



# AcuitiMobi

## Functional Specifications

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## Functional Specification

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# 1. Introduction

AcuitiMobi is an Application where users can book their tickets inside the city through different modes of transport like Bus, Taxi, Train and they can see a list of tickets as prebook and can book ticket pay as you go as well. Users can search different locations, find routes, Select timings. The application is designed for two cities, one is London and another one is Brussels has different functionality respectively.



Mobility as a Service commonly known as MaaS concept is used, is a customer-centric platform for individuals to use as a mode of transportation. Its real-time platform basically includes different combinations of transport methods like car and bike sharing, taxis, and car rentals/leases and it offers its customers everything that is essential for an effortless traveling experience. Right from the user's travel plan to payments, all this is included in MaaS.

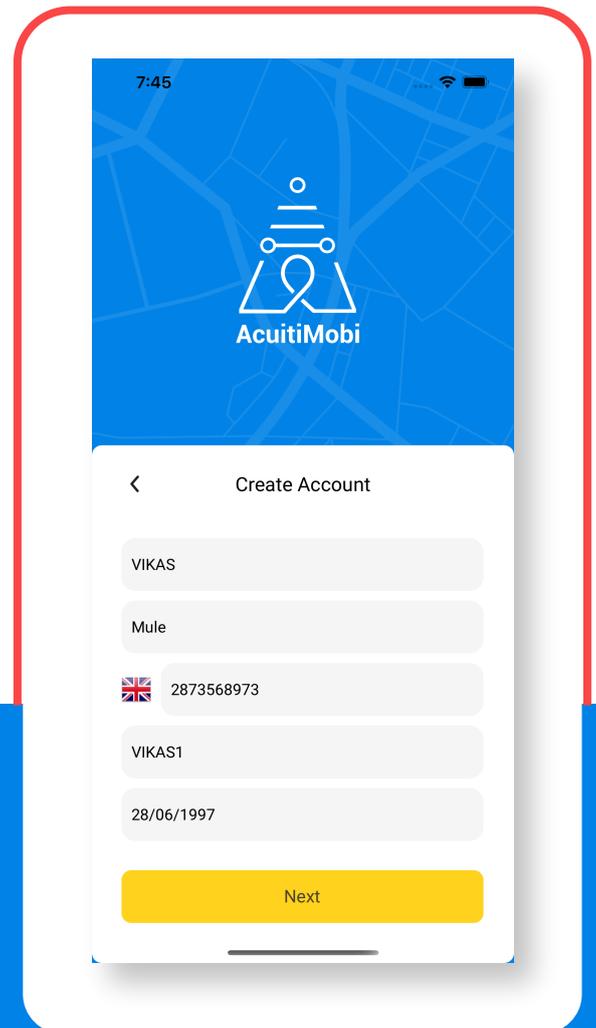
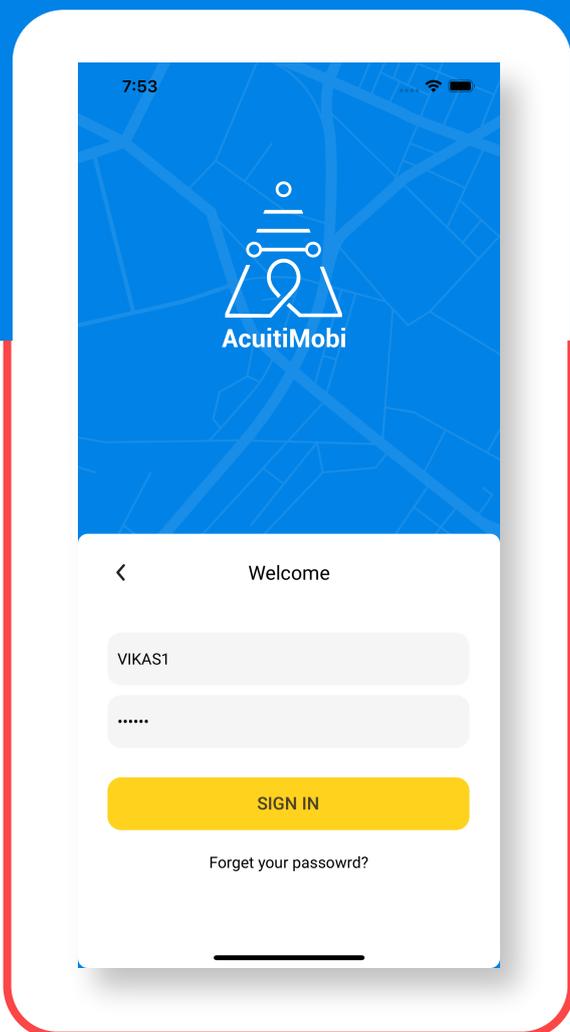
With the help of HereMap a third party framework to show different routes for different modes of transport for specific locations inside cities and stripe payment for doing payment.

## 2. List Of Features

1. Login and Registration
2. Home
3. Search Source and Destination
4. Tap-In And Tap - Out
5. My Pass - PreBook and PayG
6. Mode Of Transports
7. Detail Mode Of Transport
8. Payment
9. Setting - Profile, My Cards, Update Password
8. Forget Password
9. Update Password
10. Side Menu

### 3. Login & Registration

Users have to register to the application by providing basic details like name, email, mobile number etc. using OData service i.e. AWS we will provide these users details to the server and once the account has been created successfully the user can use the same user details to login in to applications.



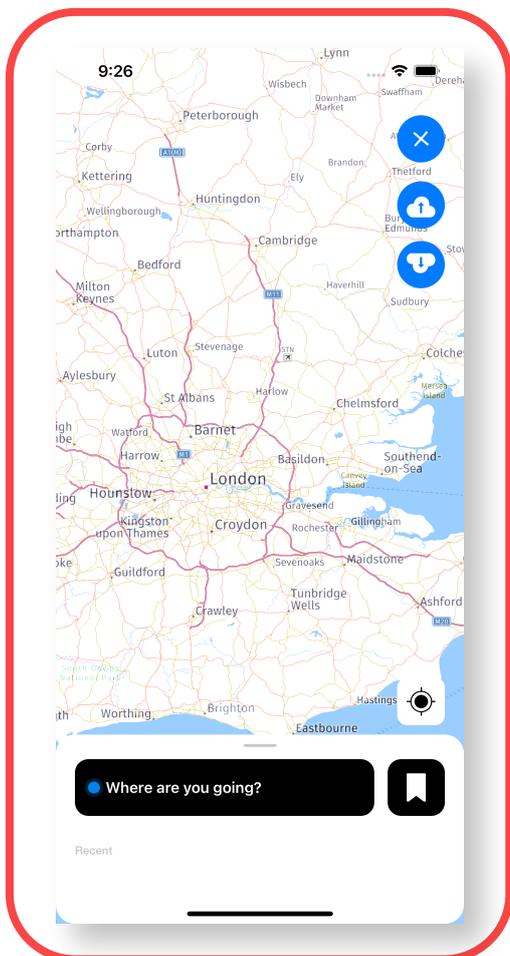
Once User got successful login then it will enter into application

## 4. Home

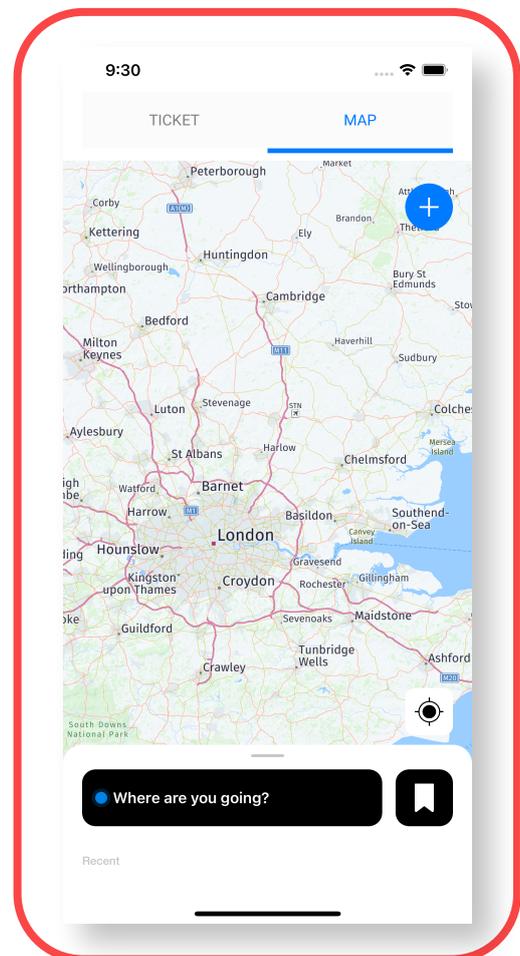
Home screen for London will have HereMap and search drawer at the bottom to search location. Users can set source/Destination by long pressing on the map and drop a pin. Can interact with a map to move or zoom-in and zoom out to set an accurate location.

Home screen for Brussels users is slightly changed with different functionality. Haveltwo Options One Ticket And Map.

### London



### Brussels



## 5. Search Location

### 5.1 Search Source and Destination

User has a Search Source and Destination screen for search locations with help of Here map's Api. Get location name with latitude and longitude. We have followed official documentation of Here map - We Refer following link.

**Link:** <https://developer.here.com/documentation>

## 6. Mode Of Transports

Request a public transit / Taxi route between any two places.

We have got Intermediate Stations on a Transit Route from here map Api and show with respectively on screen Departure time, Transport mode, Duration Time and Transport image. This screen is getting routes as per Departure time and mode of transports like - Public Transport and Taxi Transport.



### 6.1 Public Transport

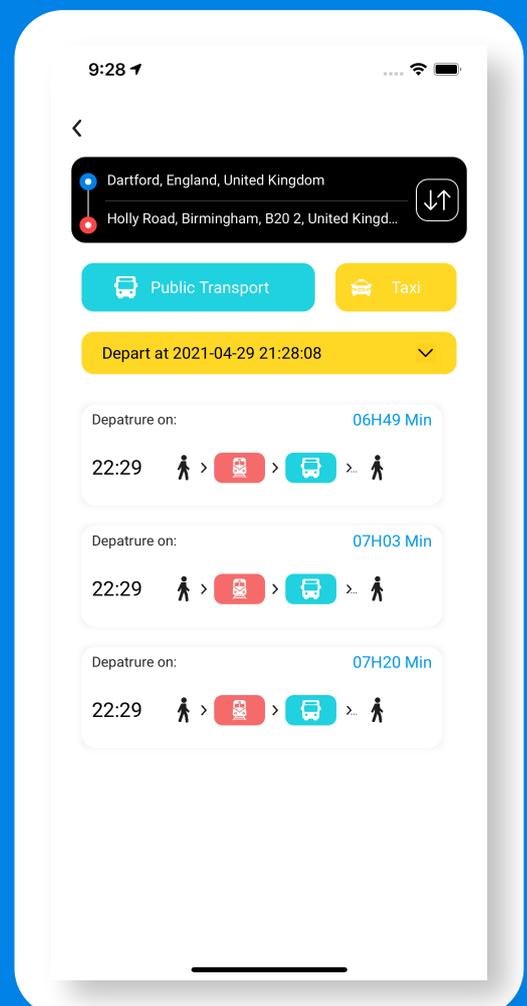
For getting routes for Public transport we have used Transit Here Map Api.

We passed the latitude and longitude and mode of transport to api for getting routes. We referred to the following Api for Public Transport.



### 6.2 Taxi Transport

For getting routes for Taxi transport we have used Intermodal router Here Map Api. We passed the latitude and longitude and mode of transport to api for getting routes. We referred the following Api for Taxi Transport.



## 6.3. Detail Mode Of Transports

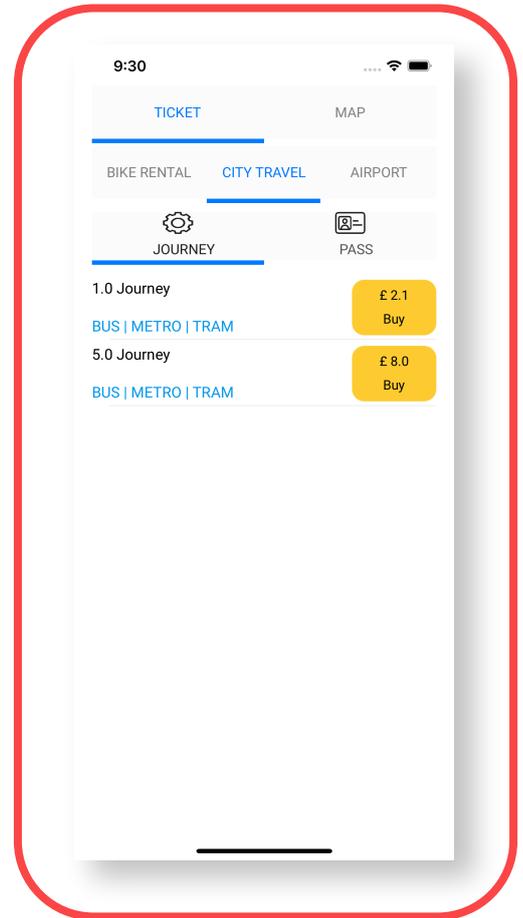
Show a public transit route Details between any two places and Required charge for routes.

### 6.3.1 . Public transit route Details

We take the section of route from mode of transport screen. And shows the detailed routes of Public transport, shows routes details like Departure time, How many legs available for routes and its details on this page.

### 6.3.2. Calculate Fare for Route

We request Backend with a SOAP request for calculate the actual fare to route and show on screen.

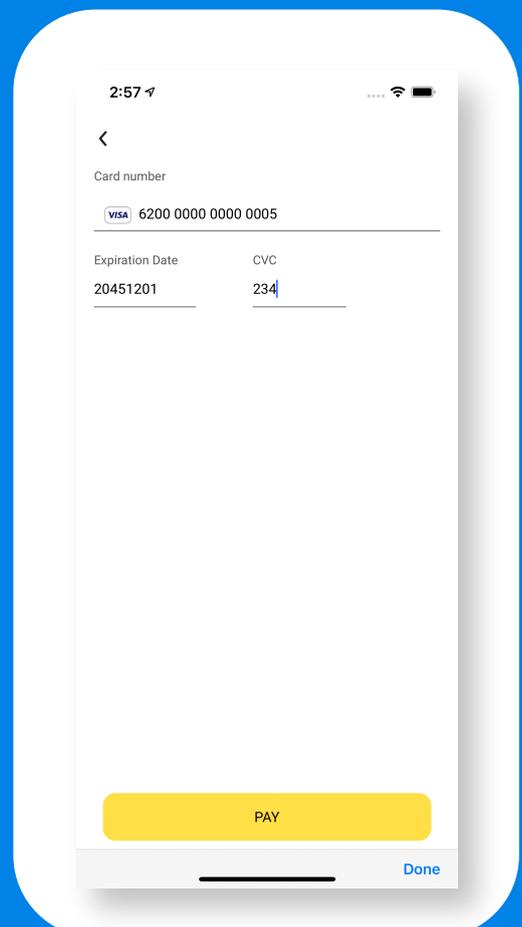


# 7. Payment

## 7.1. Update charge to stripe Server

After calculating fare, We pay the amount and purchase a ticket using Payment gateway. We have used "Stripe" Payment gateway(Third Party) to pay a chargeable amount of ticket to the server. Before paying the charge to stripe we used an add card functionality to save details of Card.

We used setup stripe payment in the backend using Visual Studio. We ran a script in visual studio to set the port where we can do payment update and charge. We write scripts in VS in server.js file. We simply run only the "NPM Start" command on the terminal. Once the command runs the port set.



## 7.2 Update Charge to AWS Server

Successfully amount updating to Stripe Payment after Make SOAP request to AWS Server for update server with request input parameter as - Source, Origin, Amount, Mode of transport, date of transaction, and Transaction id. And after a successful update we moved to the home screen.

# 8. Brussel Home

Brussels city users can see little different UI as the user landing on the home screen at the top screen is divided into two sections one is Ticket and another is Map same like London.

Ticket sections have three sections so the user can choose mode of transport according to his convenience as below are the options for mode of transport.

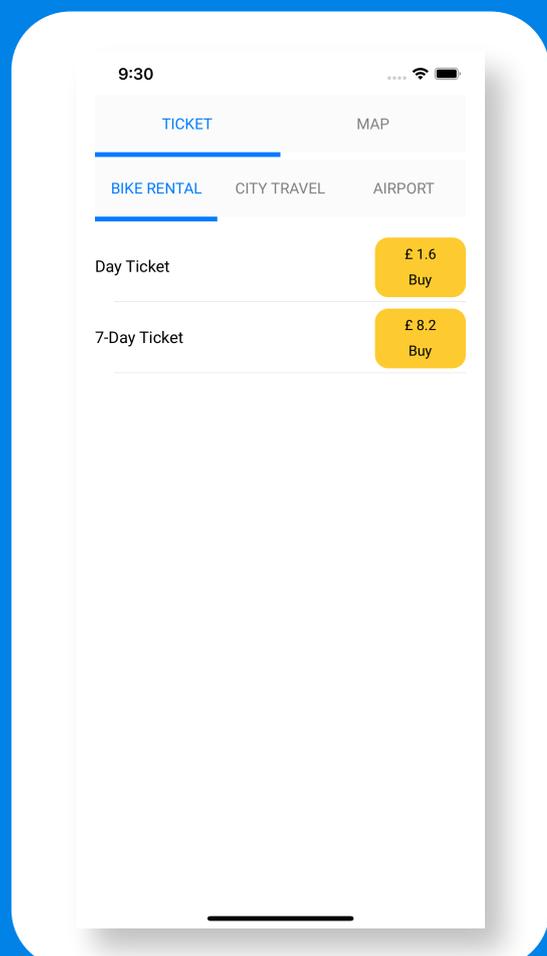
## 8.1 Bike Rental

We Make SOAP requests to AWS Server for Bike Rental Mode for Calculated Fare of routes with request input parameter as - "Bike". We get responses as to the ticket type and price. Once we get the price, we can move to the payment screen for our tickets (as the same London model.)

## 8.2 City Travel

We Make SOAP requests to AWS Server for City Travel Mode for Calculated Fare of routes with request input parameter as - "Public".

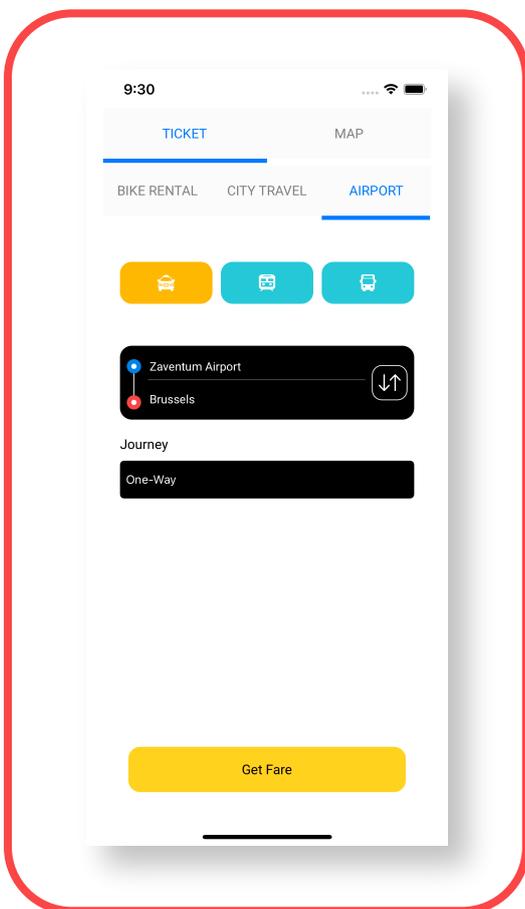
We get responses as to the ticket type and price. In City Travel there two sections journey and pass for buying tickets. We show the price, Mode of transport and number of journeys. Once we get the price, we can move to the payment screen for our tickets (as the same London model)



## 8.3 AirPort

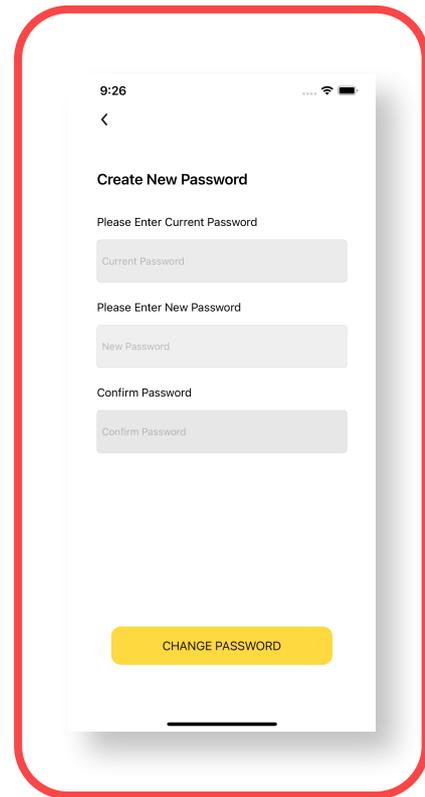
We Make SOAP requests to AWS Server for Airport Mode for Calculated Fare of routes with request input parameter as - "Airport".

We get responses as to the Mode of Transport, Origin, Destination, and journey type. For Price we can pass input parameters and filter data from Local Storage.



## 9. Update Password

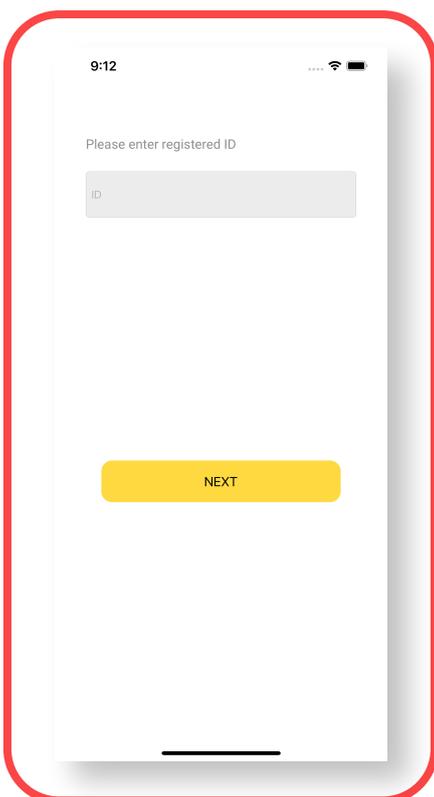
In update password screen user can update / Reset his password. Users can reset password using OData service to provide the current password and new password.



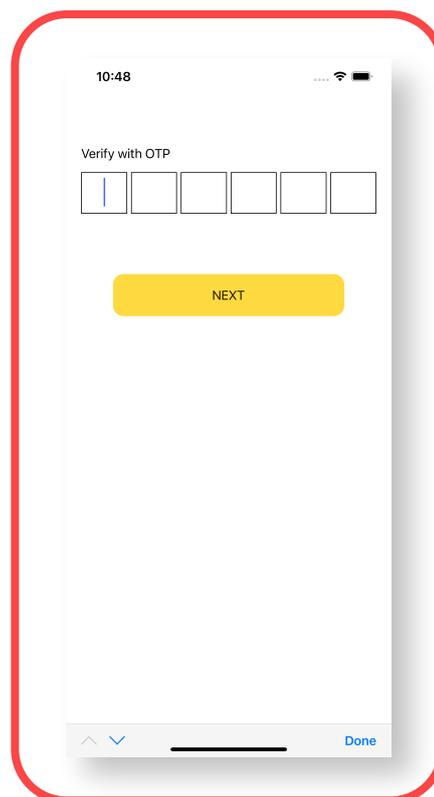
A mobile app screenshot showing the 'Create New Password' screen. The screen has a white background with a red border. At the top, the time is 9:26 and there is a back arrow. The title is 'Create New Password'. Below the title, there are three input fields: 'Please Enter Current Password' with a 'Current Password' label, 'Please Enter New Password' with a 'New Password' label, and 'Confirm Password' with a 'Confirm Password' label. At the bottom, there is a yellow button labeled 'CHANGE PASSWORD'.

## 10. Forget Password

In Forgot password screen users can also set new passwords. Users can forget passwords using OData service to provide the "UserID". In forgot password api(User Detail) user gets phone number. Move to OTP Screen and Phone number authenticates with firebase and sends OTP to Mobile for verification. Once verified with OTP User allows reset password using OData service to provide new password.



A mobile app screenshot showing the 'Please enter registered ID' screen. The screen has a white background with a red border. At the top, the time is 9:12 and there is a signal strength indicator. The text 'Please enter registered ID' is displayed. Below the text is an input field labeled 'ID'. At the bottom, there is a yellow button labeled 'NEXT'.

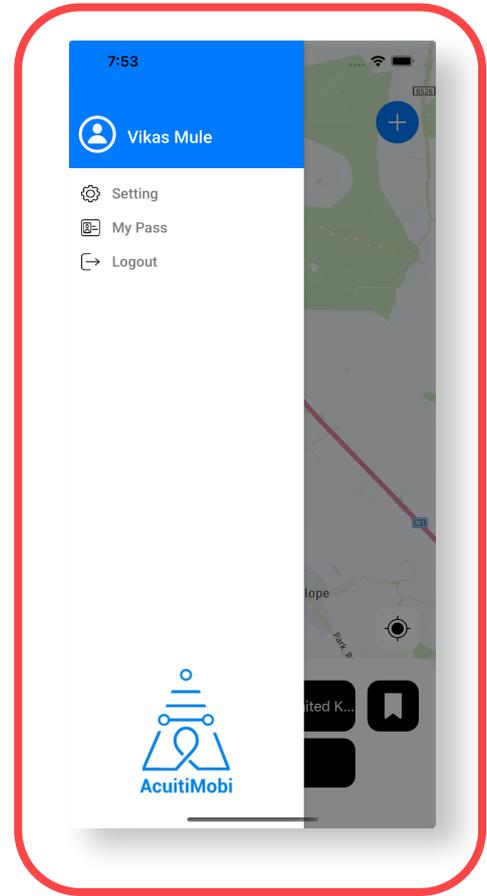


A mobile app screenshot showing the 'Verify with OTP' screen. The screen has a white background with a red border. At the top, the time is 10:48 and there is a signal strength indicator. The text 'Verify with OTP' is displayed. Below the text is a row of six input boxes for the OTP. At the bottom, there is a yellow button labeled 'NEXT'. At the very bottom, there are navigation arrows and the word 'Done'.

# 11. Side Menu

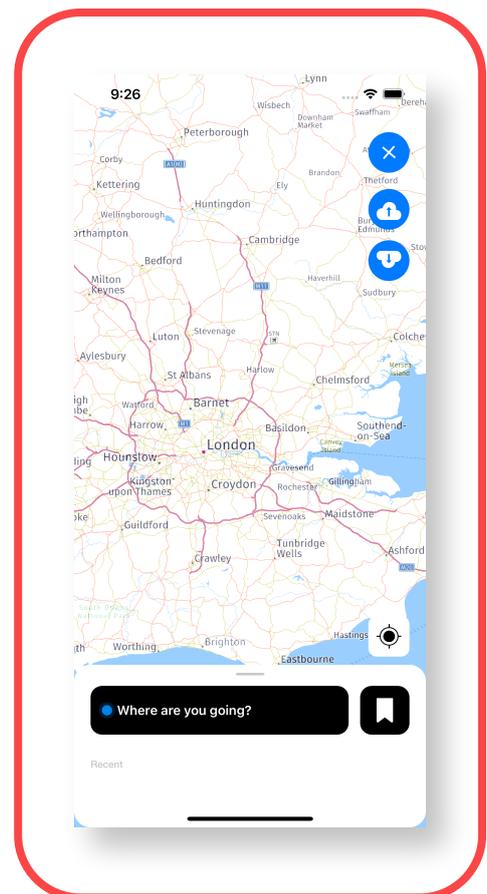
Swiping left to right on the landing screen user can see this screen with Username Setting, My Pass and Logout Option at the bottom Acuiti Labs logo.

By clicking on the setting you will navigate to User profile details and paymentmethod. My Pass option will take the user to the ticket booking screen and Log Out will throw an outside application.



# 12. Tap In - Tap Out

User can find this feature on landing screen by clicking on Plus icon a user can see two option Tap - In and Tap - Out as shown in the screen



## 12.1 Tap - In

On Click of Tap - In take users to scan QR/Select it from Gallery for specific origin it means User has started his journey and he is redeeming that QR Code.

After Selecting PreBooked QR or Scanning user will land on Tap - In screen with Origin / Source Name and Mode Of transport (BUS, TRAIN, BIKE etc.)

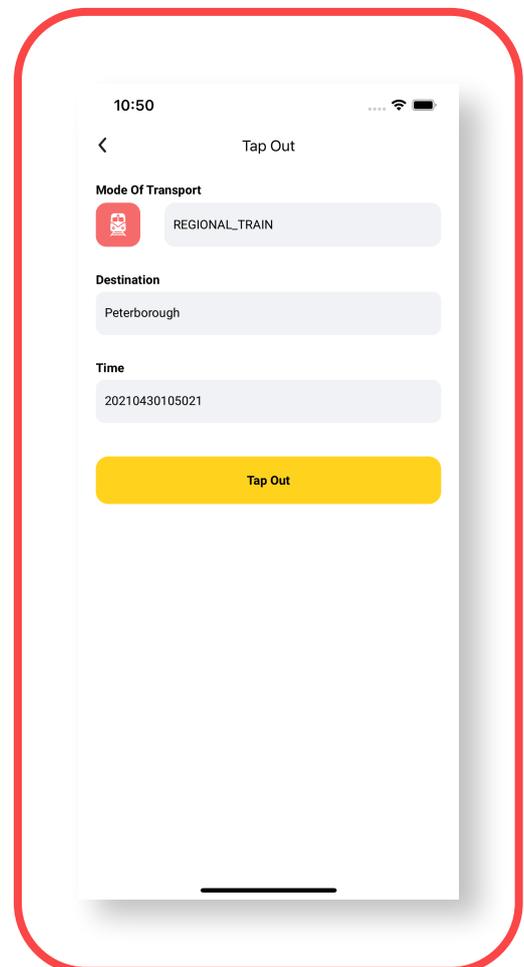
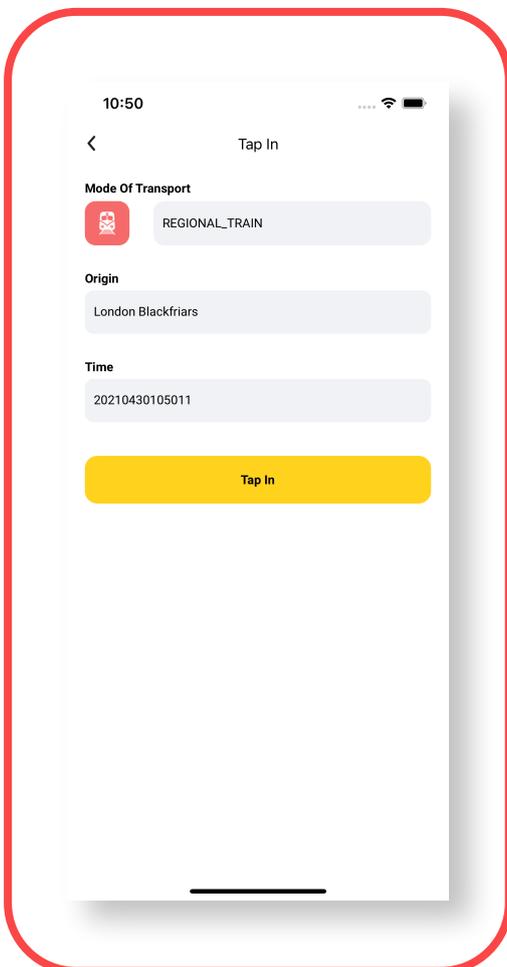
On Click Off Tap - In Button Compose all Journey Data and with the help of SOAPAPI Giving all information to the server and Once successful showing a message to the user and taking the user to Home screen.

## 12.2 Tap - Out

Same like tap user will redeem QR Code once journey is over and after successful user will land on home screen.

Maintaining local Database to store source and destination details on every tapIn and tap-Out successful response for Pay as you go journey (i.e. not pre booked ticket).

Fetching the details from local details on myPass section to calculate the price by using SOAP API.

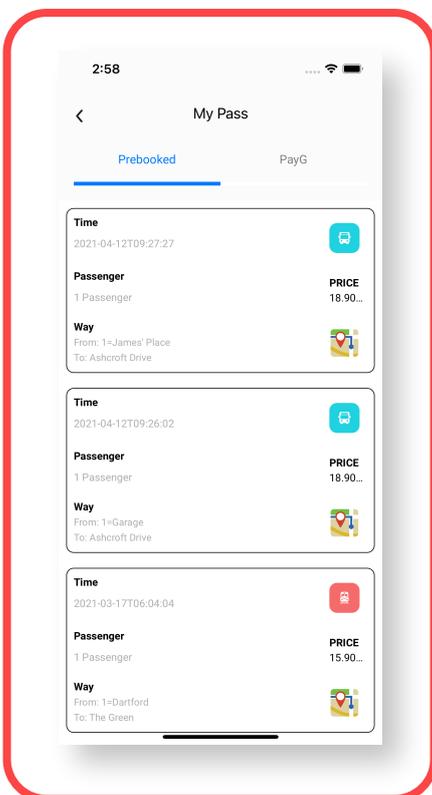


# 13. My Pass

My Pass option you will find from the side menu on the landing page from there you can navigate to My Pass screen. My Pass will show you the list of tickets that you booked or consumed or booked while traveling i.e. Pay As You Go

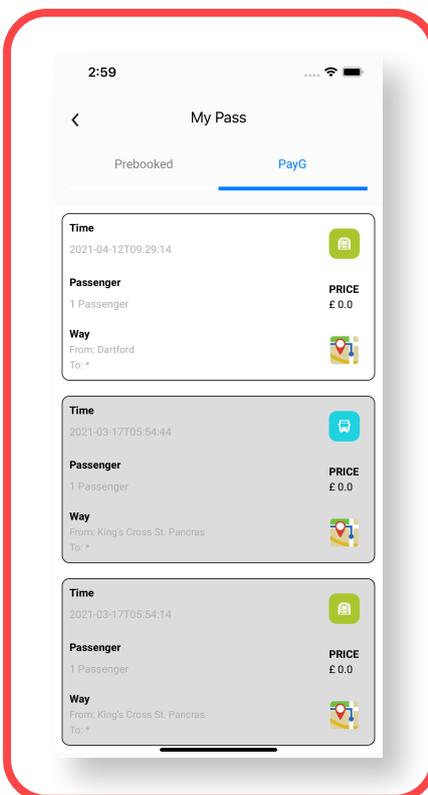
## Prebook

Prebook section lists the all booked tickets with primary details on it and the tickets are in grey background color are consumed by the user i.e that ticket journey is completed and rest tickets are active.



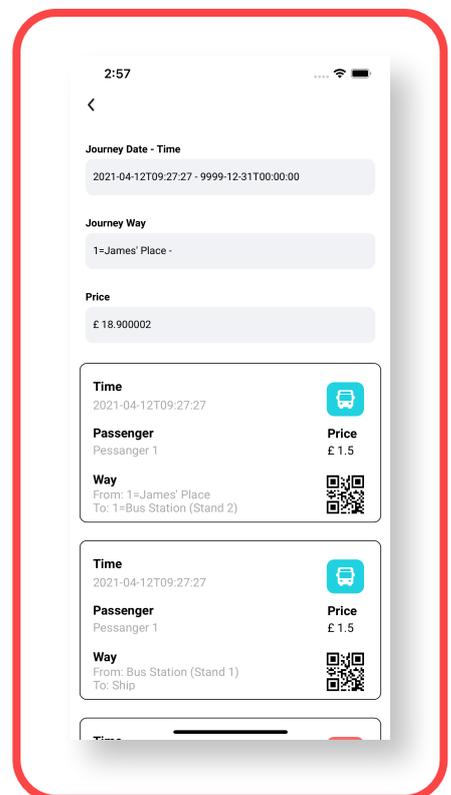
## Pay-as-you-Go

This sections list the tickets booked by run time i.e. user by tickets once journey started by providing origin details.



## Journey Details

Journey details will show the user all details about ticket journey way, time, legs in that journey.

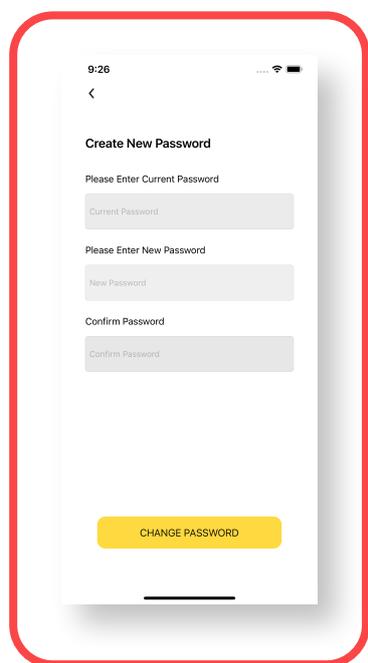
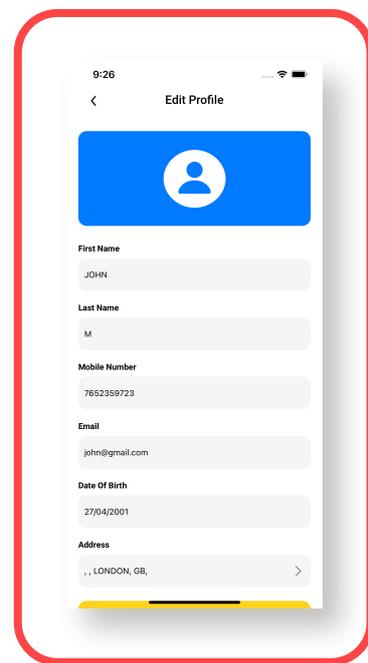
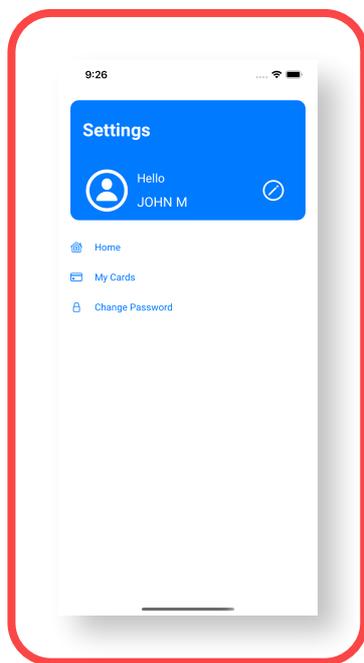


# 14. Settings

Setting screen gives you options and details about users to handle accounts and edit user details.

Below are the options in setting screen

- 1.Home - take user to home screen
- 2.Edit Profile
- 3.My Card - user can add payment method or lists cards
- 4.Update Password - user can change password



# 15. AcuitiMobi Backend Functionalities

AcuitiMobi backend simplifies the billing procedure for its customers and offers instant billing and invoicing for pre-booked journeys and invoice printing. It also helps with deferred revenue processing as and when pre-booked journey is consumed.

AcuitiMobi stores complete details about passenger's previous and upcoming journeys, keeps them updated. System keeps the track of these journeys and make it available for the customers when they need it. All they need to do is to go to the "my pass" section of the app and they can check the details of the journeys they have completed or have got scheduled in the coming time.

AcuitiMobi backend offers the following unique benefits to its customers. Take a look –

## 1

### Customer Data Management

With the help of AcuitiMobi backend, complete customer data is stored in the centralized system along with payment behavior. As a part of customer registration process, the following master data gets created in the backend environment:

- Business Partner: holds customer's Address, communication, card information, etc.
- Contract Account: holds the payment terms, accounting, dunning, incoming/outgoing payment information, etc.
- Provider Contract: holds the contract, validity, posting, revenue recognition related information.

## 2

### Buying journey Vs pay-as-you-go

Customers, while using the AcuitiMobi can perform the Pay-as-you-Go Journey using this application and subsequent Bit gets generated in backend system.

- Each Tap-In generates a zero amount BIT and status is updated to Billable exception.
- Each Tap-Out generates the BIT with actual cost of the joinery and stays in billable status. At the end of the day these Pay-as-you-Go bits will be billed and invoiced in batch mode and a single invoice is generated for the same.
- Discount processing – capping of the Pay-as-you-go amount.

## 3

### Discounting

With the help of backend, you have full control over the discounts you offer to your customers. Following are the type of discounts offered to the customers with the help of AcuitiMobi Backend.

- Capping discount
- Frequent Traveller discount
- Fair-price discount

## 4

### Revenue Recognition

Backend aids the process of revenue recognition. To recognize the revenue when it is earned, system uses the following ways to recognize it.

- For the one-off journey like Airport Journey, Taxi system uses the time-based revenue recognition.
- For the journeys that bought as a pass or in bulk system uses the 'even' of journey consumption to recognize revenue.

## 5

### Invoice Distribution and storage

AcuitiMobi Backend distributes(sends) the invoices generated for pre-booked journeys to the registered emails as soon as the ticket is booked.

- For the invoice created for pay-as-you-go journeys, system generates and distribute the invoices at regular interval.
- The system also stores the invoice pdf in Document Management system for any future references.

## 6

## SAP Analytics Cloud

AcuitiMobi provides the analytics in the following two ways:

### Embedded analytics via Fiori Applications –

- Analyses Un-consumed Journeys – AcuitiMobi Backend helps to identify the journeys that are pre-booked but not yet consumed.
- Customer Invoicing overview – Customer account statement displays the account level activity with precise information of each journey taken.

Integration with SAP Analytics cloud -AcuitiMobi Backend extracts the information from the system and feed into the SAC (SAP Analytics Cloud) for detailed analysis. This helps in fetching the latest trends and make the operation more convenient and efficient. It helps in:

- Identifying trends between Pre-booked vs Pay-as-you-go Journey.
- Identifying means of transport that are most utilized.
- Revenue generation per period vs per transport vs usage type
- Customer payment behavior