PROBLEM CATEGORY

Traffic & Transportation

PROBLEM STATEMENT

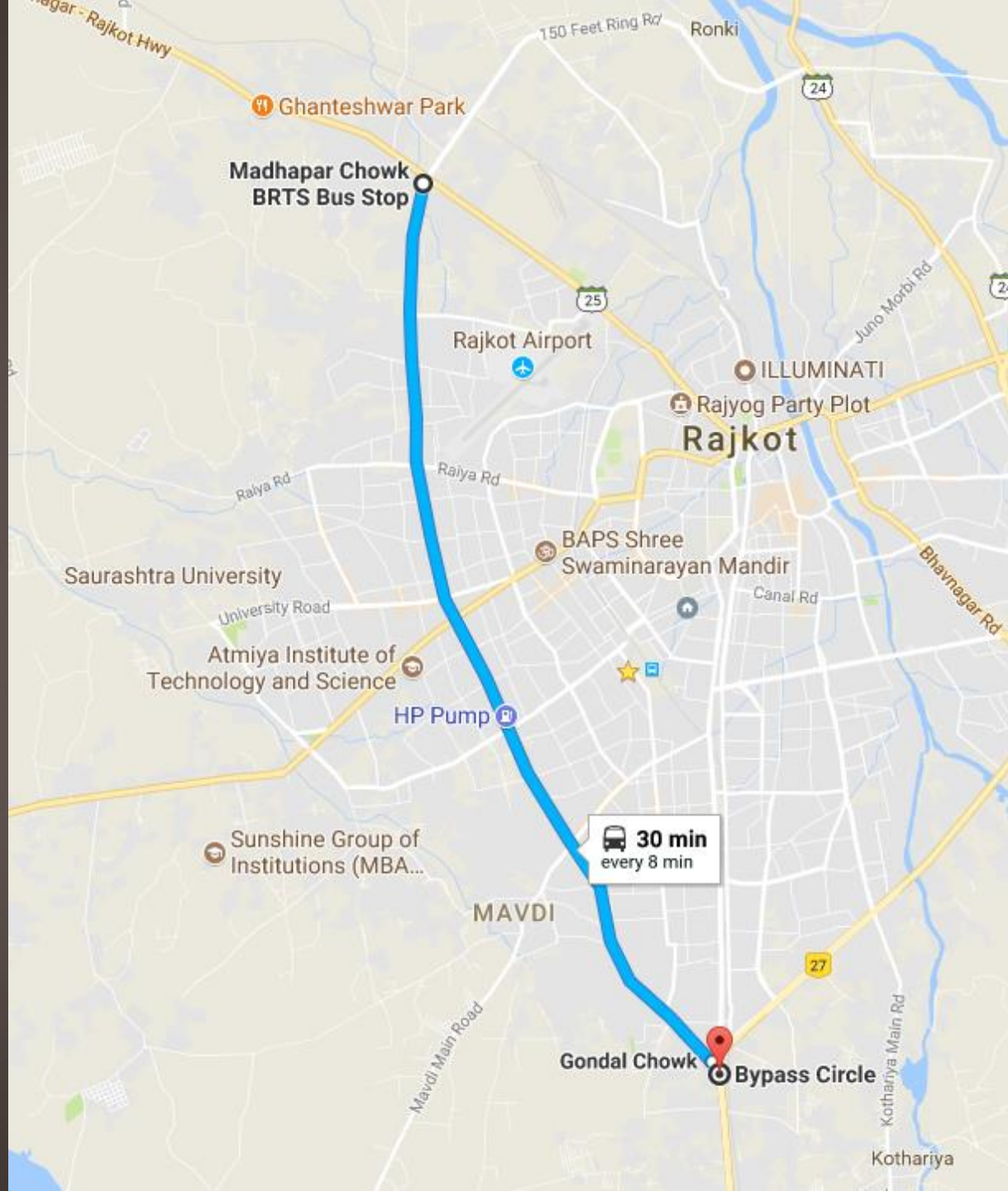
Develop automatic fare collection system for city bus services

TEAM LEADER NAME

Neelkanth J. Dabhi

COLLEGE

Atmiya Institute of Technology & Science



AEFCS
(Aadhaar Enable Fare Collection System)

- As technology is growing on increasing day by day, there is a huge pressure on the automation of the system. More than 6 lakhs commuters have preferred to use BRTS as transportation medium.
- People face lots of problem of change and losses in rounding off, which can be solved here easily.
- It will eventually minimize the frauds happening during ticket issue.
- Payments will be all in digital way, promoting digital India.

TIMELINE

Step - 1

Scan Aadhaar Card

Commuters scan his/her Aadhaar card to get inside the BRTS Bus stop.

Step - 2

Notification of Scan

Commuter gets a text message on his/her registered mobile number that his/her Aadhaar card is scanned at particular RMTS Bus stop to avoid any misusage of Aadhaar ID

Step - 3

Wait for the next scan

System will simply wait for Aadhaar id to be scanned at destination BRTS Bus Stop

Step - 4

Scan Aadhaar Card

Commuters scan his/her Aadhaar card to get Exit to the BRTS Bus stop.

Step - 5

Calculate fare

Our backend system which is one type of embedded system, Calculates fare automatically based on this two Aadhaar scans.

Step - 6

Notification of Transaction

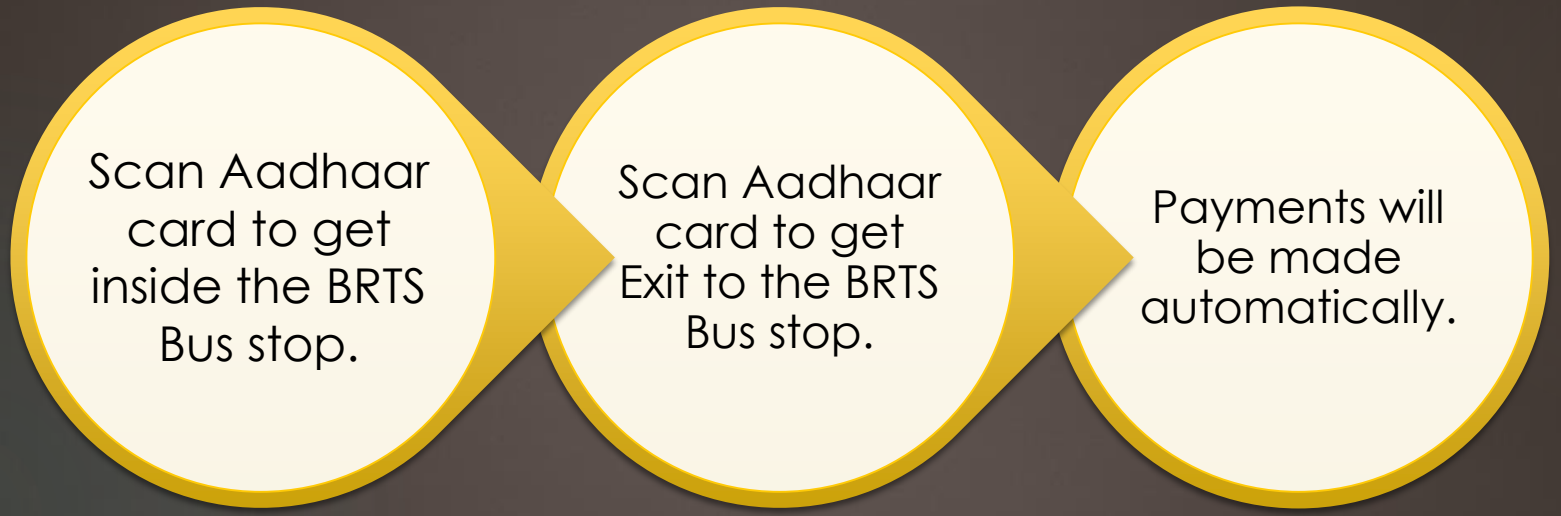
Again one notification will be sent to user with fare price, distance traveled, transaction ID, Current Balance/ Bill.

Step - 7

Transaction Complete

System will save the transaction details to the database.

User Point of view



Backend


Get Aadhaar no. as an input from the QR Scanner. (Bus stop 1)
Send Text Message notification to the user that Aadhaar card is scanned
Wait For the Next Scan.
Get Aadhaar no. as an input from the QR Scanner. (Bus stop 2)
Calculate fare Automatically
Make Payment Via user selected method.
Send Text Notification with Fare price, Trans. ID, Current bill/balance

Dependencies

- Aadhar Card
- 24x7 Electricity for embedded system
- Real time Database
- Local Network to connect BRTS stops with database.

Technology stack

- C/C++
- QR Scanner
- Firebase Notifications
- Raspberry pi / Arduino
- Central Database System

Features

- Fully automatic

This system is fully automated as this system is going to do all your hard work like calculating fair, payment facility and updating in the database. It will make commuter's task very easier and simple

- Aadhaar based

We have choosed Aadhaar as the primary requirement as Aadhaar is the most widely functional and it is used almost everywhere in India. Aadhaar will be linked with the system thus no need to create any other identity.

Features

- Reduce fair fraud and revenue loss

As this system is fully automated, there is less chance of fraud and revenue loss. If the person is not eligible to travel, then the system will reject its card.

- Notification on each transaction

Notification will be received by the commuter on each scan, so as to make sure that the Aadhaar card has been used by the correct owner.

Features

- Cash less fair payment

As the society is growing towards cashless payments, that's why we have developed the system according to that. We have kept that in mind and made the system totally cashless at the time of travel.

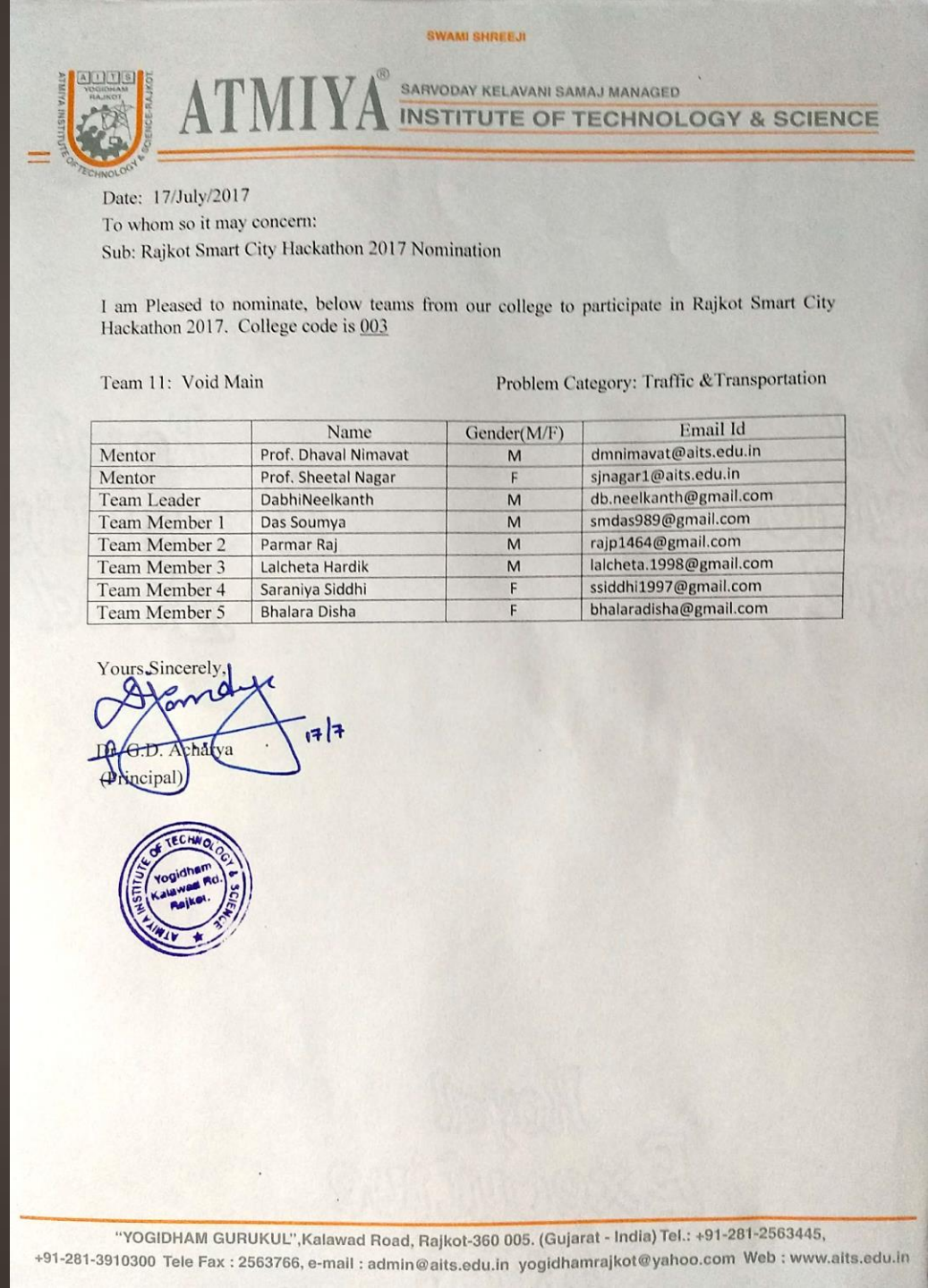
- Eco friendly as no use of paper materials

As the system is totally cashless, indirectly we have participated in saving paper thus an ecofriendly environment. Cashless payments will help in saving paper thus an ecofriendly system.

Features

- Prepaid billing
- Commuter have to recharge a min balance set by government before travelling. After successful journey the amount will be deducted from the balance approved by an OTP.
- This recharge can be also done via net banking or any other digital payment systems.

Institute Approval Letter



SWAMI SHREEJI

ATMIYA® SARVODAY KELAVANI SAMAJ MANAGED
INSTITUTE OF TECHNOLOGY & SCIENCE

Date: 17/July/2017

To whom so it may concern:

Sub: Rajkot Smart City Hackathon 2017 Nomination

I am Pleased to nominate, below teams from our college to participate in Rajkot Smart City Hackathon 2017. College code is 003

Team 11: Void Main

Problem Category: Traffic &Transportation

	Name	Gender(M/F)	Email Id
Mentor	Prof. Dhaval Nimavat	M	dmnimavat@aits.edu.in
Mentor	Prof. Sheetal Nagar	F	sjnagar1@aits.edu.in
Team Leader	DabhiNeelkanth	M	db.neelkanth@gmail.com
Team Member 1	Das Soumya	M	smdas989@gmail.com
Team Member 2	Parmar Raj	M	rajp1464@gmail.com
Team Member 3	Lalcheta Hardik	M	lalcheta.1998@gmail.com
Team Member 4	Saraniya Siddhi	F	ssiddhi1997@gmail.com
Team Member 5	Bhalara Disha	F	bhalaradisha@gmail.com

Yours Sincerely,

17/7

Dr. G.D. Acharya
(Principal)

ATMIYA INSTITUTE OF TECHNOLOGY & SCIENCE
Yogidham Kalawad Rd. Rajkot.

"YOGIDHAM GURUKUL",Kalawad Road, Rajkot-360 005. (Gujarat - India) Tel.: +91-281-2563445,
+91-281-3910300 Tele Fax : 2563766, e-mail : admin@aits.edu.in yogidhamrajkot@yahoo.com Web : www.aits.edu.in

Team Void Main

Thanking