**Introduction to Human Computer Interaction**
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**Lecture – 26**
**busKARO**

Hey guys, this is team busKARO, and we are building an android mobile application to get real time bus transit data, so that people could know how much time it will take for the bus to reach their stop.

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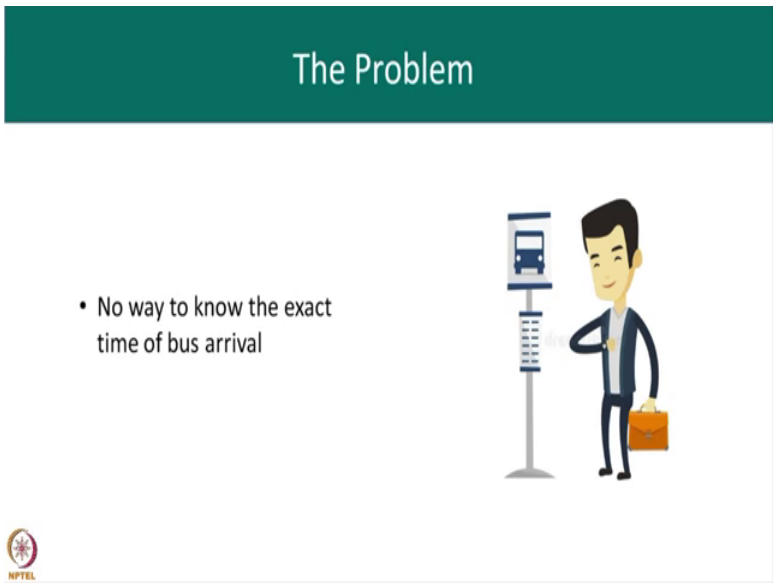


Buses take up 90 percent of the public transportation in Indian cities. The number of commuters in Delhi bus transports is twice as compared to the people in Delhi metro.

Yet while metro (Refer Time: 00:38) is constantly raising bus (Refer Time: 00:41) is on a decline this is because the users do not know the real data of bus transportation. We have survived over 50 people to establish the validity of the problem.

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Bus travelers felt that long waiting time at bus stops was a common problem. We conducted contextual enquiry to investigate this problem further. We found that most people either know the bus numbers by experience or find them out by asking people at the bus stop.

Some people also complained about the inaccuracy of the scheduled timings in apps like Google maps; Bus on the same route run infrequently, so the waiting time for travelers can even stress to 30 minutes.

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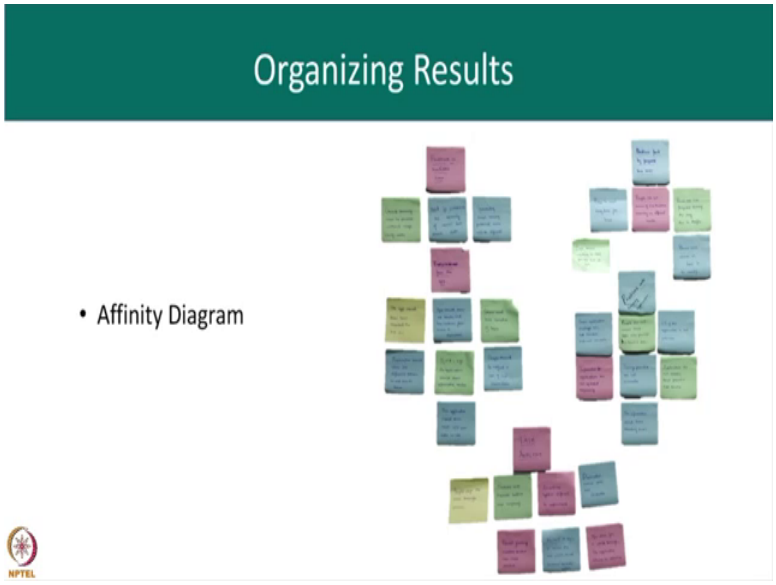

We organize the results of our contextual enquiry within affinity diagram. Affinity diagramming help us to narrow down several aspects of the problem and come up with a solution. It also provides us a better interface to gather all data and synchronize all data at one place.

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Our solution busKARO is a mobile app that solves the issue of lack of real time bus transit data. Most (Refer Time: 01:57) buses have GPS installed in it, but the data is not available in public domain. And therefore, our app realized on crowd sourcing together information about timing of buses. We came up with two options busKARO and busKARLI, which works on an incentive base system; busKARO allows the users to view the ETAs of the buses, and some credits are deducted.

On the other hand busKARLI allow the users to share his or her bus transit data rewarding the user with some credits. So, if a user is standing at the bus stop and does busKARLI, so other users on other bus stops will we will get to know the bus has left their bus stop and accordingly we will be able to predict their ETAs, so that other users may help may get help by that.

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After ideating on the feature of our app we started the prototyping phase. This is the iteration phase. We came up with the low fidelity paper prototype to illustrate our ideas. We added interaction using proto dot i o and presented this prototype to several users. We iterated on this prototype to incorporate user feedback. So, on the screen as you can see, one tap contains the iteration one, and the other contains the iteration three. In total, we did three iterations and we presented all three iterations to the users.

On each iteration there is user feedback which we got, all the changes as given as feedback given by the users when incorporated in the next iteration. Initially, in iteration one after clicking accept to share location, we go through the features screen in which we explain what are app actually does.

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That is get real time data of buses running on your route and help others to board their bus on time by pressing boarded, which is actually the busKARLI button.

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On pressing sign in and choosing an account, we go to the home screen.

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In iteration three after pressing get started we go through the features screen.

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Many users gave us the feedback that they were not able to understand the meaning of busKARO and busKARLI buttons. So, we thought of explaining the meaning of these buttons in the feature screen in a detailed manner. So, in the feature screen, as you can see use busKARO credits to track your bus with real time data, and share the status of bus to earn busKARO credits by pressing busKARLI.

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So, by this users will now get an idea of what actually the busKARLO and busKARLI buttons do which initially the users had a confusion when we tested our iteration one with that.

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So, on the fourth swipe, we go to the Gmail account page on clicking the Gmail account and allowing the device location.

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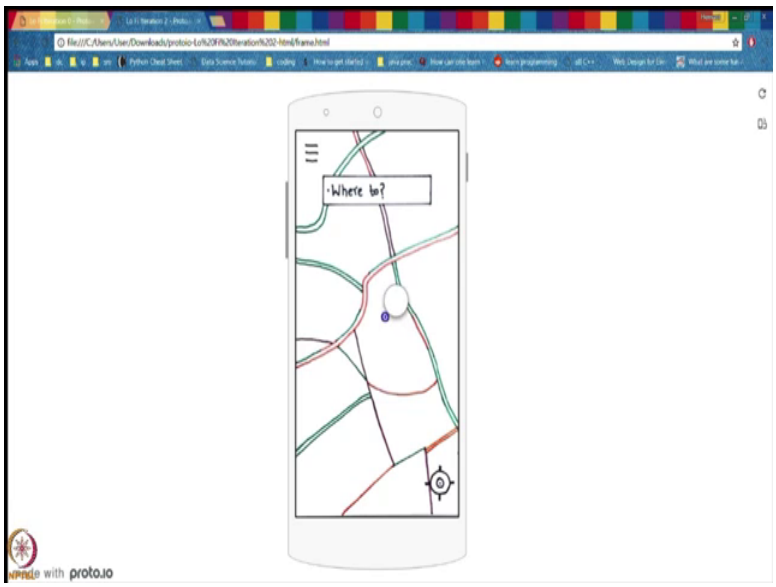


We go to the home screen in iteration one the only the users can only search by destination, but in iteration three the users can now search where both the destination as well as the bus number which helps in increasing the usability for the frequent users.

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So, as you can see in iteration one on clicking the search and by press writing [FL] and pressing the search button. As you can see we can only search by destination.

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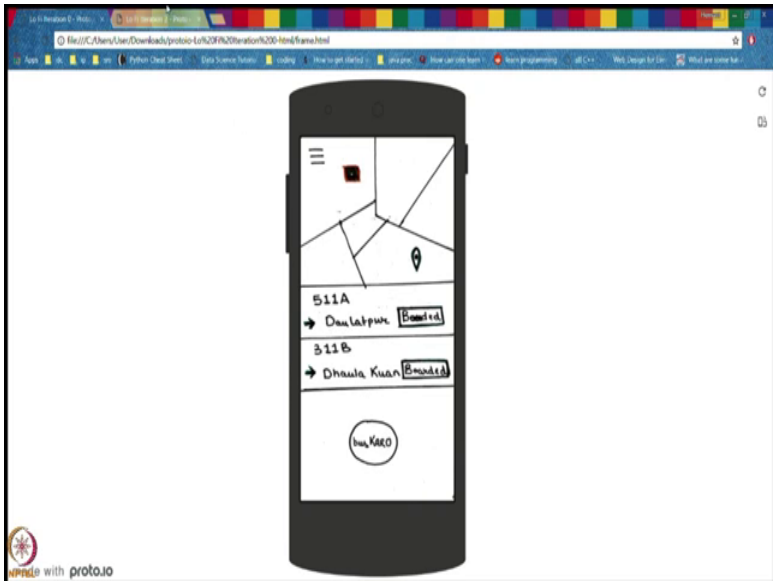


However, in iteration three on pressing where to we can search both by destination as well as bus number.

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So, on pressing bus number bus number towards Dhaula Kuan it redirects us to the page in which we get the destinations towards Dhaula Kuan from our current location.

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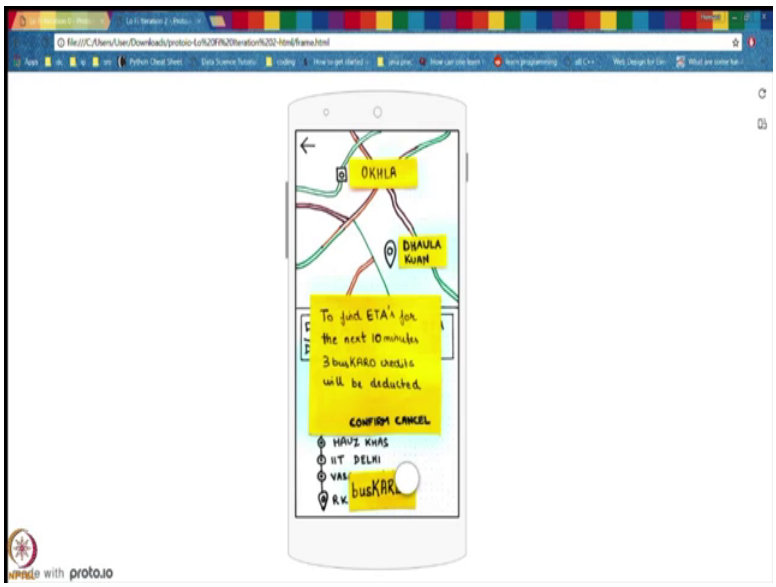


In however, in iteration one we were only we were only the were able to search by a destination and not by a bus numbers.

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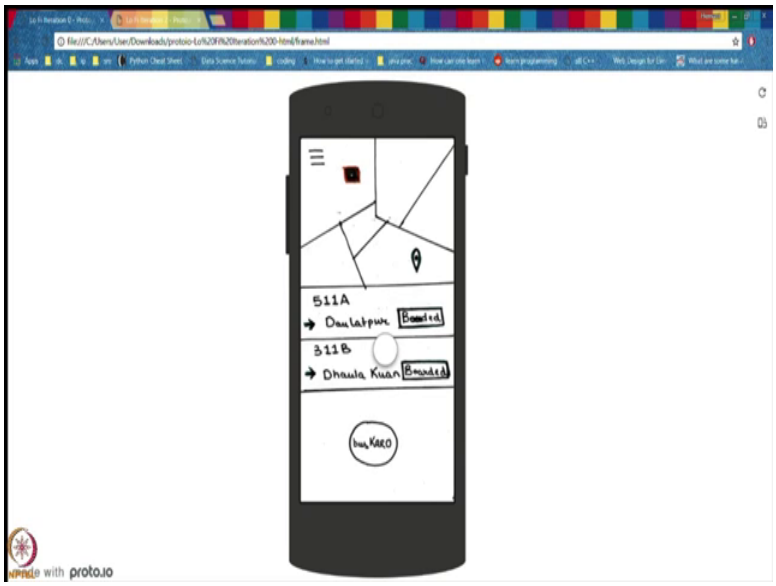


So, by providing a method by searching for bus numbers, frequent users had no problem as they can directly search bus their bus numbers on which they boarded and do a busKARLI. Also in iteration one some user could not realize what happened after clicking the busKARO button, and felt the need of a pop up which says now showing ETAs, which we implemented in an iteration three.

So, as you can see after pressing busKARO the ETAs were shown, but no pop up appeared that is where the user had difficulty whether or not the ETAs where been displayed on the screen or not. And felt the need for a pop up this therefore, in iteration three after pressing busKARLO the pop up appears to find ETAs for next ten minutes say busKARO credits will be deducted.

On pressing confirm the ETAs an now been displayed, for example, ETA 2 minutes that is it will take 2 minutes for the bus to reach their bus stop. So, by showing this pop up the user is now aware that the busKARO button has been clicked, and now the ETAs will be displayed on the screen. More over we change the button design of busKARO and busKARLI from circle to rectangle, and arrange them at the bottom of the screen to ensure high visibility.

So, as you can see in iteration one, the busKARO button is a circle and the boarded button which is actually the busKARLI button in iteration three is a trial rectangle first placed inside the car, therefore, hampering visibility. However, in iteration three the

busKARO and busKARLI buttons are rectangle and placed at the bottom of the screen , therefore, having high visibility.

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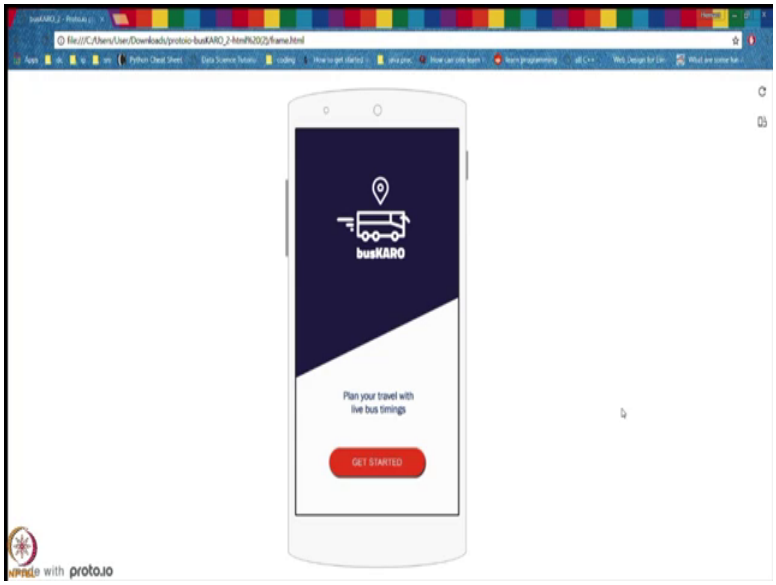


This is the high fidelity prototype of our app. Initially, there is a get started button on the screen. After clicking the get started button, we go to the feature screen in which we explain the meaning of the buttons busKARO and busKARLI.

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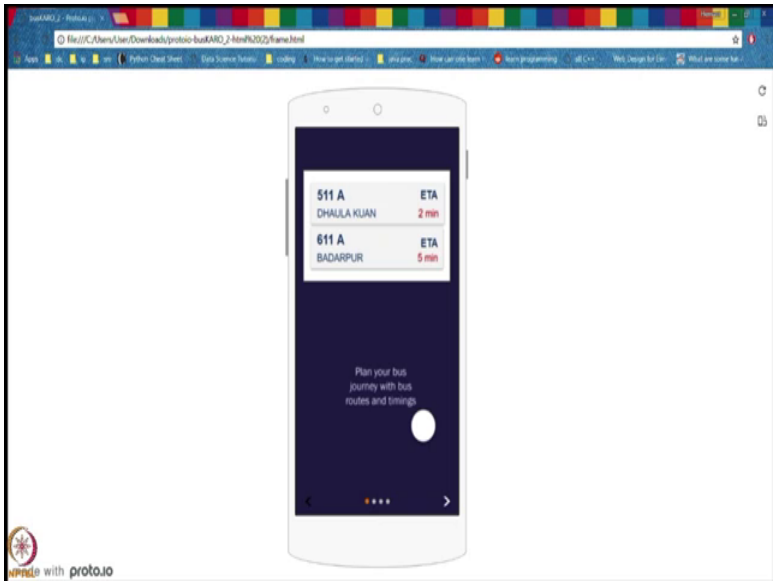


As you can see we have explained the busKARLO, busKARLI buttons shared the status of a bus non in three to one busKARO credits.

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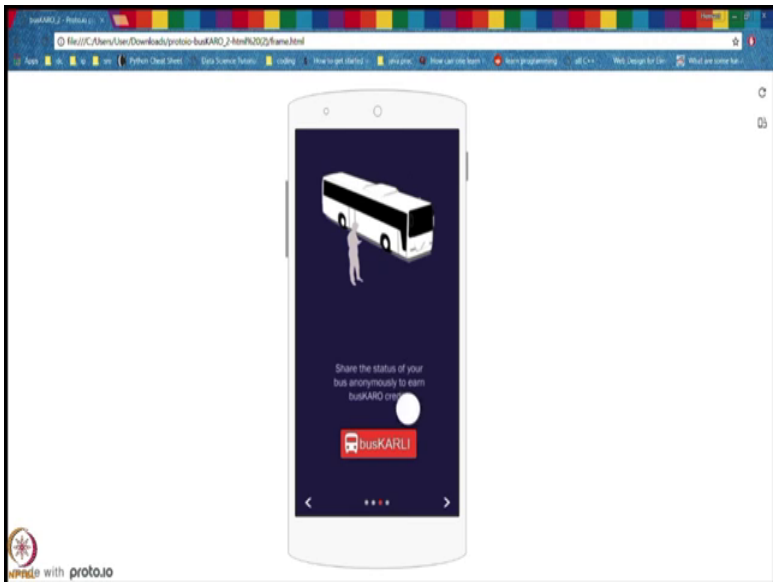


On the fourth swipe, we go to the Gmail account page; clicking Gmail allowing the access of the location and turning on location, we go to the home screen.

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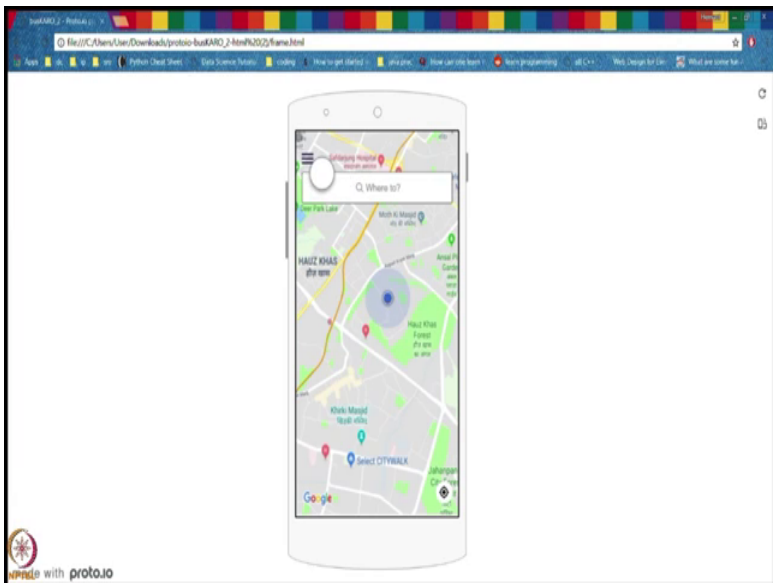


We also have a side bar navigation on clicking the account we get the account details. We can also share the app, provide feedback of the app. We can also edit our favorites in which we can add the favorite bus number and the favorite destination according to our need.

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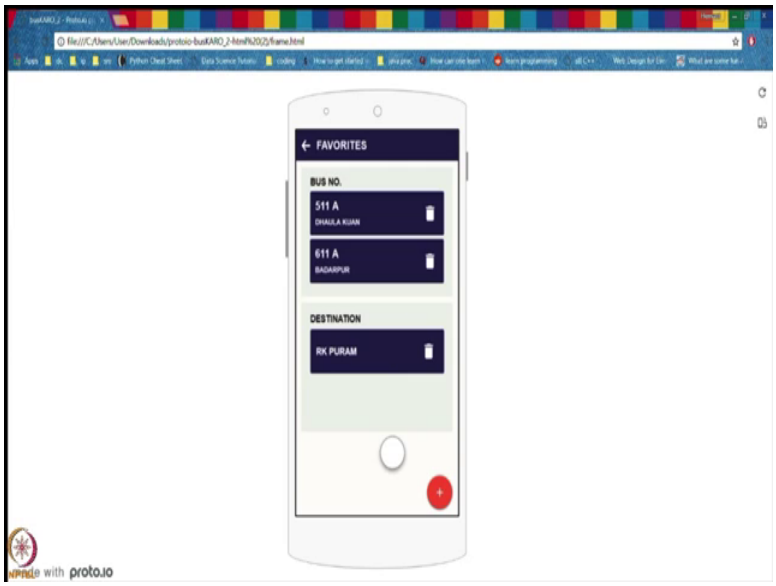


And we can also logout which will again redirect to us to the Gmail account app page. Again on clicking Gmail account, it will ask whether we can access your location or not.

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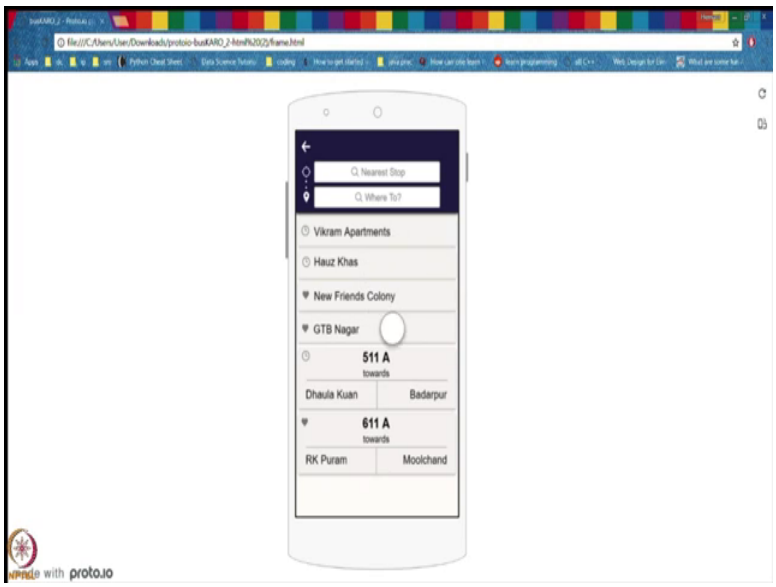


Now, on clicking where to we have two options to either select the destination by bus number or by destination itself. So, right now on clicking where to and by entering KA we get the suggestions on clicking any one of them we get the different bus which are which as going towards our destination right now RK Puram.

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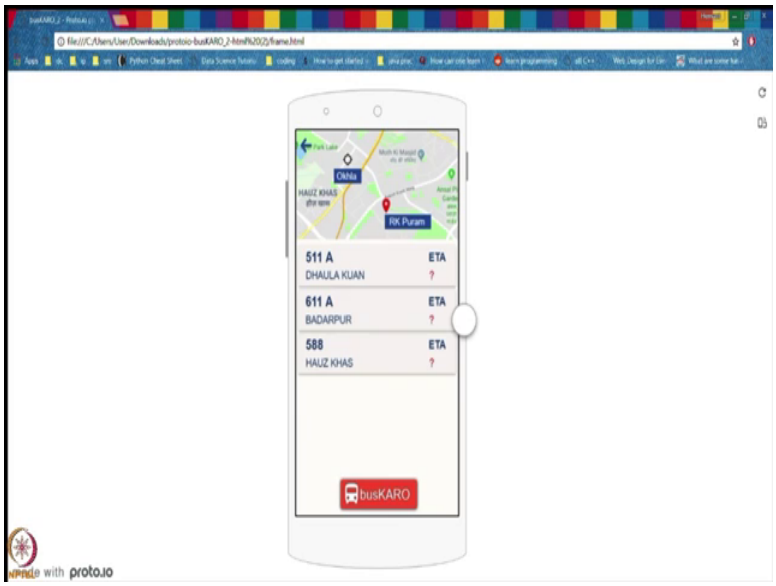


So, on clicking busKARO a pop up appears. And on pressing confirm all the ETAs are now been displayed. Now, we can select any one of the route and the route information gets displayed that is each and every destination from the current location to the destination is being displayed with the ETA.

Now, on pressing busKARLI, a pop up appears that we have earned five busKARO credits and the balance is also been shown here. On pressing ok, it again redirects us back to the home screen; now, showing bus search by bus number.

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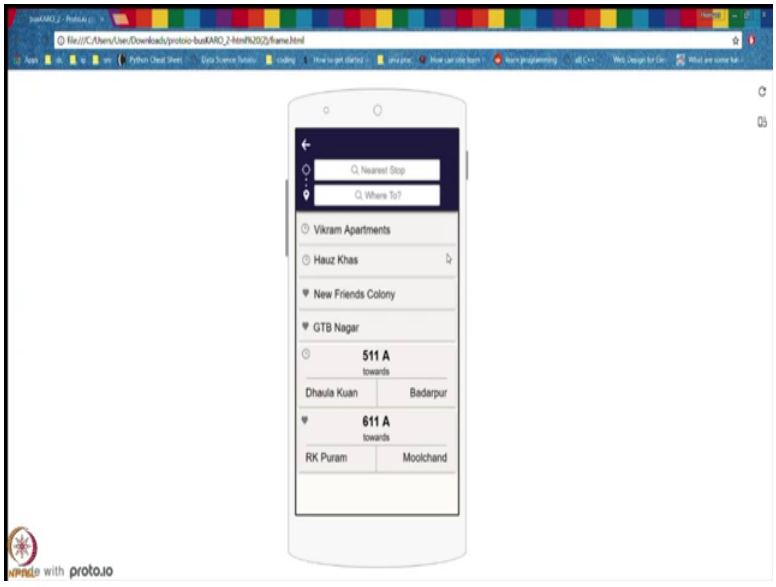

So, right now we have bus number 511A which have which one is going towards Badarpur, the other one is going towards Dhaula Kuan.

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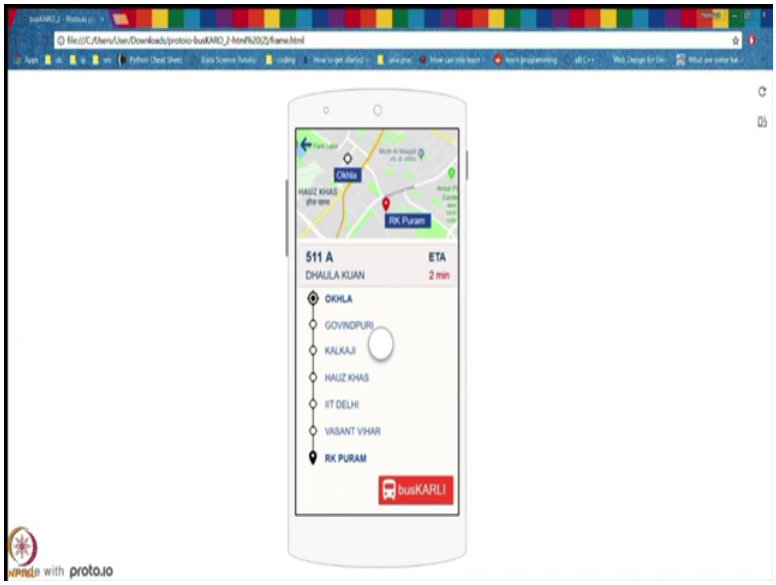


The bus towards Dhaula Kuan, the bus number appears and the intermediates station from Okhla to RK Puram which is the selected destination. And as you can see the ETAs now been displayed here without the busKARO because initially we pressed busKARO and in the pop up it said that we can now see ETA to the next ten minutes therefore, we do not have to press busKARO again on this screen.

So, we can directly press busKARLI, and we have and the pop up appears saying congratulations you have earned five busKARO credits on pressing ok, again we go to the home screen. And we can again go from the side bar and press logout.

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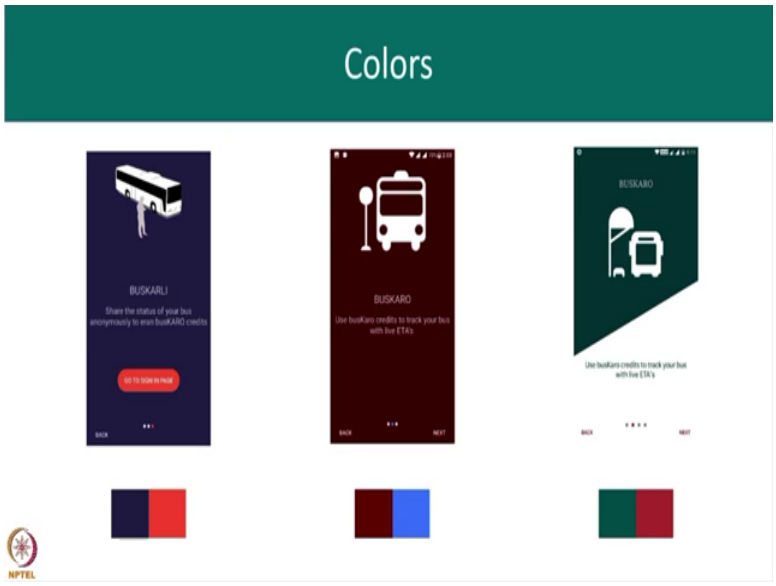


Now, coming to the color scheme of the final app; The first color scheme that we tried was the combination of midnight blue and orange. However, users found this color scheme too dark and the contrast too high between the two colors. Inspired by the UI of the other apps, we decided to switch our color scheme to a dark red and white.

Users felt the color scheme was very generic in nature; to make an immediate association between our app and transit by DDC buses we decided to take inspiration from the DDC buses which are red and green in color. After multiple rounds of testing using material design tool, we narrowed down our color scheme turquoise and red orange.