

Passenger Behavior and Travel Pattern

*Report submitted in partial fulfillment of the requirements for the
B. Tech. degree in Computer Science & Engineering*

BY

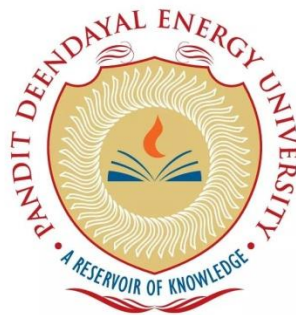
Vyomesh Jethava

Roll No. 18BCP152D

Under the Supervision and Guidance

Of

Dr. Amitava Choudhury



**SCHOOL OF TECHNOLOGY
PANDIT DEENDAYAL ENERGY UNIVERSITY
GANDHINAGAR, GUJARAT, INDIA**

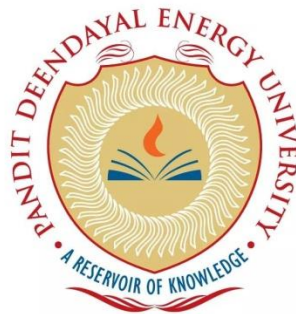
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May 2022**

APPROVAL SHEET

This project report entitled “**Passenger Behavior and Travel Pattern**” by **Vyomesh Jethava (18BCP152D)** is recommended for the degree of Bachelor of Technology in Computer Science and Engineering.

Examiners

Supervisors

Date :

Place :

CERTIFICATE FROM INDUSTRY



A National Award Winner



May 10, 2022

CERTIFICATE

This is to certify that **Mr. Vyomesh Jethava** student of **Pandit Deendayal Energy University, Gandhinagar**, has completed internship on "**Passengers Behaviour and Travel Pattern**" at **Infinity Transoft Solution Pvt. Ltd., Rajkot** during the period **05-Jan-2022 to 10-May-2022**, towards the partial fulfillment of 8th semester of **B.Tech** in Computer Engineering.

He has undergone the work of analysis, development and testing of the assigned project. He has completed assigned tasks in time and delivered quality results.

We wish all the best for his future endeavors.

For,

Infinity Transoft Solution Pvt. Ltd.

HR Manager



INFINITY TRANSOFT SOLUTION PRIVATE LIMITED

A Division Of Infinity Infoway Pvt. Ltd.

Corporate Office :

CIN No: U72200GJ2014PTC 079893
GST No: 24AADCI5680G1ZL

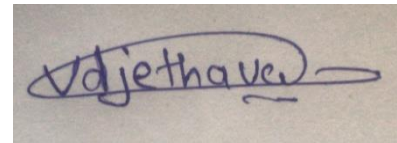
"Infinity", Vishwakarma Society, Near Vavdi Water Tank, | Tel.: +91 281 2587514 | Web : www.itspl.net
150 Feet Ring Road, Rajkot - 360 004. (Gujarat) INDIA. | E-mail : info@itspl.net | www.infinityinfoway.com

ERP & CRM Solutions | Business Analytics | Travel Booking Engine | Cloud/IT Infrastructure Management | Web & Software Development | Payment Gateway Solutions | SEO & Online Marketing

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DECLARATION

I declare that the final semester report entitled “Passenger Behavior and Travel Pattern” was submitted by me to Pandit Deendayal Energy University, Gandhinagar is my own work conducted under the guidance of my mentor Dr. Amitava Choudhury. I further declare that to the best of my knowledge the report for the final semester does not contain part of the work that has been submitted for the award of a Bachelor's Degree either in this or any other university without proper citation.



Vyomesh Jethava

CERTIFICATE

This is to certify that the report on “Passenger Behavior and Travel Pattern” submitted by the student, as a requirement for the degree in Bachelor of Technology (B. Tech) in Computer Science & Engineering, has been carried out under my guidance and supervision for the session 2021-2022.

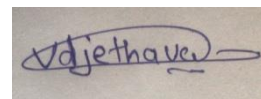
Name of the Student

Roll No.

Signature

1. Jethava Vyomesh Dineshbhai

18BCP152D



Date:
Place:

Signature of the Supervisor
(Dr. Amitava Choudhury)

PREFACE

This Internship Report has been prepared in partial fulfillment of the requirement for the degree in Bachelor of Technology (B. Tech) in Computer Science & Engineering in the academic year 2021-2022.

For preparing the Internship Report, till now I have completed more than 4 months in the Infinity Transoft Solutions company to avail the necessary information. The blend of learning and knowledge acquired during our practical studies at the company is presented in this Project Report.

The rationale behind doing the internship in this company and preparing the Project Report is to increase my knowledge about the tech industry and gain experience by working for the same. Apart from that, it helps me as a student to know how tech companies work internally, which ultimately contributes to my future career path.

The Project Report starts with a basic introduction of the company and the team I worked with. Then it explains the project I worked on during my time, with its problem statement, approach for the solution, architecture, and diagrams. The information presented in this report is obtained from sources like Company Personnel, Company Websites, Company Reports & documentation, and Other Literature.

Acknowledgement

First of all, I would like to thank Pandit Deendayal Energy University and Faculty members of the Computer & Science department for supporting me during this final year project and my under-graduation journey.

I am grateful to Pandit Deendayal Energy University for allowing me to work on this. I would like to express a deep sense of gratitude and respect to my academic mentor Dr. Amitava Choudhury of Pandit Deendayal Energy University, Gandhinagar, who provided immense help and I am grateful to him for providing necessary suggestions and guidance for the success of this internship.

It has been a wonderful experience to study at PDEU and get a chance to contribute to the CSE department via comprehensive project work. I am delighted to announce that I have done my final year project on backend and networking.

Furthermore, I am thankful to and fortunate enough to the faculties of CSE Department for all the knowledge they have imparted, which I could put to use in this project.

Most importantly, last but not the least, I appreciate the co-operation and benevolence of my friends for helping me with the data recording and family for cheering me up all throughout this under-graduation journey.

Abstract

Nowadays, ticket reserving has been crazed by the online platform because of different problems to the clients in addition to the bus operators. Main cause of this deduction is the scope of customers to pick out one of a kind alternatives based totally on their journey criterion. It additionally extended the franchising fee for the journey operators. At the same time, the travel operators had been additionally locating it tough to display their bus seat filling information. Many bus provider companies do now have their personal online bus ticket booking system.

Online Bus ticketing portal is a completely based on internet with the advantage of total in-house management of bus schedules, ticket bookings, ticket sales, report generation, and different commercial enterprise features related to ticket sales. It additionally gives the power of choice making to clients to make a ticket booking through bus operators' popularity, overall performance and ranking. This effective Internet primarily based totally price tag reserving machine that lets in a full manage of now no longer most effective at the ticketing inventory, however additionally the site's content.

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CHAPTER 1

Problem statement

Recruitment Management System by making a system for all platforms.

Recruitment Management System is a tool for making the travelers tasks easy and fast. We have build this system for customer's satisfaction towards travelling agencies. Our system can be used by any ticket booking portal. This system helps to improve the online booking system by which passengers can make sure that they are getting good facilities or not. This system will be helpful to make the passenger task faster compared to current situation.

Our system will contain common features like online ticket booking, online payment, GPS integration, plan for future journey etc. Apart from this we are going to add our features like customer feedback, chat window and make booking on-the-go.

Some major difficulties were:

- Inability to update seat availability and reservation-related enquiries
- Inefficiency of the paper-based, over-the-counter ticketing process
- Passengers do not have access to updated information on bus schedules and seat availability
- Location constraints; difficulty in accessing services beyond business hours

About the Industry

Infinity is highly ranked with 17+ years of extensive experience and helping clients to achieve success in the following imposing terms: URP - University Resource Planning, Enterprise Resource Planning - ERP/CRM/SCM, ITS - Infinity Travels Solutions. Our aim is to serve the best digital solutions to Educational Institutes, Enterprises, and travel industries.

Infinity's work culture and environment made us to win "Great Place to Work" award. We are very big family with 300+ smart and experienced team members. Infinity is also recognized with National award for "Outstanding Entrepreneurship in MSEs (Services)".

Currently, Infinity operates from 4 places:

- Rajkot
- Ahmadabad
- Germany
- Malaysia

Infinity is a National Award winner and outstanding entrepreneurship in MSE Services, awarded by Mr. Pranav Mukharji (President of India).

We have amazing features and technologies including:

- 10,000 GB database - Managing such a large data is a great challenge for any company. Our database experts manages thousands of big data for the uninterrupted services to our clients
- 300+ Employees - We at Infinity strongly believe that our human capital is our infinite strength to our success and we are rapidly growing and strengthening our team.
- Advantage of top-notch talents & experts
- 25 Billion Code - One can just imagine the hugeness of the coding. It is a very complex and demands expertise to develop & manage such a giant programming.

- 600+ projects - Till date Infinity has completed more than 600 projects that reflects our area of expertise & vast domain knowledge.
- 98% ratio - Getting a project is an easy task but to complete it on time that too with exact specifications costs too much efforts. We are strict to our commitments and always do our best to complete the project on time.
- We have a dedicated & separate B2B & B2C customer care department for quick resolutions of customer queries in an effective manner.
- 5000 calls - Our dedicated B2B & B2C customer support team is capable of handling more than 5000 calls per day during the peak hours.
- Happy clients - If someone is fully satisfied with any product/services then only they will repeat their purchase. Our delighted customers have chosen us for their repeat business requirements. That shows the reliability of Infinity.
- Turnover - Crossed highest turnover of 1 billion USD through software.
- 5 Tr API reg - Application Program Interfaces are vital tools for businesses in all industries. Our robust system handles trillions of the requests regularly.

Chapter 2

Passenger Behavior and Travel Pattern

Introduction

The Online Bus Ticket Reservation System is a application that allows visitors to check bus ticket availability, buy bus ticket and pay the bus ticket online. This Online Bus Booking System provides bus transportation system, a facility to book seats, cancellation of seats and quick booking. This system can be used by the users to perform online booking via internet for their different purposes or even bulk booking. Users can use this program directly by installing it.

This system has been in very trend since Covid-19 pandemic and still it is growing business, hence bus booking system deals with maintenance of records of each passenger who had to book a seat. It also includes maintenance of information like schedule and details of each bus. Also, we get to know that there are many other features, like providing online payment portal, taking user feedback, etc. It takes a lot of time and causes many errors.

Due to this reason, sometimes there can be lot of problems like server down error or payment issues which can lead to disputes with customers and dissatisfaction. To solve this problem and maintaining further records of items like seat availability for customers, price of per seat, bill generation and other things, we are offering this proposal of reservation system. The reservation system has four modules. First module helps the customer to inquire the availability of seats in a particular bus at particular date, the second module helps him to reserve a ticket, with the third module he can cancel a reserved ticket and with the fourth module customer can verify that he is getting proper facilities or not like proper Wi-Fi service, AC is working properly, driver's response, etc.

Proposed System

We are going to develop the system which can help for following objectives:

- This helps the company in handling networking part of the project.
- Passenger behavior and Travel Pattern will allow travelers to get better facilities and will to customer satisfaction.
- This system is designed such that ultimately all customers will get best facilities available in market compare to other competitors.
- Our system is being used by all top ticket booking companies like GSRTC, Redbus, Paytm, Eagle travels, etc.

Software Used:

Types of software used in the completion of daily tasks:

- Windows 7 and Windows Server 2000
- Symantec Antivirus Corporate Edition 2003 and Firewall System Diagnostic Tool
- Microsoft Active X Directory and Microsoft Exchange Mail

Motivation

As a part of internship we are assigned to build the efficient passenger travel system to make the process of online ticket booking easy and fast. As an intern we are very excited to make such system which will be used by the company in the future.

We will be provided the training for the latest networking technology. We will learn the current technology with the advantage of learning from live projects. We are provided training and assignments which leads us to grow and understand the concepts which is used for make this project.

Plan of execution

1. Learning

- Port Mapping and Documentation
- Understanding parts of networking
- LAN Management System
- LMS Portal
- Internet Performance Monitor
- Trip tracking and managing history

Milestone-1

2. Requirements gathering

- Understanding working under networking team.
- Practicing troubleshooting in employees computer.
- Handling server responsibilities.

Milestone-2

3. Tasks To Be Perform

- Creation and maintenance of user accounts and contact lists.
- Troubleshooting/ helpdesk regarding problems with employee's computers.
- Use of data transfer and system security diagnostic tools to monitor and address problems within the organizations.
- Track data of passengers booking.

Milestone-3

Chapter 3

System Design

Solution Approach - Diagram

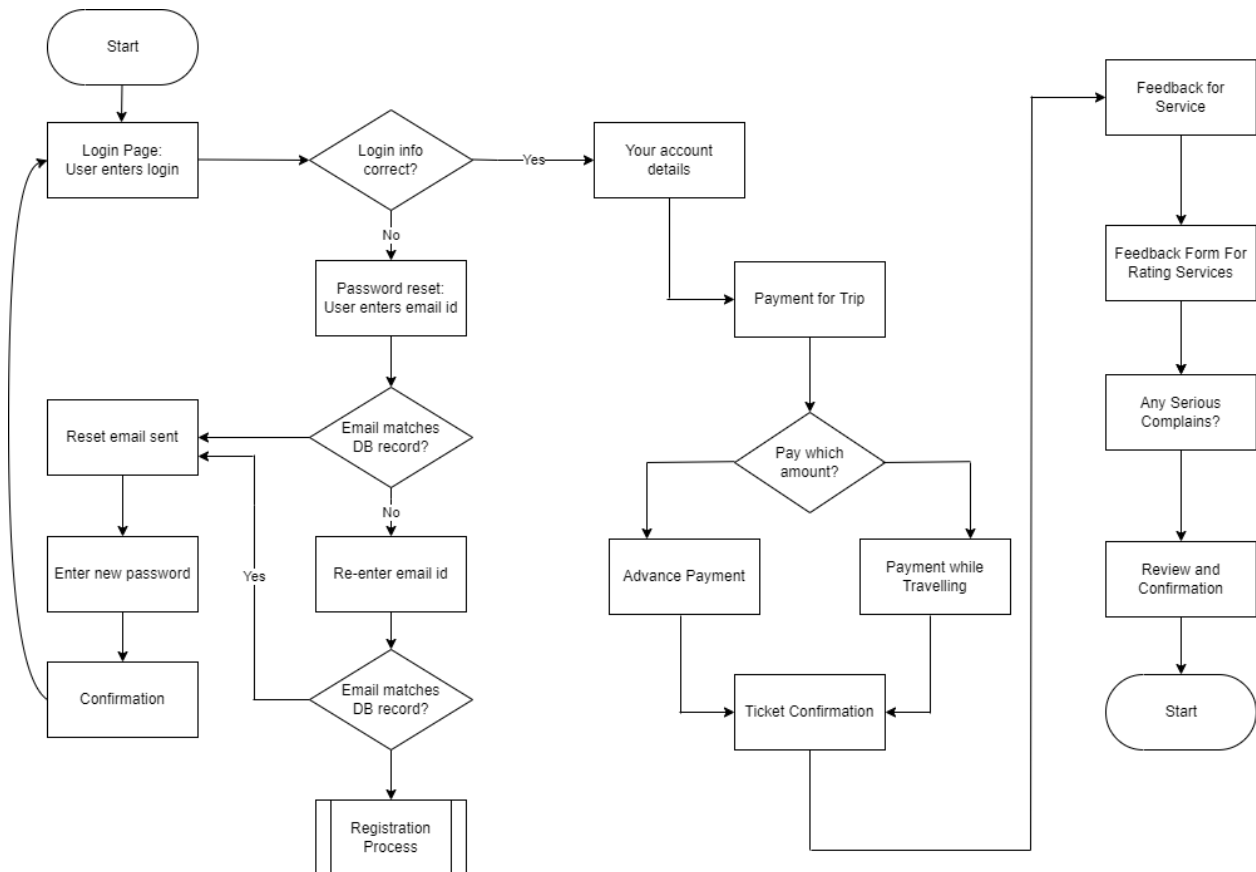


Figure 2.6.1: System Flow Diagram

Solution Approach - Diagram

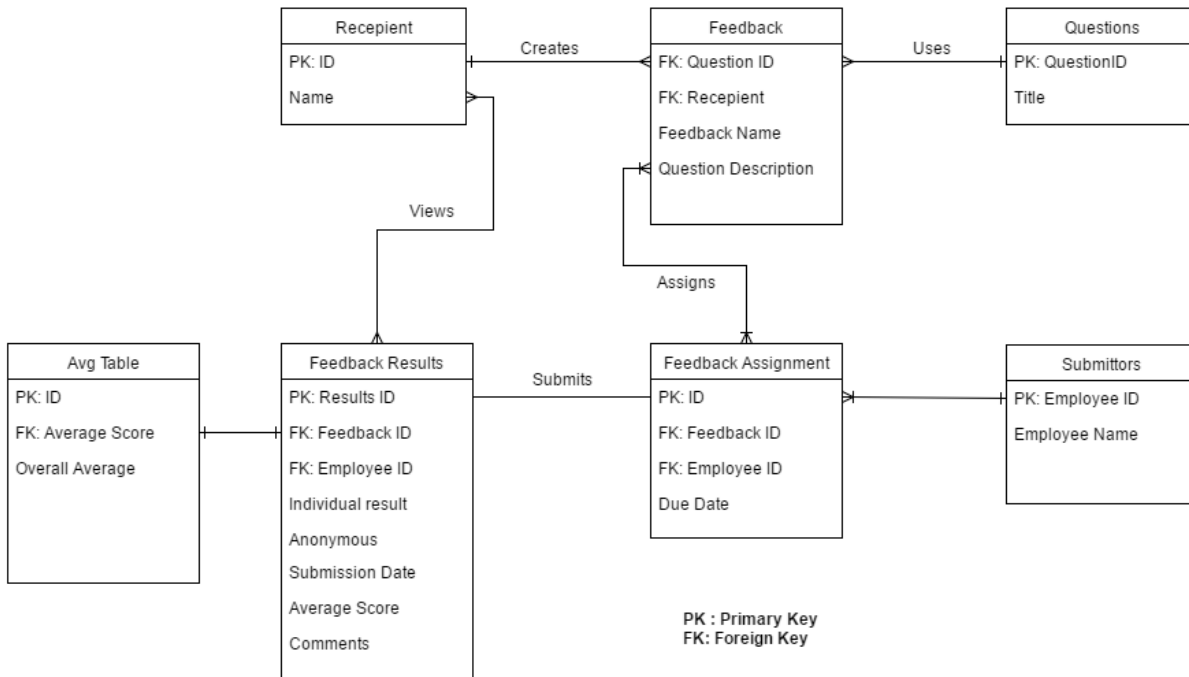


Figure 2.6.2: System ER Diagram

Solution Approach - Explanation

We have divided the whole flow according to user's designation. We have total 3 designations.

- Admin
- Travel Agency
- Passenger

- **Admin** will assign the dashboard i.e. Manager will get credential for accessing the dashboard which includes schedule of bus and all tickets booking history. One user can get access to multiple dashboards to control over whole system. Apart from that all the static details will be entered by the admin.
- **HR manager** will assign the schedule for new bus or if there are some changes in bus schedule or timing. He is also responsible for finalizing the driver allocation and handling bus location.
- **Passenger** will only be able to book tickets or can see schedule of all buses which are available for according time range. He can also book tickets in advance or can generate e-ticket of his booked tickets after finalizing of time based on the route.

Chapter 4

Implementation

Result of Implementation

- **Admin Dashboard** - Here you can see all scheduled buses at top with their details including status, driver name, running time, speed, date and time, etc.

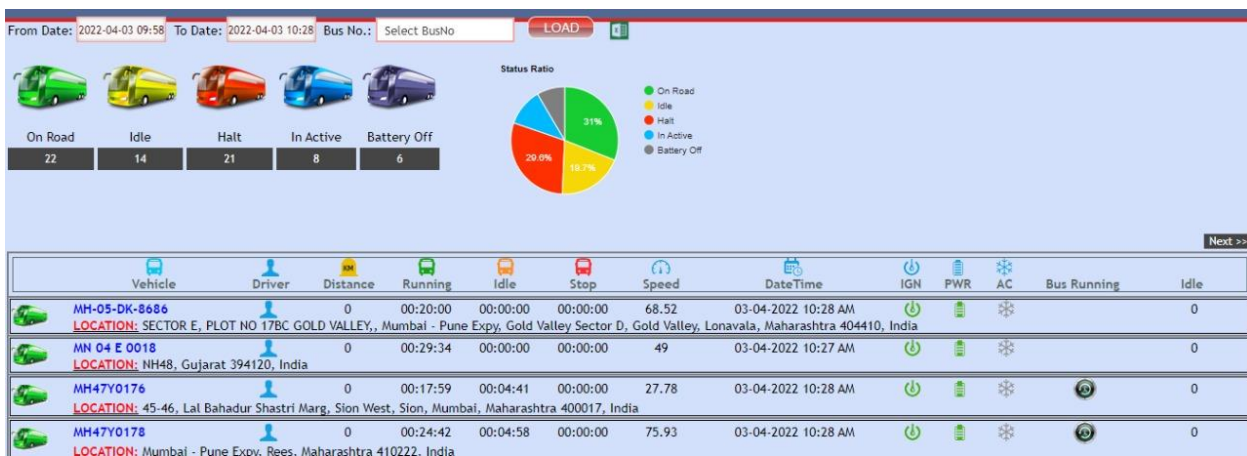


Figure 3.5.1: Admin Dashboard with all details and status of bus

- **Manager Dashboard** – Bus Manager will fill this form and submit it. This displays scheduling bus for future which is being managed at management level. Manager can schedule, date and time, total number of seats, seat category, pricing, etc.

ITS Login : [66 - ITSSUPPORT]# HELP LINE :- [+91 99588 00038] @@ [Version: 1.10164] Web Access Feedback What's New My Bookmarks

AR-01-Y-6666 Driver & Pickup Man SEARCH Get Schedule 6666 Stop Booking Route Stop Bkg Tag TUE - 04:46 PM 01-03-2022

6:00 PM - (NonA/C) Bhilwara To Surat 2 X 1 (37) SLP NON A/C, Shreeji (Black Horse) Itssupport-Rs. 0.00

Monday 28-02-2022 Return Trip

From Bhilwara Surat 06:00 PM : 1 # (NonA/C) Bhilwara To Surat 2 X 1 (37) SLP NON A/C, Shreeji (Black Horse) 3 / 3

Booking Type: Phone

Sub Route City Fare Seat Fare Route Master

Multiple Booking: ☐ AC.Far e Seat SLP Simb T.Seat T.Slp T.Simb GST

No of Seats : 1 Non AC.Far Cabin SLP Extra Total Amount

Ph1. +91 0 Ph2. +91 0 Passenger Name:

Remarks: Email:

PickUp: 6:00 PM 6:00 PM | Shreeji Travel Agency,Hotel Drop: 7:40 AM | Shreeji Travels Agency, opp- Shr

Book Clear Past Booking: 0. Route Time Wise Pickup Chart Report Info SMS Waiting Slider

Figure 3.5.2: Manager Scheduling Bus Form

MH47Y0175 @ Stop

Driver & Pickup Man

SEARCH

PNR No.

Stop Booking

Route Stop Bkg Tag

SUN - 11:39 AM
03-04-2022

5:00 AM - (A/C) Mumbai To Pune [Kothrud/Swargate/Station] Brand New Bharat Benz 2X1 A/C Seating Coach

ITS Support Neeta-Rs. 0.00

Route Code >>

Hot Route

Ahmedabad - Mumbai

Sunday

Return Trip

From

Mumbai

Pune

03-04-2022

05:00 AM : 2 : [00 : 00 : 00] (A/C) Mumbai To Pune [Kothrud/Swargate/Station] Brand New

1 / 35

Booking Type: Phone

Sub Route

City Fare

Seat Fare

Route Master

GST No.

Multiple Booking:

AC

SEAT

SLP

SLMB

T.Seat

T.Slp

T.Slmb

GST

No of Seats :

0

NON AC

SEAT

SLP

SLMB

Total Amount

Ph1. +91

0

Ph2. +91

0

Passenger Name:

Neeta Tours and Travels [020]

ITS WELCOMES YOU.

ITS Marquee

Remarks:

Email:

PickUp: 5:00 AM

5:00 AM | Borivali-(w) Neeta Tours Anc

Drop: 9:05 AM

Talegaon Toll Naka , expressway

Book

Clear

Past Booking:

0. Route Time Wise Pickup Chart

Report




Info

SMS

Waiting Slider

Figure 3.5.3: Manager Scheduling Bus Form

- **Passenger e-Ticket Generate** – After booking ticket successfully, you can get e-ticket which can be using while traveling.

GSRTC
Gujarat State Road Transport Corporation
ગુજરાત રાજ્ય માર્ગ વાહન વ્યવહાર નિગમ

E-Ticket/Reservation Voucher

PNR Number:	Journey Date: 30/04/2015
Journey From: AMRELI	Journey To: SURAT
Trip Code:	Departure Time: 20:00 Hrs.
Class: SLEEPER	Pickup Point: AMRELI
Route No.: SLEEPING	Platform No: 8
Service From: AMRELI	Service To: SURAT
No. of Seats: 1 (Adults=1 ; Children=0)	
Bank Txn. No. :	OB Reference No. :

Seat No/s: **9**

Passenger Information

Name	Age	Gender

ID Card Type : **PAN Card**

ID Card Number :

Total Fare Details

Basic Fare: 337.00	Reservation Fee : 5.00
Accident Insurance Charges : 0.00	Toll Fee : 12.00
Service Charge : 0.00	Toll Fee Rajasthan: 0.00
Other Levies : 0.00	Concessions : 0.00
Discounts : 0.00	

Total Fare: 354.00

Important

- The seat(s) booked under this e-ticket is/are not transferable.
- This e-ticket is valid only for the seat number and bus service specified herein.
- This e-ticket print out has to be carried by the passenger during the journey along with Original Photo ID Card of the passenger whose name appears above.
- Please keep the e-ticket safely till the end of the journey.
- Please show the e-ticket at the time of checking.
- GSRTC reserves the rights to change/cancel the class of service.

Printed On :30/04/2015 At :16:12:22 (DD/MM/YYYY 24 Hours)

Figure 3.5.6: e-Ticket Generation by Passenger

Future Work

The system can extend to predict whether the traveler is getting enough services as per instructions or not. If the traveler will not travel after booking then he will get notification that what was the reason for this. The system can have other extra features which can make this system more efficient.

The system can also provide e-ticket which will give traveler a better option and he will not have to carry physical ticket compulsory. Even for scheduling new route we can have better idea because we have data of passengers, at which time more passengers are travelling and how much bus is filled with passengers.

Conclusion

A major difference will be made to the ticket booking system by using it because it is even available on different platforms.

This system has world-class quality and trying to improve it as much as possible. It is efficiently being tested whether all features are in working condition or not. It is made of all existing features.

Chapter 5

Testing

We tested to add site manager view in android platform for more convenience because many time at site, the manager has less time to go on desktop and check the system so to maintain it easily tried to make that same interface in mobile interface.

- **Site Manager Dashboard** – Bus Manager will fill this form and submit it. This displays scheduling bus for future which is being managed at management level. Manager can schedule, date and time, total number of seats, seat category, pricing, etc.

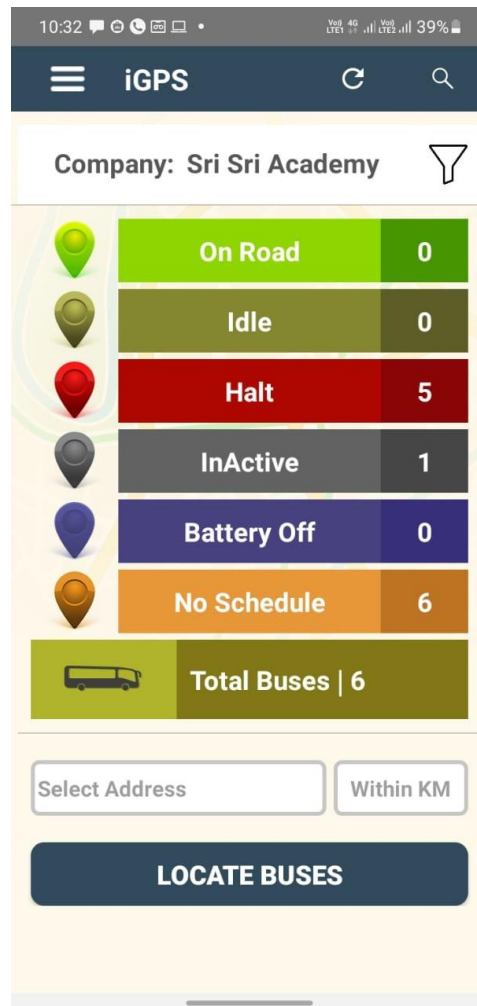


Figure 3.5.4: Testing of Bus Status on Android

Chapter 6

Discuss / Conclusion

- In this project we have learned about managing the real life project. We have learned to work with the huge team and manage the deadlines with all the conflicts.
- We learned the importance of structured formats for the code and how to implement it. We have also used different networking devices and also tested system on different servers for proper optimization.
- We have used the .net and angular technology in the system and we have successfully implemented the whole project in it. These technologies were new for us.
- As a networking intern, during training I learned different applications of networking devices from the scratch and also learnt how server is being managed and frequently visited server room and then implemented the project using these technologies.
- We were also examined by the organization and given feedback on our progress.
- By this project we learned to communicate with seniors and work with different people and manage the contribution of ourselves. We have learned about managing our time according to the deadlines.
- During this internship we were continuously given the feedback so that we can improve the skills. We have to maintain the time sheet in which we have to write everything about the work of the particular day. From this we learned about maintaining the record of the day. By this we can now analyze ourselves that what we were efficient to do and how much we actually achieved.
- During the whole internships we got too many things to learn in both technical and cultural manner. We are trained in the way that we had more cultural values then before and also work efficiently in the stressful situations. This internship has sharpened us in all the ways by giving the training on cultural values and technical skills.
- This organization made us perfect for working with good manners. They also taught us to have the feedback in positive manner.

- From first day to last day, testing different changes to get fair accuracy to finalizing the most suitable hardware and writing the user manual, this project has taught me a lot.
- This system which we have integrated is important to all common man as we have try to brought innovative add-ons which not only eliminates human errors but also saves time and is able to perform in harsh conditions.
- Even these kinds of systems are possible in each and every industry.

Personal Details

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