the “Report A Problem” option
      ii. Norville selects the “View Current Shuttle Schedule” option again
7. Norville selects “View Current Carpool Schedule”
   a. An error occurs.
   b. Norville goes back to Main Menu.
      i. Norville selects the “Report A Problem” option
      ii. Norville selects the “View Current Carpool Schedule” option again
8. Norville selects “View Personal Meeting Schedule”
   a. An error occurs.
   b. Norville goes back to Main Menu.
      i. Norville selects the “Report A Problem” option
      ii. Norville selects the “View Personal Meeting Schedule” option again
9. Norville logs out

Typical Company Executive Use Case Scenario

In order for an executive to log into the system, he/she need to have an administrator-level set of login credentials, allowing them more features than a typical employee. The executive should have administrator-level knowledge of how the system works and all of its functions. There may also be some functions that only an executive can access. Let’s use Beverly Simpson as a fictional company executive example.

1. Beverly logs in with her username (bevSimps) and password (Bevvers#1)
   a. Beverly enters the wrong username.
      i. An error is returned and she is told the username is incorrect.

1. Beverly tries again.
2. Beverly selects “Reset username” and enters her company email address. She follows the prompts to reset her username.

b. Beverly enters the wrong password.
   i. An error is returned and she is told the password is incorrect. She can either reset her password or try again.
      1. Beverly tries again.
      2. Beverly resets her password to Bevvers#2

c. Beverly successfully logs in and is confirmed to be a company executive.

2. Beverly views the “Main Menu” page.
   a. Beverly notices the “Schedule Meeting” page
   b. Beverly notices the “Select System Layout” option
   c. Beverly notices the “View My Meetings” option
   d. Beverly notices the “Report a Problem” option
   e. Beverly notices the “View System Metrics” option
   f. Beverly notices she can log out
3. Beverly selects the “Select System Layout” option.*
   a. Beverly notices the “Reset to Default Corporate Layout” option
   b. Beverly notices the “Edit Current System Layout” option
4. Beverly selects the “Edit Current System Layout” option
5. Beverly selects from the available options requested by Company X for their system and alters the access employees have to certain options within the system.
   a. An error occurs.
      i. Beverly returns to the “Main Menu” page.
         1. Beverly selects the “Report a Problem” option
         2. Beverly redoes the whole process.
      ii. Beverly refreshes the page.
   b. The system successfully acknowledges the request and a message pops up stating that the system will go down for a short period to update itself. Beverly is automatically logged out.
6. Beverly selects the “View System Metrics” option
   a. Beverly notices the number of employees that have accessed the system this month
   b. Beverly notices the total number of carpools that have been registered this month (number of drivers)
   c. Beverly notices the total number of employees who have used at least one carpool this month

    d. Beverly notices the total number of intercampus meetings scheduled this month
    e. Beverly notices the problems that have been reported with the system
7. Beverly logs out

Typical IT Employee Use Case Scenario

In order for an IT employee to log into the system, he/she need to have a special maintenance set of login credentials, allowing them more features than a typical employee. The IT employee should have advanced knowledge of how the system works and all of its functions, as well as how to debug these features according to feedback. Let's use Gloria Snow as a fictional IT employee example.

1. Gloria logs in with her username "GlorSnow" and password "EdgarAllen_Poe8"
    a. Gloria enters the wrong username.
        i. An error is returned and she is told the username is incorrect.
            1. Gloria tries again.
            2. Gloria selects "Reset username" and enters her company email address. She follows the prompts to reset her username.
    b. Gloria enters the wrong password.
        i. An error is returned and she is told the password is incorrect. She can either reset her password or try again.
            1. Gloria tries again.
            2. Gloria resets her password to TheRaven8$
    c. Gloria successfully logs in and is confirmed to be an IT employee.
2. Gloria views the "Main Menu" page.
    a. Gloria notices the "Report A Problem" option
    b. Gloria notices the "View System Metrics" option
    c. Gloria notices the "Perform System Maintenance" option
    d. Gloria notices that she can log out.
3. Gloria selects the "View System Metrics" option.
4. Gloria reads over the analytics regarding usage and crashes. She also reads through the "Report A Problem" entries submitted by employees at her campus.
5. Gloria decides she wants to perform system maintenance.
6. Gloria returns to the "Main Menu" page.
7. Gloria selects the "Perform System Maintenance" option.
    a. Gloria notices a "Schedule Maintenance Date and Time" option
    b. Gloria notices a "Perform Maintenance Immediately" option
8. After seeing that there are no problems with the system that require immediate maintenance, Gloria selects the "Schedule Maintenance Date and Time" option

   a. Gloria schedules her routine Maintenance check for a week from today to check these reported problems again
   b. In the meantime, Gloria begins working from the top of the list of reported errors with the system and adds the first one to her to-do list
9. Gloria logs out

Team Member Contributions

At the start of this project, we attempted to evenly split up duties amongst our team members in order to maximize the efficiency and speed of our work. Then, the plan was for each member to read over the other members' contributions to proofread for grammatical errors, revise it so that the report has a good and easy-to-read flow, and make sure we're all thinking about the system in a cohesive way.

The duties assigned were as follows: Reagan was to write the executive overview and the risks (parts #2 and #7), Jackson was to write the business case and the top three use cases (parts #2 and #9), and Jack came up with the stakeholders affected by the system and the use-case modeling diagram (parts #2 and #8). Then all of us would come together to come up with the interview questions that we would ask each stakeholder, carry out the mock interviews, and create example scenarios detailing how the system works for each stakeholder. In part 3 of the project, we were all equally responsible for writing the example use cases and editing the previous sections of the project.

These duties were fulfilled as dictated. Each team member contributed at least some amount to the interview questions, though Jack wrote the majority of them. All reviewed them - checking for relevancy and consistency. Reagan and Jack revised the interview questions. Jack made grammatical and word choice edits where needed throughout the document. In the in-person interview with the client, Reagan asked the vast majority of the questions and also did most of the formal documentation of answers. Jack contributed a great deal on the use case examples and Reagan completed the title page as well as correcting all the formatting errors/inconsistencies.

Regarding communication about ten text conversations were had, Jack initiating about seven and Reagan initiating about three. All members responded. A discord was set up and created with one conversation initiated by Jack and responded to by Reagan consistently. The in-person meeting had all three group members attending. All three spoke and contributed. We also had a voice chat meeting through discord to discuss responsibilities and collaboration on the second part of the project, specifically. Everyone was in attendance to the voice chat meetings.

Jack's strengths and areas for improvement:

Jack did a great job initiating conversations and making sure this project was a priority for each member. He was serious about his work and about making it the best it could be.

Reagan's strengths and areas for improvement:

Reagan did an excellent job of taking responsibility for his work and while he completed his section later on in the project, he did it quite well. He responded to messages consistently and contributed to group sections. Starting earlier on his section of work for future projects would be the only area of improvement suggested.

Jackson's strengths and areas for improvement:

Jackson did his individual section of work very well and very quickly. After that, though, he could have communicated more than he did and could have contributed to the group sections a bit more.