

Milestone 6 Project Evaluation

Team Members:

Austin Phillips – aphillips2022@my.fit.edu

Jason Smith – jsmith2022@my.fit.edu

Jacqueline Torres - jtorres2020@my.fit.edu

Hunter Smith - hsmith2021@my.fit.edu

Faculty Advisor from CSE:

Dr. Phillip Chan –pkc@cs.fit.edu

Client Name:

Dr. Phillip Chan –pkc@cs.fit.edu

Affiliation: Florida Tech

Meeting Dates:

11/7/2024

11/21/2024

Scheduled: Thursdays Bi-Weekly at 11am

Progress Milestone 6

Task	Austin	Jason	Jacqueline	Hunter	Progress Matrix
Test Group Match Algorithm for 64 test users	100%	0%	0%	0%	100%
Add tables to group view page for users to view how much of a match that group is	100%	0%	0%	0%	100%
Modify the home page to display upcoming user trips	0%	0%	100%	0%	100%
Modify users rating to display numerical value (IE half stars) and After	0%	100%	0%	0%	100%

Trip page to display trip members					
one demo video for the main features: group recommendations, pre-trip, during trip, post-trip	25%	25%	25%	25%	100%
Internal System Testing - Evaluation of Group recommendation algorithm accuracy	50%	15%	15%	20%	100%
External System Testing - Timing task completion and user satisfaction	0%	50%	50%	0%	100%
User Manual	0%	0%	0%	100%	100%

Discussion (at least a few sentences, ie a paragraph) of each accomplished task (and obstacles) for the current Milestone:

Task 1: This task was fully completed. To start this task we created a new page that served as our group recommendation admin page, this page allowed for groups to be made for a selected week and be viewed before updating to the database. This enhanced our ability to troubleshoot issues with the matching algorithm. This page allowed us to view who was eligible to be recommended to a group for a specific week and their attributes and view groups that were formed along with information about that formed group like location and preferences. The algorithm we used did not change during this milestone except I did tweak the weights of how it calculated distance, by giving more weight to the user location over user preferences. We tested the groups that were made by creating test users with controlled attributes and ensuring the algorithms output match what we expected. An example of one the evaluations we performed is creating 32 users in the north and south, the expected outcome of this is all the groups only include users in 1 direction. This ensures that the location distance grouping is working properly.

Task 2: This task is fully completed. We added to the group view page a way for users to view how well the group matches. This was done by creating a matrix where how well users match is shown by a % with 100% meaning the users preferences fully match.

Task 3: This task is fully completed. The home screen now displays Today's Trips, Recommended Groups for the upcoming week, Future Trips, and Post Trips. Each module can take you to other components of the application. From Today's trips, if the current user is the driver, then the ride can be triggered directly from the home screen. If the current user is a driver, then the ride will either display "Awaiting Driver to Begin Trip" or "Trip in Progress". Through each view both rider and driver will have a capability to view all of the group's information including members and location. Group recommendations allow the user to join a group or remove them from their screen. The Future Trips module lets the user confirm or cancel their upcoming ride. Lastly, the Post Trips module allows the user to view the passengers and riders in the group and gives them the capability to leave a star rating, comments, or report the user.

Task 4: This task is completed and the After Trip page has been updated. Due to limitations with the Radzen ratings component, we are unable to display half stars, but instead display to the user a numerical value of a user's rating. The After Trip page now also correctly displays group members from a previous carpooling trip, instead of the three hardcoded test users.

Task 5: This task has been completed and shows the functionality of our application by showing the following processes. Shows how users can accept/decline group recommendation, create their own groups, join a trip as a driver, start a trip as the driver, allow riders to view where the driver is and rate other users in past groups.

Task 6: This task was fully completed, we did multiple iterations of two kinds of tests. The two types of test are preference and distance. These were chosen because those are the two attributes that define users. For the distance testing we created 32 users in the north and 32 users in the south, our expected output is that all the users in the north are grouped with other users in the north. For preference testing we created 32 men and 32 women users, 16 of each in the north and 16 in the south. All had their gender preferences set to the same gender. The expected output for this test is all the women in the north should be in groups, all the women in the south should be in groups and the same for the men. Both of these tests were successful.

Task 7: This task was fully completed. We conducted a series of time trial tests ranging from registering to the application to joining a group. We assigned the same set of tasks to 5 individuals and recorded their time and feedback.

Task 8: This task was fully completed. The user manual for the Carpooling App explains the major features of the app, along with minor features which vary the behavior, and gives instructions on how to use them.

Discussion (at least a few sentences, ie a paragraph) of contribution of each team member to the current Milestone:

Austin Phillips: On this milestone, I worked on integrating the group recommendation algorithm into the trip process. I created a hierarchical system where users are in groups and each group has trips for the days that the group is traveling. I also worked on creating a system for generating group recommendations the week prior. This new system allows users to plan further ahead so they can adjust travel arrangements as I needed. I also created the demo video and did the group recommendation algorithm evaluation. I did this by creating different scenarios where there is a known outcome such as all north and south test users. The expected output of this is that all the users in the north are with users in the north and all the users in the south are with users in the south. Lastly I added to the group view page a way for users to view how well the group matches. This was done by creating a matrix where how well users match is shown by a % with 100% meaning the users preferences fully match.

Jason Smith: On this milestone, I worked on updating and connecting the After Trip page and Rider Confirmation pages to the home screen. The After Trip page now displays a numerical value for each user's rating and correctly displays the group members from the user's previous carpooling trip. The Rider Confirmation page also correctly shows upcoming trip details for a user's group. I then ran external tests of our system, timing people with no familiarity to our system to see how long it would take them to complete a certain task on our application.

Jacqueline Torres: For this milestone, I focused on modifying the home screen. This includes creating modules for Today's Trips, Future Trips, and Post Trips. I also worked on making the application more mobile friendly by modifying the mainlayout. After completing those, I shifted my focus to external testing. I conducted a series of tests for the evaluation portion of this milestone. This includes timing random users on a given set of tasks and recording their feedback.

Hunter Smith: For this milestone, I wrote the entire user manual, detailing every feature, how to use them, what different options you have when using them, and what it will look like on the user's screen (with visuals). I also helped verify the accuracy of the internal systems, namely the group recommendation algorithm.

Evaluation

External Evaluation

	Task 1	Task 2	Task 3	Task 4
User 1	7:29	1:35	0:48	13.95
User 2	5:31	0:59	1:03	15.91
User 3	5:46	1:27	1:45	14.54
User 4	5:59	1:13	0:37	9.22
User 5	6:03	1:04	0:44	11.76
Average Time	6:09	1:15	0:59	12.47

Task 1: Register an account. This includes profile setup and setting up your schedule.

Task 2: Joining a recommended group from the home page.

Task 3: Viewing a past trip. User must leave a rating and text review as well (tested for 1 group member).

Task 4: Viewing other users. User must click on another user and add them as a friend.

User Feedback Statements:

- **User 1:**
 - Confirming the user's email is confusing and it is unclear where the user should click to verify their email.
 - Clicking the profile image at the top right of the screen should also open the page navigation drop down
- **User 2:**
 - Sign-up button on application login screen is too small and unclear to the user
 - Homepage would not pass 508 compliance (standards for visually impaired)
 - Saving profile information in Profile page needs a more clear button to select
- **User 3:**
 - Needs to be more mobile friendly
 - Hard to tell where to confirm email address.
 - Review Past Trip page was difficult to navigate because there wasn't a clear description to scroll to the ratings and review.

- **User 4:**
 - A little bit hard to navigate. The registration should navigate to profile setup.
 - Also when creating a password, it would be nice to see what I'm typing
- **User 5:**
 - No Comment

Discussion of External Project Evaluation

The external evaluation was performed by testing 5 random participants on our application. Each participant was given 4 tasks (listed above). The focus of these tests were to find if our application was user friendly and easy to use. The feedback we received varied. We found that users who operated on a laptop or similar device navigated the application smoother than those on mobile devices. Registration took the most time compared to the other tasks because this included navigating through different pages, verifying the account, and inputting information. Joining a group proved to be a seamless task as well as viewing a past trip. Lastly, viewing other users and sending a friend request seemed to be the easiest among the 4 tasks. In conclusion, through testing we found that our application needs to be more mobile friendly. It also needs to flow better to different pages when needed.

Discussion of Internal Project Evaluation

Internal evaluation was performed by testing our group recommendation algorithm in different scenarios to make sure it is taking into account users location and preferences. For the distance testing we created 32 users in the north and 32 users in the south, our expected output is that all the users in the north are grouped with other users in the north. For preference testing we created 32 men and 32 women users, 16 of each in the north and 16 in the south. All had their gender preferences set to the same gender. The expected output for this test is all the women in the north should be in groups, all the women in the south should be in groups and the same for the men. Both of these tests were successful.

Date(s) of meeting(s) with Client during the current milestone:

- 11/07/2024
- 11/21/2024

Client feedback on the current milestone

- See Faculty Advisor Feedback below

11/07/2024

- **Group Recommendation**
 - Add Weights to the profile page

- Make it so the system has a page where the user can confirm or decline the group recommendation for the next week (if they decline they manually do their own groups)
- Example on Saturday morning, look at the upcoming week to see what schedules each user has. Generate groups using hac and save to database
- When the user accesses the page just displays the groups they are recommended, if they decline then the user must form or join their own groups. Run for each hour in both directions.
- Home Page
 - Today's Trips (should be 2)
 - To Campus / From Campus
 -
 - Summary: Time
 - When clicked
 - If rider: drivers name, car description, riders names, car location, ETA to your position, messaging, panic button(florida safe)
 - If driver: route with markers for passenger location, rider names, messaging
 - Future Trips
 - For the next week (tomorrow till next week)
 - When clicked:
 - If rider: drivers name, car description, riders names
 - If driver: route with markers for passenger location, rider names
 - Group Recommendations for future trips
 - When Clicked: Display different trips
 - When a trip is clicked: see my recommend groups for user to confirm or decline
 - If Decline: Go to manually create group page
 - If Accept: Add user to group and rerender future trips
 - Link back to group view page
 - Previous Trips
 - When Clicked
 - Display summary of each trip: date, time, direction, group members
 - Go to review page
 - Drop Down menu
 - Profile/Preferences settings
 - Link back to pages
 - Friends List
 - Messaging
 - add "scheduling trips"--specifying what time to arrive/leave campus each week. Usually, this can be done once a semester, plus some refinements if needed.

I suggest, as before, to incorporate NSEW into names so that they can help you check the output for groups. For example, they can be last names. I have heard of last names that are North and West. Looks like East and South can also be last names. Also, preferences can be incorporated as first names. For example,

North, AliceSG // SG means Same Gender

...

North, DaisySG

should be in one group in the North region. Or

West, AlanNS // NS means No Smoking

...

West, DanielNS

should be in one group in the West region. The rest could be no Preferences.

I discussed that group recommendations are generated a week beforehand, that is, triggered by time. For now, you can add a button to sysadmin to simulate that. That is, sysadmin manually starts/triggers group recommendations.

11/21/2024

- **Group Recommendation**

- Modify test users so that we have a known output and check if algorithm generates what the known output
 - Modify test users script to show users gender in name
- Start by testing one direction at a time, IE North First then add south, then add east and west
- First Iteration - direction north & same gender and west & smoking

- **Home Screen**

- **Analogy to Airline ticket (on the day of you check in or cancel but before you can only cancel not check in)**
- Instead of making user confirm each trip, set them to confirmed automatically and allow them to **cancel** if they need to, change button from **decline** to **cancel**
- For future trips you can cancel
- For today's trips you can check in
- **Evaluation**
 - **External - time tasks for the following (objective) and how they rate the experience (subjective) rate each section and an overall rating**
 - **Setup Account & Schedule**
 - **Before the Trip**
 - **During the Trip**
 - **Rider**
 - **Driver**
 - **After the Trip**
 - **Internal - software testing**
 - **Recommendation Algorithm**
 - Must have expected output and check how it matches created output
 - Go back to Group Recommendation section to see how this is recommended to be done

Faculty Advisor Signature: _____ Date: _____