

# PROBLEM 1



Transportation payments for public minibuses in Istanbul is time consuming, under utilized and requires technological improvements.



Minibus commuters and operators in Istanbul struggle with ease of payments; majority of minibus accepts payments only on the bus and with cash. On some routes ( $< 2$ ) it is possible to pay with Istanbul card or bank card.



Although this seems to be a solution in fact it does not solve the fact that for each payment the commuter has to say the destination and the driver adjusts the fare then the contactless payment can be finalized.

# Planning, Payment, Verification



With CommuteWiser, commuters will buy or book their tickets in advance, days or hours or just before they get on the bus or even on the bus, with the initial and final destinations and the fare computed by the Mobile App ( or from a web site) and the information will be sent to the drivers panel.

Commuter will verify the ticket on the bus by using the mobile app; via a ticket, qr code, numeric code or with the city card.

The tickets bought by using the Mobile App will enable initial, final destinations and fare computations with automatic verification whichever payment method chosen.

## Generated Values

- Increased usability and security, improved process for the drivers.
- Long term as well as short term mobility data can be used for better scheduling or real time improvements; efficiency for governors and drivers.
- Improves the reliability and promotes minibus commuting and interconnected units; eventually reducing traffic congestion and reducing the use of private vehicles.

# SOLUTION

Digital payments and  
verifications with  
CommuteWiser



## Payment And Verification Methods

- With Google Pay or Apple Pay or Samsung Pay
- With Istanbul Card
- Via QR Code
- Via Bank Card
- Via Code Sent to your Mobile Phone

# PROBLEM<sub>2</sub>

Uncertainties in  
Practice

- Real time information about minibus arrival time and availability info (for the commuters)
- Waiting Commuter Info (for bus drivers)
- Route planning (for commuters)



# SOLUTION

(commuters)

Real time tracking  
of the minibus.

Solves the following problems for the commuters in the bus stops:

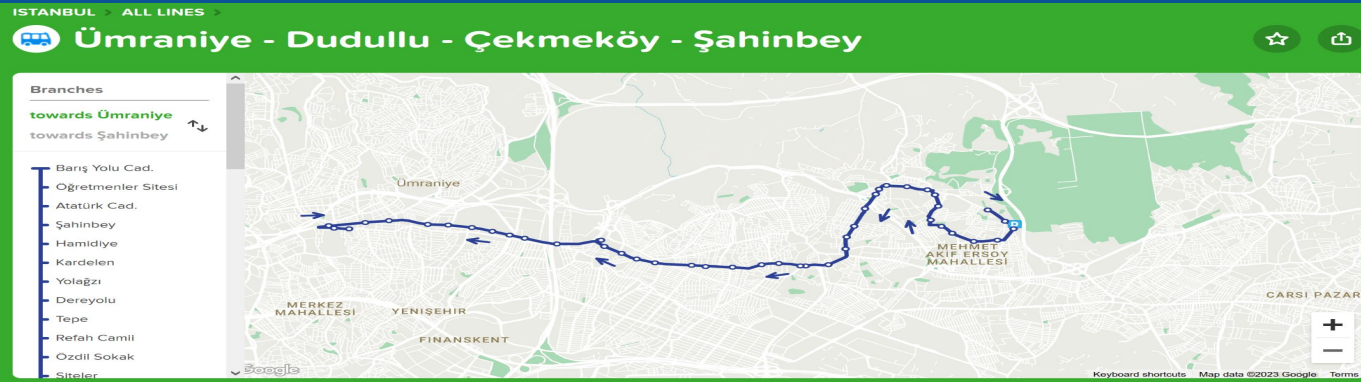
- Exact arrival time of the minibus to the bus stop; better planning, reducing stress.
- Real time tracking and information about availability; commuters can decide on the fly whether to catch the minibus or take the next one, also knows when they could get on an available minibus.

Sample from 3rd party Apps

Where is my Bus

Availability Info

Pay & Verify



# SOLUTION

Solves the following problems for the commuters in the bus stops:

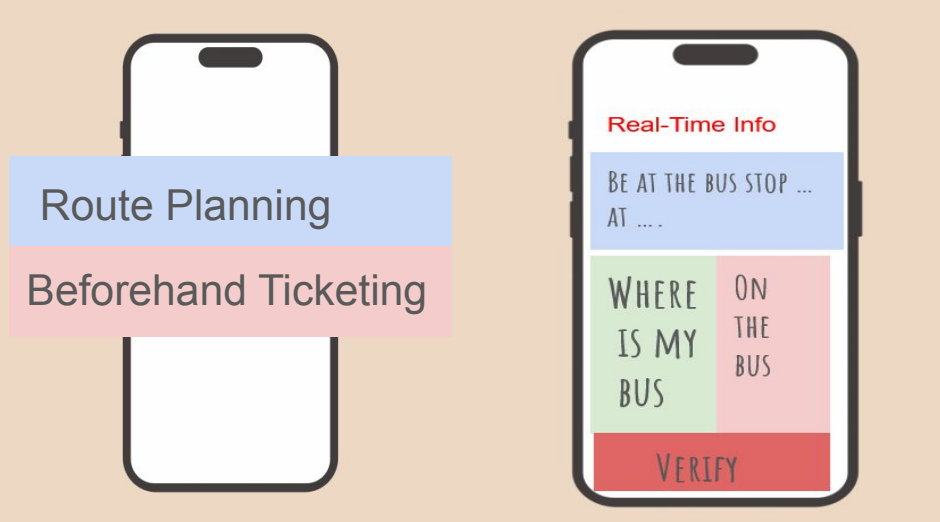
- Commuters have the option to broadcast themselves to the exact minibus they are waiting in the bus stop with destination, time info, and identity validation,
- When they receive information arrival and availability info they proceed for digital payment/booking method.

Commuters Broadcast



# SOLUTION

## Beforehand Ticketing

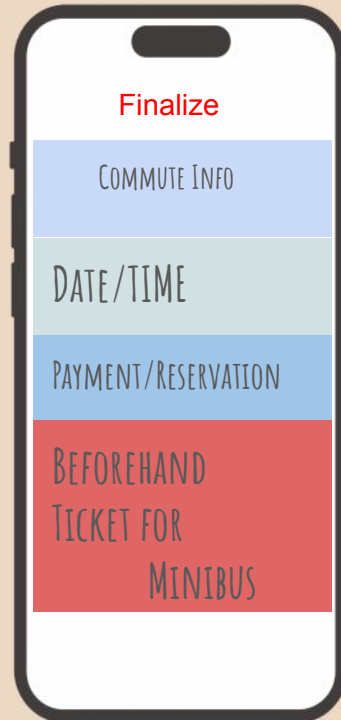
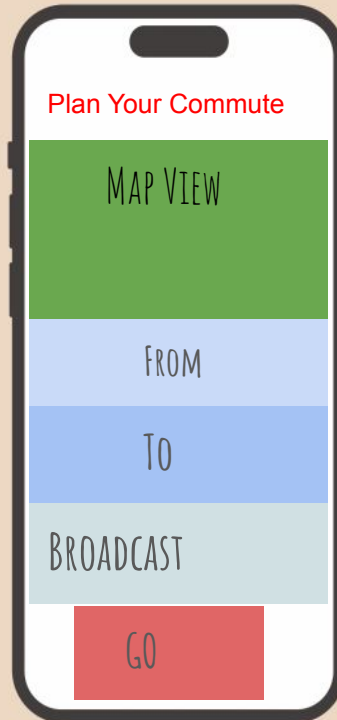


- Mobile App displays the necessary information about the commuting,
- Mobile App displays real time tracking of the bus,
- Mobile App displays verification method,
- Commuter verifies the mobile ticket on the minibus.



# SOLUTION

On the fly ticketing



Features	Plan Your Commute and Finalize
COMMUTER ID	Commuter uses id to login if subscribed this is already built in if not subscribed the commuter can generate a one time commuting id.
ROUTE PLANNING	Commuter inputs initial/final destinations, or choses from the map, or permits location info and inputs final destination.
TIME/DATE	Commuter chooses time and date OR proceeds for broadcast feature.
BROADCAST	Commuters have the option to broadcast themselves to the exact minibus they are waiting in the bus stop with destination, time info, and identity validation.
MINIBUS INFO	Information about arrival time, availability info, minibus identification.
FINALIZE/PAYMENT	Commuter finalize choices and books/pays/reserves spot on the minibus.
TICKET	Mobile App displays the ticket.
VERIFICATION	Commuter chooses verification method; a qr code, or by city card or by bank card.

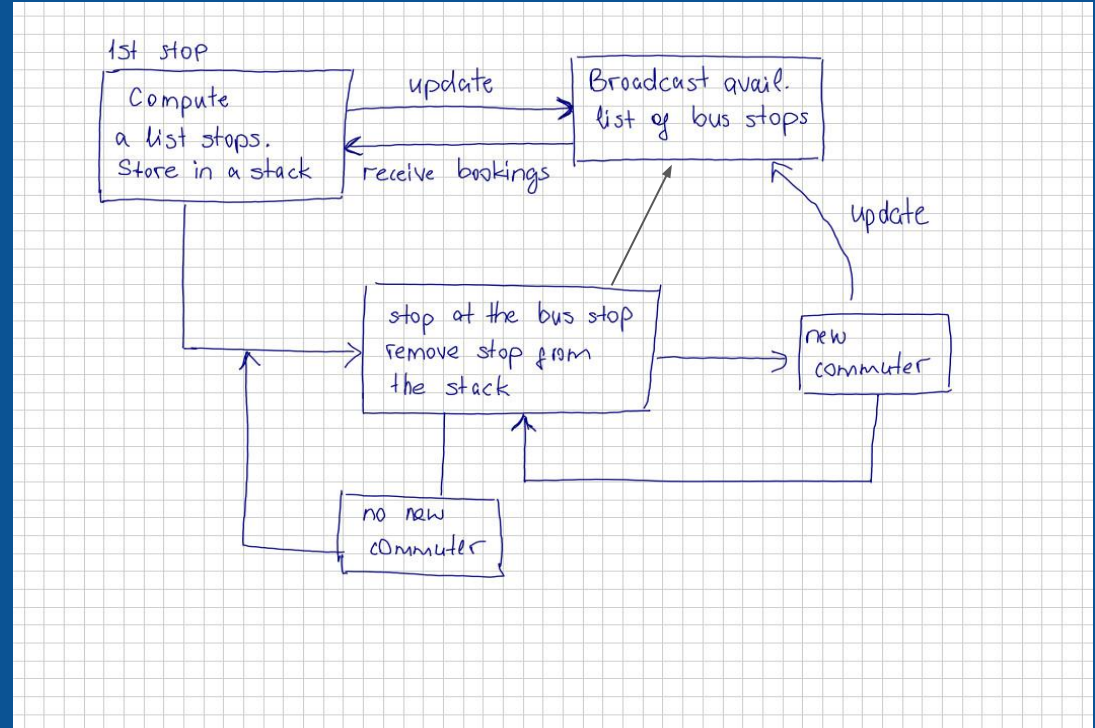
# PROBLEM 3

Utilize algorithms  
and commuters  
data to improve  
efficiency and  
reliability

- Minibuses operates on fixed routes with fixed schedules however in practice they operate similar to on demand units this opens the way for optimized scheduling algorithms.
- Automatic calculation of hop off bus stops and availability for hop on commuters; increased usability and security, improved process for the drivers.
- Commuter Data impacts the connected transportation units.

# SOLUTION

Real Time Info For  
Drivers



# SOLUTION

(For Governors)

Algorithms and

Data Analysis

- Heuristic algorithms to improve efficiency of scheduling,
- Utilize commuting data to optimize mobility and reliability,
- Secure and privacy friendly process within the data regulations.

