

D5: Prototype + Evaluation

Topic area: Transportation

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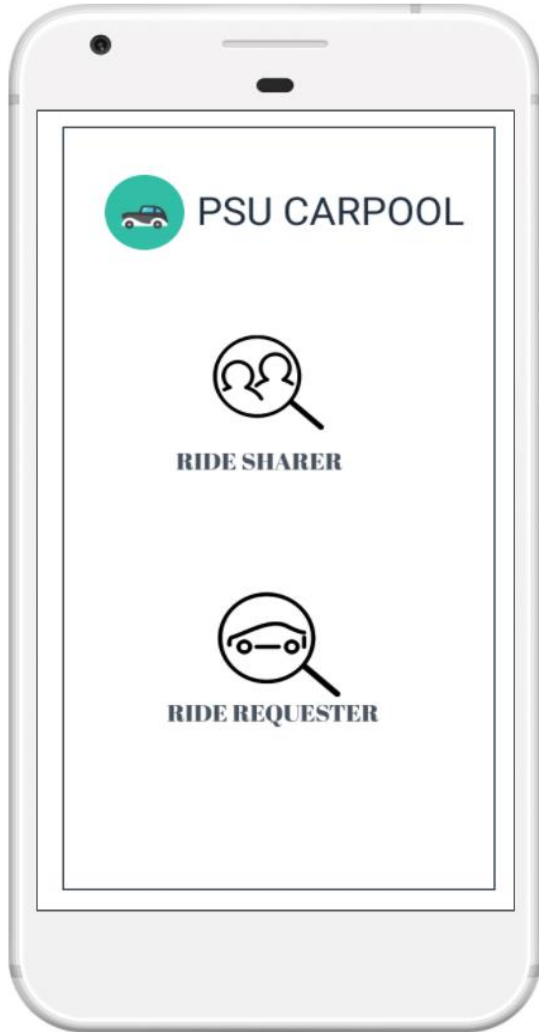
Pravallika Kavikondala, 962064348

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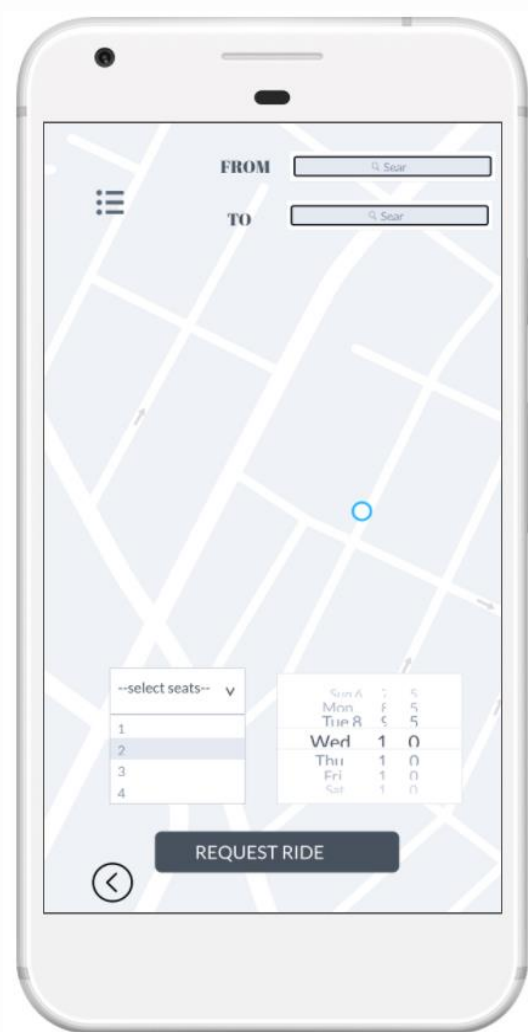
Part 1 : Pictures & description of prototype

Carpool App allows the users to either share the ride or request a ride to PSU Campus. This prototype is developed for evaluating the workflow in requesting a ride. This prototype is developed using POP App. Development using this app makes the actual prototype design easily understandable as it emulates how an app works and it also helps in evaluating the prototype with actual end users.



Picture 1

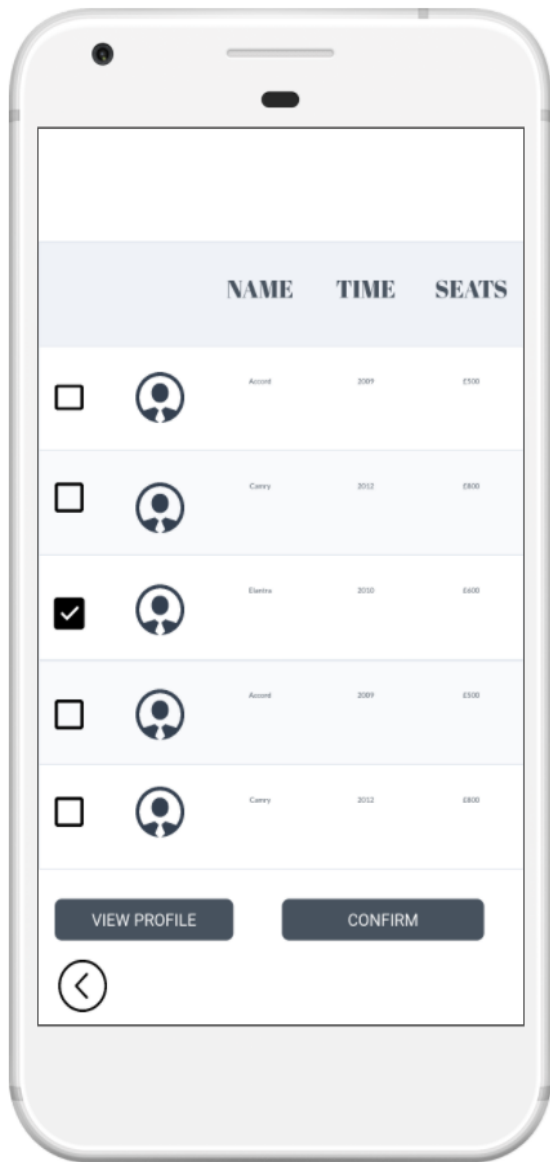
Picture 1: Carpool App home screen



Picture 2

Picture 2: Screen for users to input details and request a ride

When user clicks on '*Ride Requestor*' on home screen, it redirects to next page. User enters from and to locations, no.of seats needed and time of pick up and hits on '*Request ride*' button.



Picture 3

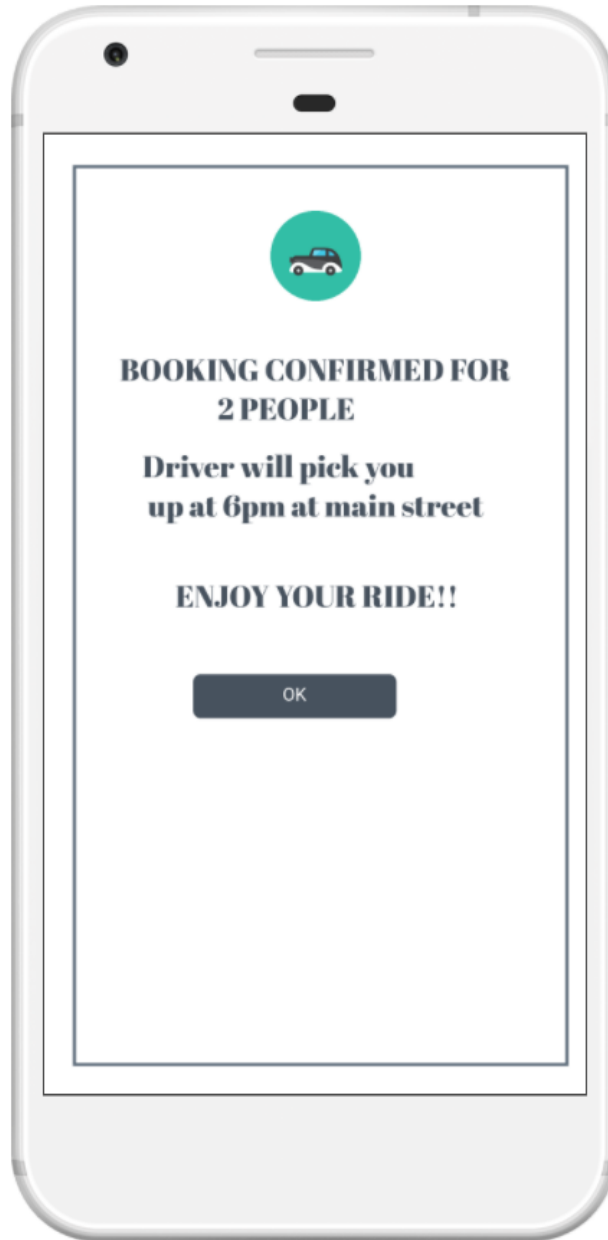


Picture 4

Picture 3: List of all available rides.

Picture 4: Driver's Profile

User selects one among the available rides and can click either on '*confirm*' or '*view profile*' buttons. If the user clicks on view profile, driver's details are available to the user. User can confirm the ride on this screen or can navigate back to the previous screen select a different user and confirm the ride there.



Picture 5

Picture 5: Detailed summary of the ride is displayed.

When users clicks on ‘*ok*’ button it goes back to home screen of the app.

Part 2 : Summary & Next steps

We conducted cognitive walkthrough and heuristic evaluations on the developed prototype design. We found few issues in the wordings of the app and few workflows which would cause confusion to the users. Also we found that few features which the users would expect were missing out. If we had more time towards designing this app, We would change few workflows and add some extra features. We would add car model selection and more clear description of options. Also the driver ratings would be made more justified by adding a feature to include compliments/comments to the driver. These features are made in response of feedback obtained from evaluating the prototype. The app navigation is pretty clear and consistency of icons placement is achieved. Flexibility for user is obtained by providing '*confirm*' button in both view profile page and in the page of available rides. We need not change the UI design. We would like to conduct more evaluations before changing the design as feedback obtained from more no.of people is much effective and enhances the details of what users are expecting to make the design more accessible.

Part 3 : Reflection

Prototyping experience reflection:

Initially we took some time to decide how to create prototypes for our app. Prototyping was easier to accomplish as we already had an idea about the app during storyboard sessions. Also the app which we used to make the prototypes made the prototypes look good. We started prototyping on paper and did not work well so later switched to an app.

Evaluation Process reflection:

In every evaluation we were able to see the app from different users perspective. We could find few features or absence of features which would cause issue for novice users. The problems mentioned are different. Some are problems that last for long-time if not corrected. All the evaluations were equally helpful as they all gave us new insights. Different evaluations mentioned the features that are to be modified or that are to be retained in the design.

Next time we would do a more detailed prototyping including more screens and feature selections. As for evaluation we would conduct more evaluations. Also we think it would be better if we can conduct evaluations together as a team. We learned about prototyping and evaluating the prototypes. After the evaluations were done we understood how much thought has to be put in creating prototypes. Even though we were very confident about our design we could still find many minor issues with our design, most of which would affect only the novice users. So we learned that when designing prototypes we have to always keep the trade offs of each feature and options in mind and give our best result.

Part 4 : Appendix

Self-reflective evaluation 1:Cognitive Walkthrough Report (CWR)

CWR Number: 1
Product Name: PSU Carpool App
Task Name: Requesting shared ride
Date and Time of Study: 3/10/2018 04:00 PM – 05:00 PM
Experimenters' Names: Pravallika K

Task Description:

I want to request a ride using the Carpool App to PSU from my current location at 04:30 PM today.

Task Action Sequence:

1. User: Open the PSU Carpool App.
System: Displays home page of the app.
2. User: Click on 'Ride Requestor'
System: Displays screen for user to input required details for the ride.
3. User: Enters 'From' and 'To' location, number of seats and time of pickup. And click on 'Request Ride'
System: Redirects to screen which displays Available rides at the specified time.
4. User: Select one driver and click on 'View Profile'.
System: Displays driver information page.
5. User: I want to change my driver selection. So I click on the back button.
Phone: Returns to the previous page.
6. User: Select a different driver and click on 'Confirm'.
System: Redirects to booking confirmation page which displays ride summary.
7. User: Click on 'OK'
System: Redirects to Home Screen

Interface/tool/system description:

The application is a mobile app which can be used by PSU students/faculty to share rides. There are options for ride sharing and ride requesting. In ride requesting, the user can input from and to locations, time and number of seats and select a driver. In ride sharing, the user can accept or decline incoming requests which he receives based on the time, date and seat availability he inputs.

Cognitive Walkthrough (Wharton et al, 1994):

1. User: Open the PSU Carpool App.
System: Displays home page of the app.

CW Question	Issue?	Notes
Will the user be trying to achieve the right effect?		
Will the user know that the correct action is available?		
Will the user know that the correct action will achieve the desired effect?		
If the correct action is taken, will the user see that things are going ok?		
General Notes:	The UI is very simple and there are only two choices which is very evident.	

2. User: Click on 'Ride Requestor'
System: Displays screen for user to input required details for the ride.

CW Question	Issue?	Notes
Will the user be trying to achieve the right effect?		
Will the user know that the correct action is available?		
Will the user know that the correct action will achieve the desired effect?		
If the correct action is taken, will the user see that things are going ok?		
General Notes:		

- 3 User: Enters 'From' and 'To' location, number of seats and time of pickup. And click on 'Request Ride'
System: Redirects to screen which displays Available rides at the specified time.

CW Question	Issue?	Notes
Will the user be trying to achieve the right effect?		
Will the user know that the correct action is available?		
Will the user know that the correct action will achieve the desired effect?		
If the correct action is taken, will the user see that things are going ok?		
General Notes:	Users can see that their selections are accurate from the map and they can also select seats and time from the page	

- 4 User: Select one driver and click on 'View Profile'.
System: Displays driver information page.

CW Question	Issue?	Notes
Will the user be trying to achieve the right effect?		If the user by mistake selects more than a driver and tries to click on the confirm button or view profile it will be greyed out. The user will not understand what went wrong.
Will the user know that the correct action is available?		
Will the user know that the correct action will achieve the desired effect?		For the first-time user does not know what to expect in the View profile page.
If the correct action is taken, will the user see that things are going ok?		
General Notes:	The user may have clicked view profile thinking he will have to come back to confirm. He will not know first time that there is a confirm button in Profile detail page.	

- 5 User: I want to change my driver selection. So I click on the back button.
Phone: Returns to the previous page.

CW Question	Issue?	Notes
Will the user be trying to achieve the right effect?		On using for the first time will the user notice the back button? What if they think that the only option is Confirm.
Will the user know that the correct action is available?		
Will the user know that the correct action will achieve the desired effect?		The user may think that clicking on back button takes you to the Screen 2(User Input page) and not to Driver selection.
If the correct action is taken, will the user see that things are going ok?		
General Notes:		

- 6 User: Select a different driver and click on 'Confirm'.
System: Redirects to booking confirmation page which displays ride summary.

CW Question	Issue?	Notes
Will the user be trying to achieve the right effect?		
Will the user know that the correct action is available?		
Will the user know that the correct action will achieve the desired effect?		
If the correct action is taken, will the user see that things are going ok?		
General Notes:		

- 7 User: Click on 'OK'
System: Redirects to Home Screen

CW Question	Issue?	Notes
Will the user be trying to achieve the right effect?		
Will the user know that the correct action is available?		

Will the user know that the correct action will achieve the desired effect?		
If the correct action is taken, will the user see that things are going ok?		
General Notes:	What if the user change their mind and wants to cancel the ride? How does the user know at what time they will reach their destination?	

Potential fixes for discovered problems:

1. When user by mistake selects more than a Driver the 'View Profile' and 'Confirm' buttons get greyed out. User may not understand why this happened

This can be fixed by providing pop up messages asking the user to select a single driver
2. Visibility issue of back button in View Profile page

We can create back button which looks similar to confirm button, so that more attention is given to it on seeing it for the first time.
3. User cannot cancel a ride after confirming

There should be option in the app to cancel the ride in home screen so that they can cancel a ride anytime
4. There is no estimated time of arrival mentioned in Ride summary

The approximate time of arrival should be displayed with Ride summary

Self-reflective evaluation 2: Heuristic

UAR Number: 1
Product Name: PSU Carpool App
Date and Time of Study: 3/8/2018 8 pm
Experimenters' Names: Matthew Balleza
Subject ID: 1

Subject Details: 23yrs old and PSU student.

No. HE 1	Good Aspect
Name: Flexibility and efficiency of use.	
Evidence: The placement of certain buttons is efficient for a user.	
Explanation: <p>This heuristic is met in several ways. First, the “Confirm” button is consistently placed on the bottom right or center right of the view screen. Users who frequently use this app will become familiar with the confirm button placement. The right side is convenient in that users are predominantly right-handed and will use their thumb to press buttons when using one hand.</p> <p>Second, the back button is consistently placed on the bottom left or center left of the view screen. Similarly to the confirm button, users will become familiar with the placement. Using the same argument for right-handed users, the back button is placed on the left since it would theoretically be used less often than the confirm message, but is placed on the bottom since it is within reach for a right thumb when used one-handed, or neatly under the left thumb if using two hands.</p> <p>Third, most of the other buttons are on the bottom half of the screen. This is within ease of reach for thumbs. The only button that requires more reaching is the menu button on the map page. It is likely that users will not use that menu button as often as the others.</p>	
Benefit: Rating: NA Description: Buttons are one of the main event-driven components of the app. They will be used often. The placement of buttons is convenient for the user in that consistent placement will allow them to develop a pattern of use quicker. The user will remember the placements and can go through confirm actions at a quick pace.	
Possible solution and/or trade-offs: A possible trade-off could be moving the “From” and “To” text fields lower so that it is easier for the user to reach those as well.	
Relationships:	

Think aloud session 1 :Usability Aspect Report (UAR)

UAR Number: 1
Product Name: PSU Carpool App
Date and Time of Study: 3/11/2018 10:00 am - 11:00 am
Experimenters' Names: Krishna Priya
Subject ID: 1

Subject Details:

23 year old PSU student who travels to PSU in Trimet

No. UE 1	Problem
Name: The meaning of options in home screen are not very clear.	
Evidence: The problem is with the captions given to the two options in home screen of the app. Also in the images provided for the options are confusing to new users.	
Explanation: The word 'Ride sharer' and 'Ride requestor' may sound similar. User may not understand which option stands to request a ride. Also in the images provided, as the image provided for ride sharer has multiple people in the icon the user may think that it is used for carpool. And the other image has car image in it, which may mean to search for a ride.	
Severity or Benefit: Rating: 3 = Major Justification (Frequency, Impact, Persistence, Weights): Frequency : This problem will be frequent with novice users. On using the app for the first time the words and images will mostly cause confusion as they sound and look similar. Impact : This problem will have low impact. Even if the user selects the wrong option, once they reach the next page they will understand the mistake and can go back to previous page. Persistence : The problem will not persist throughout usage. Once user understands what each option stands for it is highly unlikely to make mistake again. Weights : The problem was rated as major one because it will occur most likely for novice users. So it is important not to cause confusion with new users. So it would be better to redesign this.	
Possible solution and/or Trade-offs: Solution will be to change the captions from 'Ride requestor' to 'Request carpool' and 'Ride sharer' to 'Accept carpool rides'. This will remove the confusion with captions. Images can be eliminated to make the confusion less. A trade-off of removing the image will be that the home screen looks less interesting. Even the changed names may still cause confusion as to what it means.	
Relationships: No relation	

No. UE 2	Problem
Name: On seeing the list of drivers user does not know how to evaluate them.	
Evidence: In the screen where the list of available drivers are listed, users would expect a rating so that they could select the best driver.	
Explanation: User will be able to see a list of drivers listed but will not understand how they can they know more about the driver or how they can evaluate who is better.	
Severity or Benefit: Rating: 1 = Cosmetic problem only Justification (Frequency, Impact, Persistence, Weights): Frequency : This problem will not be frequent with users. On using the app for the first time few users may miss it. Some users may see the View profile button and click on it. Impact : This problem will have very low impact. Even if the user cannot see the rating of driver still they will be able to book a ride. Persistence : The problem will not persist throughout usage. Once user gets familiar with app, it is highly unlikely to miss profile option again. Weights : The problem was rated as cosmetic one because it does not have high frequency or impact or persistence.	
Possible solution and/or Trade-offs: Solution will be add ratings also in the drivers list page. Trade off will be that the page may be filled with too much data and it will not look good.Which may lead to more confusion later	
Relationships: No relation	

No. UE 3	Problem
Name: Car model is not shown	
Evidence: In the screen where the drivers are listed the users will expect to see the model of car also.	
Explanation: In none of the screens the model of car is not shown.The users may prefer to ride in specific model of cars	
Severity or Benefit: Rating: 2 = Minor usability problem Justification (Frequency, Impact, Persistence, Weights): Frequency : This problem will not be frequent with users. Only some users may have a preference for the car model. Impact : This problem will have very low impact. Even if the user cannot see the car model they	

can still book a ride. Persistence : The problem will persist throughout usage Weights : The problem was rated as minor one because it does not have high frequency or impact but it has persistence.
Possible solution and/or Trade-offs: Solution will be to add car model also in the drivers list page. Trade off will be that the page may be filled with too much data and it will look filled with data
Relationships: No relation

Think aloud session 2 :Usability Aspect Report (UAR)

UAR Number: 2
Product Name: PSU Carpool App
Date and Time of Study: 3/11/2018 6pm
Experimenters' Names: Pravallika Kavikondala
Subject ID: 1
Subject Details: User is 22yrs old and he is working as an intern in Nike company near Beaverton. User has a good experience in using mobile apps.

No. UE 1	Problem
Name: Missing feature – viewing booked rides	
Evidence: User can book a ride for the next day specifying the time. But he cannot see booked ride summary later as it is provided only after ride confirmation.	

<p>Explanation:</p> <p>This interface does not support user to view the pre-booked ride summary. There should be an option provided to the user to view all the booked rides for later use.</p>
<p>Severity or Benefit:</p> <p>Rating: 3 = Major</p> <p>Justification (Frequency, Impact, Persistence, Weights):</p> <p>Frequency: Common Problem because users may want to see their ride history. This is a common problem faced even if it a new user/experienced user.</p> <p>Impact: It is difficult for user to overcome this problem without getting fixed and they cannot achieve their intended goal.</p> <p>Persistence: This problem will re-occur until it is fixed as it is a design issue.</p> <p>How I weighed the factors:</p> <p>It is a common problem and hard to overcome until fixed and it occurs again and again. It is better if we add this feature to make user interactivity more.</p>
<p>Possible solution and/or Trade-offs:</p> <p>Solution to this problem is to have an option to view ride summary of all the pre-booked rides. If it is a current ride, the summary details need not be saved.</p>
<p>Relationships: No relation</p>