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#### **ABSTRACT**

Title: Digital Travel E-Pass System for Smooth Movement of Interstate Vehicles

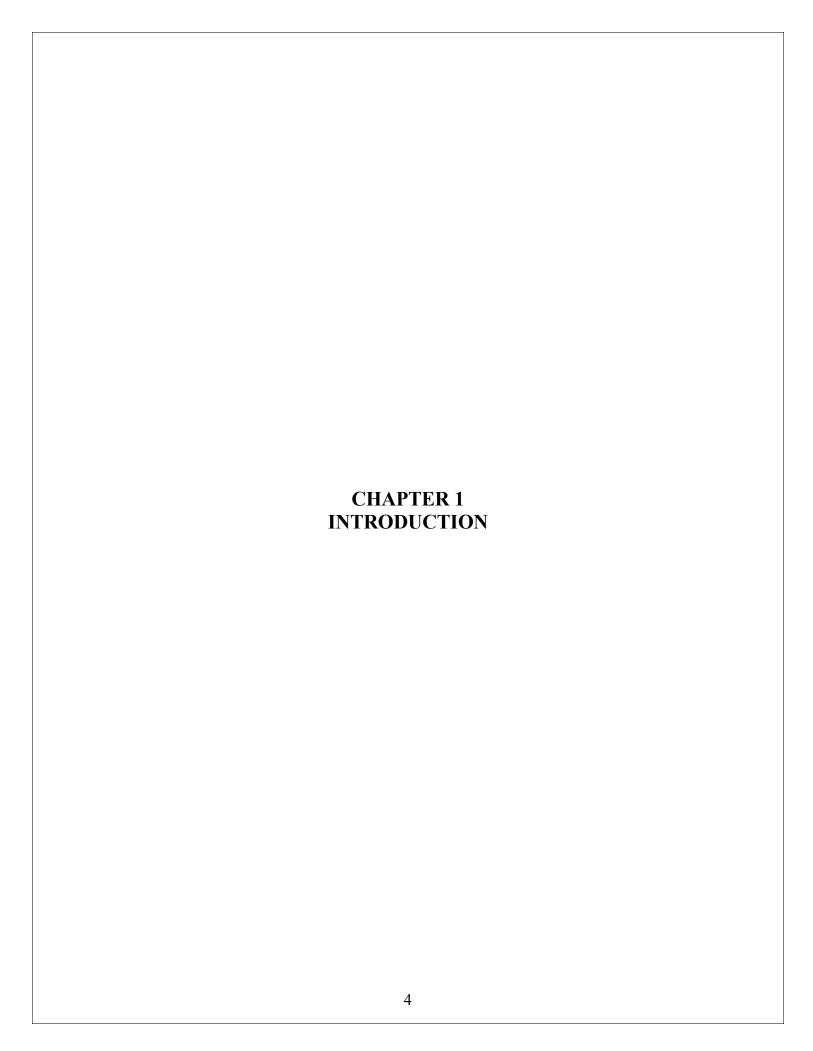
With the aim of streamlining and modernizing the vehicle inspection process at the state border, this project aims to: single-gender Travel Electronics Creating a Transition System. The current paper-based process often results in excessive data collection at each checkpoint, making the process slow and cumbersome for passengers.

These solutions include the creation of a mobile application for state border police that allows them to digitally capture and manage important details of vehicles, drivers and passengers. When stopping a vehicle for inspection, police will use the mobile phone to access vehicle details, driver/owner details, driving license and registration details, passenger details, purpose of visit and expected length of stay. information. The system will allow police to take photos or videos when necessary. After submitting the information, the passenger will be sent a text message with a link to download the e-pass. The e-pass will be in PDF format containing important information and a QR code.

Passengers will present the QR code at the next checkpoint, allowing police to search and verify the e-pass without stopping the vehicle. This system not only improves passengers' overall travel experience, but also reduces transportation costs across state borders. The project also includes the development of a dashboard that is immediately accessible to highway authorities.

This dashboard provides a centralized view of all ePass transactions, allowing authorities to monitor vehicle movements, monitor compliance, and analyze data to make informed decisions. The travel planning ePass system represents the digital transformation of the current manual process, offering a better, safer and more convenient solution for authorities and people walking. Integrating real-time data analysis through dashboards allows highway authorities to make informed decisions to improve traffic management and border security.





#### 1.1 INTRODUCTION TO ADIVID TECHNOLOGIES PVT LTD:

Founded in 2017 by visionaries Kovid Sawla and Adesh Chopade, Adivid Technologies Pvt Ltd is a pioneer in digital transformation and technology innovation. This dynamic company has an unwavering commitment to using technologies such as digital technologies, data analytics, data visualization and artificial intelligence to solve today's modern problems. Adivid Technologies operates with a proactive approach focused on delivering strategic solutions to improve operations and performance in organizations, government agencies and businesses.

#### 1.2 HISTORICAL BACKGROUND

Established on May 30, 2017, Adivid Technologies Private Limited, bearing registration number U72900RJ2017PTC058164, has flourished as a prominent player in the digital landscape. Incorporated in Jaipur under the RoC-Jaipur, the company has maintained an active status throughout its six-year journey. Operating as a non-government company limited by shares, Adivid Technologies has been a stalwart in the realm of computer-related activities. Specializing in services such as website maintenance and multimedia presentations, the company has consistently demonstrated a commitment to innovation. With a rich history spanning over six years, Adivid Technologies continues to thrive as a private entity, evolving and contributing to the ever-expanding digital ecosystem.

#### 1.3 LOCATION

#### **Nashik Branch**

C-8/1, A-Road NICE Area, Satpur MIDC Near SBI Administrative Branch Nashik, India - 422007

#### **Kota Branch**

267, Rajeev Gandhi Nagar Kota, Rajasthan, India - 324005

#### 1.4 OPEARTIONAL STRUCTURES

Adivid Technologies Private Limited, founded by Kovid Sawla and Adesh Chopade, operates with precision from its dual addresses in Nashik and Kota. With CIN U72900RJ2017PTC058164, the company, active for over six years, specializes in other computer-related activities, focusing on website maintenance and multimedia presentations. The corporate structure is finely tuned, comprising visionary leadership, dedicated departments in technology, development, client services, and administration. Technical teams specializing in Digital Technology, Data Analytics, and Artificial Intelligence ensure cutting-edge solutions. Adivid Technologies thrives on a commitment to quality, client engagement, and a culture of innovation, positioning itself as a dynamic force in the ever-evolving digital landscape.

#### 1.5 VISION OF THE COMPANY

- Pioneer in Digital Evolution: Adivid Technologies
- envisions leading the charge in the digital revolution, pioneering transformative solutions that redefine industry standards.
- Empowering Entities: We aspire to empower organizations, government bodies, and corporations, envisioning a future where technology seamlessly enhances their operations.
- Technological Excellence: Our vision centers on being at the forefront of technological evolution, consistently adopting and implementing the latest advancements in Digital Technology, Data Analytics, and Artificial Intelligence.
- Unparalleled Efficiency: We aim to propel our clients towards unparalleled efficiency by seamlessly integrating innovative solutions into their workflows.
- Transformative Digital Experiences: Adivid Technologies aims to create a future where the integration of Digital Technology, Data Analytics, Data Visualization, and Artificial Intelligence leads to transformative digital experiences.

Success through Innovation: Our vision encompasses a commitment to
continuous innovation, fostering a culture where challenges are met with forwardthinking solutions, ensuring the success of our clients in an ever-evolving digital
landscape.

#### 1.6 MISSION OF THE COMPANY

- Revolutionize Digital Landscape: Adivid Technologies is on a mission to revolutionize the digital landscape by providing bespoke solutions that go beyond expectations.
- Operational Efficiency: We are committed to leveraging the latest technological advancements to enhance the operational efficiency and workflow management of our clients.
- Tangible and Impactful Results: Our mission is to deliver tangible and impactful results through a pragmatic approach, addressing the diverse needs of organizations.
- Continuous Innovation: Adivid Technologies is dedicated to a mission of continuous innovation, ensuring that our clients stay ahead in the rapidly changing technological landscape.
- Client Satisfaction: We aim to achieve client satisfaction by understanding and meeting their unique requirements, providing them with unparalleled digital solutions.

#### 1.7 SERVICES PROVIDED

# • Digital Technology Solutions:

 Adivid Technologies offers cutting-edge digital technology solutions tailored to the specific needs of clients, ensuring they stay ahead in the rapidly evolving digital landscape.

## • Data Analytics Services:

 Leveraging advanced data analytics tools and techniques, we provide insightful data-driven solutions, helping organizations make informed decisions and derive valuable insights.

#### • Data Visualization Services:

 Our expertise in data visualization enhances the interpretation of complex data sets, facilitating clearer understanding and aiding in effective decisionmaking processes.

## • Artificial Intelligence Integration:

 Adivid Technologies specializes in the development and implementation of artificial intelligence solutions, providing clients with intelligent automation and decision support systems.

#### • Website Maintenance:

 We offer comprehensive website maintenance services, ensuring the seamless functioning, security, and up-to-date content of our clients' digital platforms.

#### • Multimedia Presentation Creation:

 Adivid Technologies excels in crafting engaging multimedia presentations, helping clients communicate their ideas effectively and captivate their target audience.

#### • Client-Centric Solutions:

 Our services are client-centric, designed to address specific challenges and enhance operational efficiency, providing customized solutions that meet the unique requirements of each client.

#### • Innovation Consulting:

 Adivid Technologies serves as a strategic innovation partner, guiding clients through the adoption of emerging technologies and fostering a culture of innovation within their organizations.

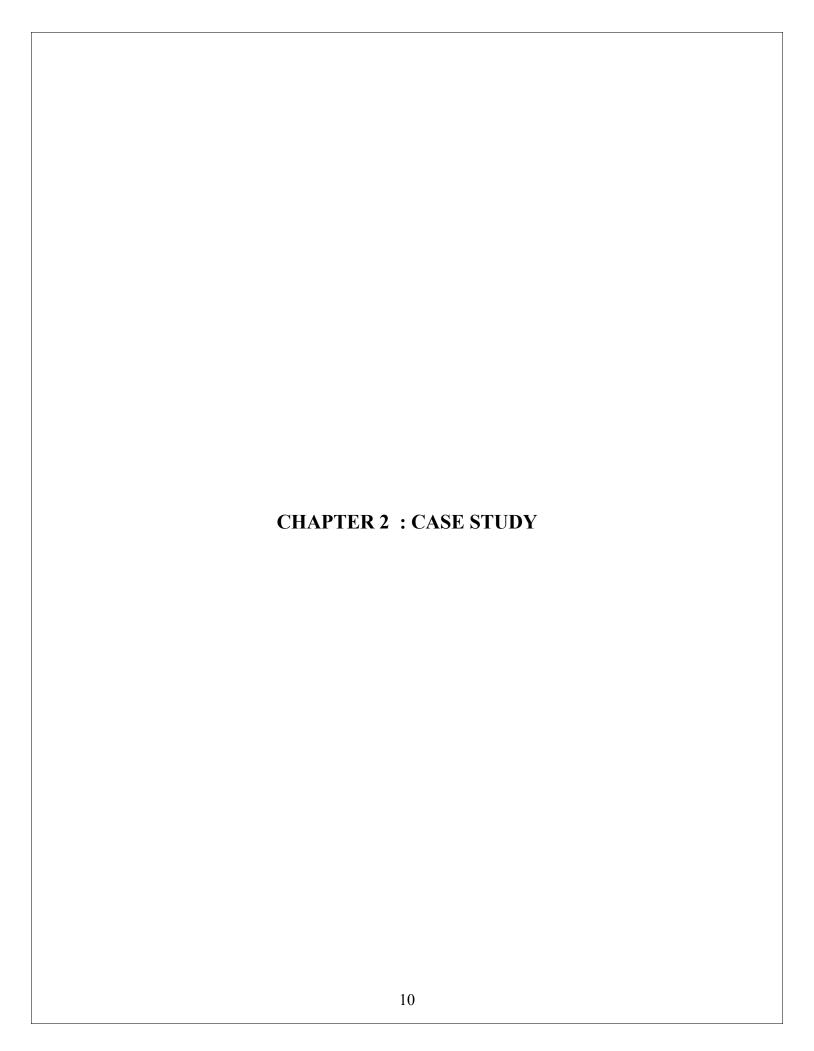
# • Quality Assurance and Testing:

• We ensure the delivery of high-quality solutions through rigorous testing and quality assurance processes, guaranteeing reliability and performance.

# • Consultation and Training:

 Adivid Technologies provides expert consultation and training services, equipping clients with the knowledge and skills needed to navigate and leverage the latest advancements in technology.

**Adivid Technologies** is committed to delivering a comprehensive suite of services, combining expertise in digital technology, data analytics, and artificial intelligence to drive the success and efficiency of our clients across various industries.



#### 2.1 Introduction

The road to travel often crosses many national borders, each containing old questions and knowledge. This can be a difficult process for both pedestrians and police. To solve this challenge, we developed our new idea: Travel Electronic Pass System.

We aim to change this cumbersome process by publishing a mobile application that the State Border Police can use. Officers can use their smartphones to understand details of the vehicle, driver and passengers rather than relying on traditional information. Passengers will receive a newsletter with a link to download the e-pass.

E-pass acts as a digital ticket with a QR code that acts as a credit card at the next checkpoint. Passengers just need to view the QR code on their mobile phones for the police to scan it. If the message is the same, the journey can continue without unnecessary interruptions.

#### 2.2 Problem Identification

The current state of inspection of vehicles and documents at the national border is marred by inefficiencies and logistical problems. In many cases, paper-based methods have a negative impact on time and resource usage. The main problems identified are:

#### 1. Duplicate Data Entry:

- Current procedures require travelers to provide the same information at every state border checkpoint, resulting in wasted time and vice versa.

#### 2. Lack of Resources:

- Officers spend a lot of time and effort collecting vehicle details, driver information and passenger information. This inefficiency prevents the efficient use of resources and hinders the speed of operation.

#### 1. Correct and legal information:

- Written information being inaccurate and difficult to decipher causes errors in processing the information. Illegal documents can complicate the verification process.

#### 4. Lack of immediate control:

- The absence of a central authority for immediate control of checkpoints hinders the ability of highway authorities to manage traffic and allocate resources based on current needs.

#### **5. Security Issues:**

- Migrations do not have the necessary security features to prevent tampering or fraud; This could potentially affect the integrity of all border control procedures.

#### 6. Inconvenience to travelers:

- Due to the repetitive nature of the manual inspection process, travelers experience delays and frustrations, affecting their travel experience all along the way.

#### 7. Limited Data Availability:

- The lack of comprehensive data or dashboards limits highway authorities' ability to obtain meaningful information and related events regarding traffic and transportation.

Due to the nature of these problems, it is clear that there is an urgent need for modern, technological solutions. Travel e-Pass aims to solve these problems by bringing a simple digital approach to national border management, improving efficiency, accuracy and overall user experience.

#### 2.3 OBJECTIVES

#### **Project Goals:**

#### 1. Simplified Data Collection:

- Create a mobile application for the National Border Police that enables efficient and accurate collection of vehicle details, driver information and data passenger documents, eliminating the need for duplicate documents.

#### 2. Improve Efficiency:

- Reduce law enforcement time and effort during traffic enforcement, making border crossing faster and smoother.

#### 3. Digital Documents:

- Replace traditional documents with a secure digital electronic pass system to ensure document accuracy and reduce the risk of manual errors.

#### 4. Current Inspection:

- Enable police to instantly check travel information by following the QR code based e-pass system for fast and secure proof at the next checkpoint.

#### **5. Improved Security Features:**

- Enhance the security of travel passes by incorporating robust features that guard against tampering and forgery, ensuring the integrity of the border control process.

#### 6. User-Friendly Experience:

- Provide travelers with a convenient and hassle-free experience by issuing e-passes via SMS, allowing for easy download and presentation at checkpoints without the need for repetitive information sharing.

#### 7. Centralized Monitoring Dashboard:

- Create a comprehensive web-based dashboard for highway authorities to monitor and manage state border checkpoints in real-time, facilitating proactive traffic management and resource allocation.

#### 8. Data Accuracy and Legibility:

- Improve the accuracy of information through digital data entry, reducing the likelihood of errors and ensuring clear and legible records for verification purposes.

#### 9. Increased Compliance:

- Encourage widespread adoption and compliance with the new system among state border police, highway authorities, and travelers through effective training and communication initiatives.

#### 10. Efficient allocation of resources:

- Help highway authorities make informed decisions by providing information on traffic patterns to effectively allocate resources and employees based on current needs.

#### 2.4 WORK CARRIED OUT

#### 2.4.1 Overview

#### 1. Requirement Gathering:

- Conducted unique discussions with stakeholders to recognize the needs of country border police, motorway authorities, and tourists.

#### 2. System Architecture Design:

- Designed a scalable gadget architecture the usage of React Native to make sure efficient functioning of the Travel e-Pass System.

#### 3. Web App Development:

- Developed a consumer-pleasant React Native cell app for kingdom border police, bearing in mind green enter of vehicle, driving force, and passenger data, with offline functionality.

#### 4. Data Storage and Protection:

- Implemented a stable database to store accrued data, adhering to statistics protection standards and regulations.

#### 5. Integration with SMS Service:

- Integrated the device with an SMS carrier to automate the delivery of e-skip info to travelers, including particular download hyperlinks.

#### 6. PDF Generation and QR Code Integration:

- Implemented a module to generate PDFs with important journey information and QR codes for brief verification at checkpoints.

#### 7. Real-Time Validation System:

- Developed a React Native actual-time validation machine, allowing police to experiment QR codes at subsequent checkpoints for fast verification.

#### 8. Highway Authority Dashboard:

- Created an internet-based React Native dashboard for toll road authorities, offering actualtime insights into checkpoint activities and site visitors styles.

#### 9. Testing and Quality Assurance:

- Conducted thorough trying out, inclusive of unit and integration checking out, to pick out and deal with any insects, making sure seamless functionality throughout devices.

#### 10. Deployment and Support:

- Deployed the device in levels, beginning with a pilot application, and supplied ongoing support. Collected consumer remarks for continuous development.

#### 2.4.2 MEATHODOLOGY USED

#### 1. User and Admin Dashboard Development:

- Build simple user interfaces for travelers and admins utilizing Html Css.
- Ensure the dashboards are easy to use and have various components depending on the roles of users.

#### 2. Sign-Up Screen:

- Create an easy log in page for travelers that requires minimum inputted information.
- Make sure that user are provided feedback in case of any errors as they register.

#### 3. Sign-In Screen:

- Build an authentic sign-in page that is password-protected for use by both travelers as well as administrators.
- Have clear errors handling, and user-friendly messaging in the login process.

#### 4. Admin Dashboard:

- Construct a specialized dashboard that will enable supervisors to monitor and control the system.
- Have user management, data analytics and e-pass validation logs for instance.

#### 5. Apply for e-Pass Form:

- Create an app-based e-pass with vehicle information, driver information and details about the purpose of trip.

#### 6. Download e-Pass using Token:

- Design a token based secure method of issuing and distributing e-passes.
- Give travelers a unique token token and send them a link in SMS for e-pass download after application.

#### 7. QR Code Display:

- Provide a screen or page in the mobile application that displays the produced QR code.
- Be sure you have your QR Code filled with appropriate travel information that can be easily scanned and validated in a checkpoint.

#### 2.4.3 Tools Used

#### MyPhp:

The travel e-Pass system that provides a robust backend database enabling data interoperability, authentication process on different devices, and seamless integration with the cloud.

#### HTML, CSS, JS, Bootstrap, SQL:

Developing web applications within a single code base that runs on both Mobile and desktop platforms, to achieve efficiency and uniformity of the end user experience.

#### **TypeScript:**

A superset of JavaScript with statiic typing for enhaced code quality, better tooling, and a better developer experience in developing Travel e-Pass System.

#### **Visual Studio Code (VS Code):**

A widely used IDE or code editor that provides powerful functionalities, extensions, and cross-plateform compatibility, creating one of the best code environments in the market that can be utilized for React Native and TypeScript programming.

#### 2.5 SOLUTIONS PROVIDED

Imagine thi: every time you travel across state lines, you don't have to repeat the task of providing the same information at every checkpoint. Consider a solution in the form of a user-friendly mobile application designed for state border police. The app supports the process by allowing police to access vehicle details, driver details, licence, registration, passenger details, brand visit purpose and long-term stay information. Immediately after submitting, you will receive a text message with a link to download your electronic pass (e-pass). The e-pass is available as a downloadable PDF with basic details and QR code. The QR code works as a quick check-in tool at the next checkpoint, ensuring a hassle-free journey without restrictions as long as the e-pass is valid. Moreover, the accurate highway on the dashboard helps in effective management by providing a comprehensive overview of all elements.

What makes the application even more important is its offline functionality, which allows it to work well in areas where there is no internet connection. Data entered in offline mode will be synchronized seamlessly when the device comes back online. Security of sensitive information is important; Therefore, the application uses strong encryption for data storage and security transmission protocol. For the convenience of travelers, the app allows travelers to store their passes on their smartphones, eliminating the need for printing. The system also includes instant verification of checkpoints and guarantees fast check-in using the mobile app. Additionally, historical data is stored for analysis and reporting, providing information on traffic patterns and cost compliance.

The app is checked for compliance to ensure it meets legal and privacy standards. There is also good training for border police in the state and support in dealing with urgent problems. The app integrates with existing data and systems, becoming an integral part of the entire travel process. More importantly, the digital travel e-pass system not only facilitates the travel of border police and passengers, but also provides management capabilities to the highway police through instant tracking, reporting and analysis.

#### 2.6 RESULTS AND CONCLUSION



# **Travel Gateway**

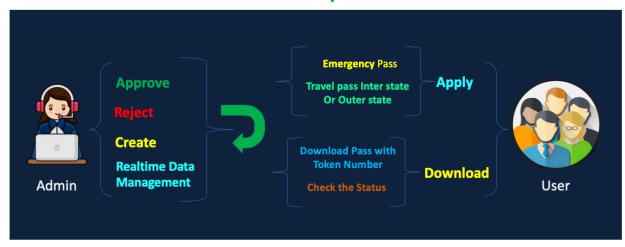
For Essential Services and emergencies

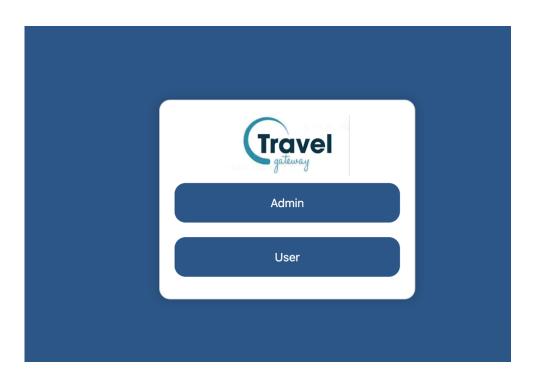
Project URL:

# **Objective & Challenges**

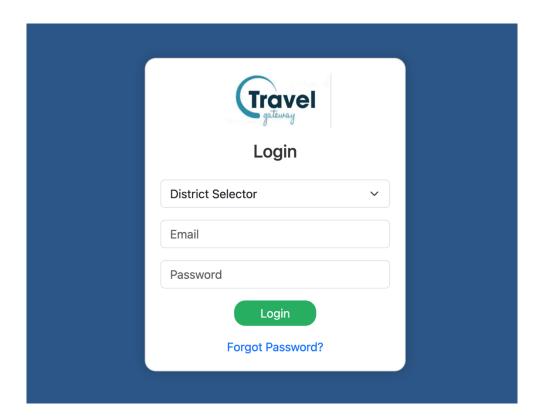


# **Travel e-Pass System Flow**

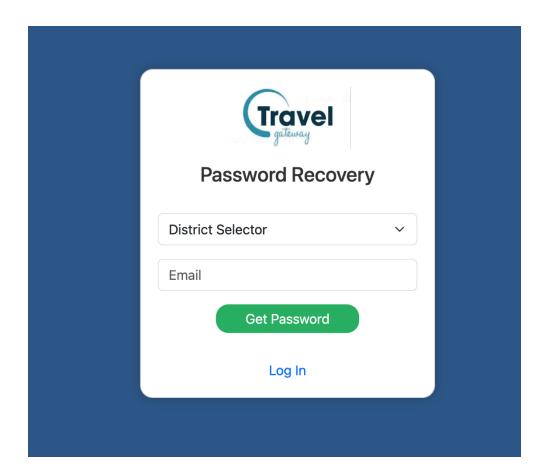




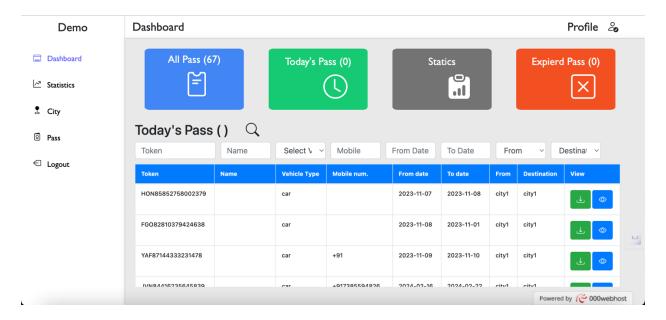
Admin-Login



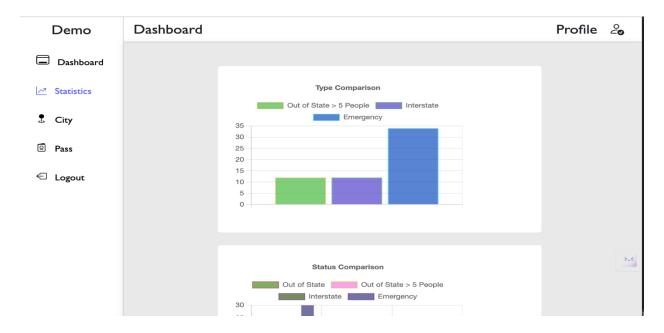
# **Admin-Forgot Password**



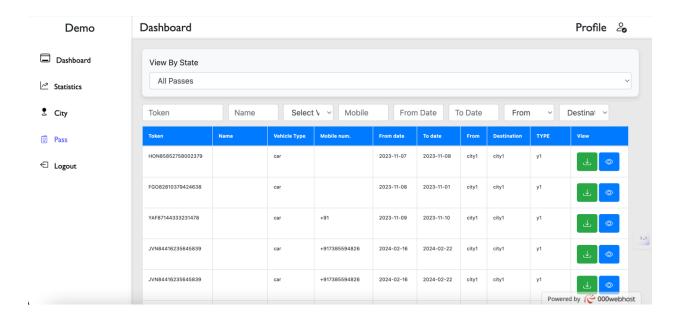
**Admin- Dashboard** 



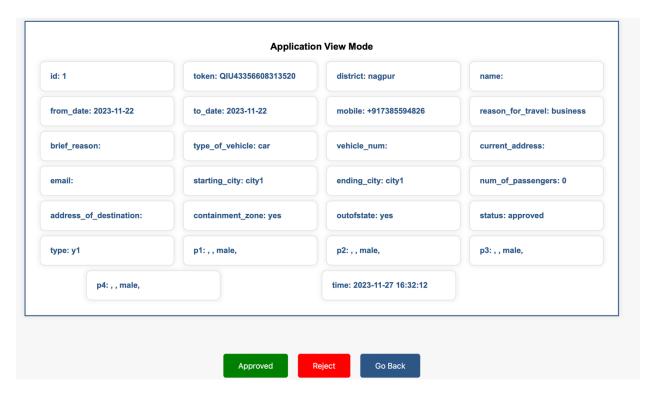
#### **Admin-Statistics**



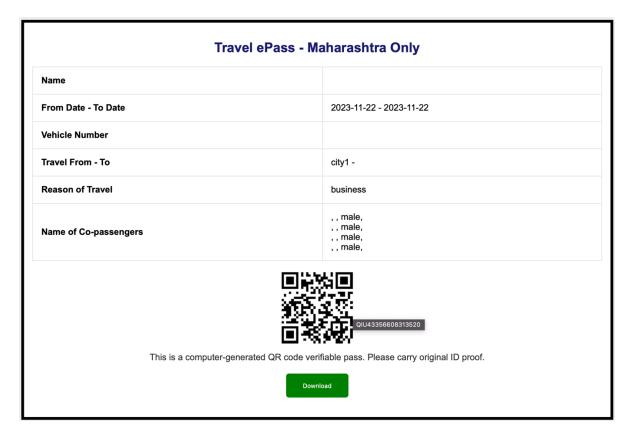
#### **Admin-Pass**

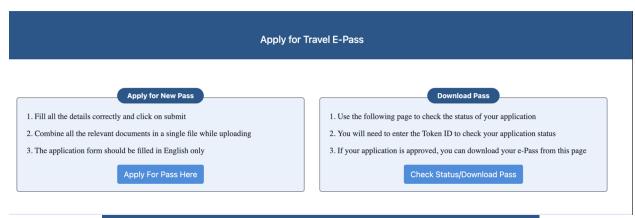


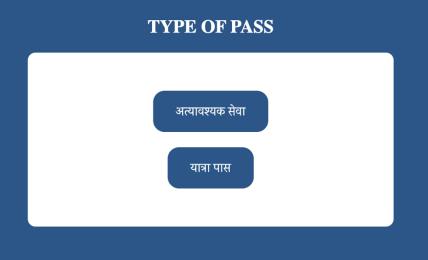
# **Admin- Application View Mode**



# **Admin- Application View Mode**







#### **Emergency Service Form**



Submit

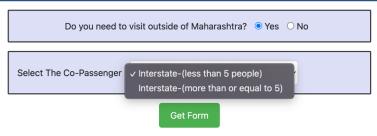
Preview

Choose File no file selected

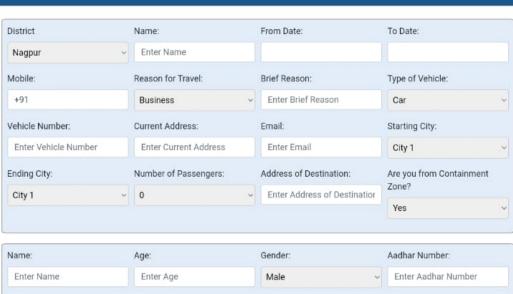
Choose File no file selected

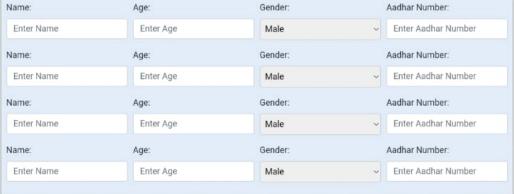
Disabled



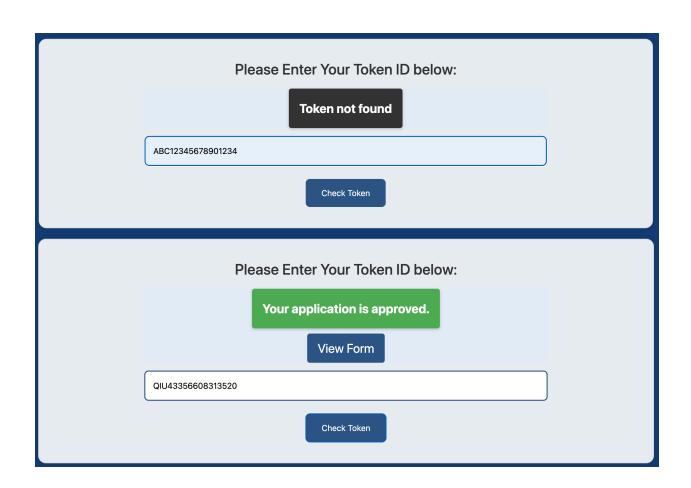


#### **Outofstate Service Form**



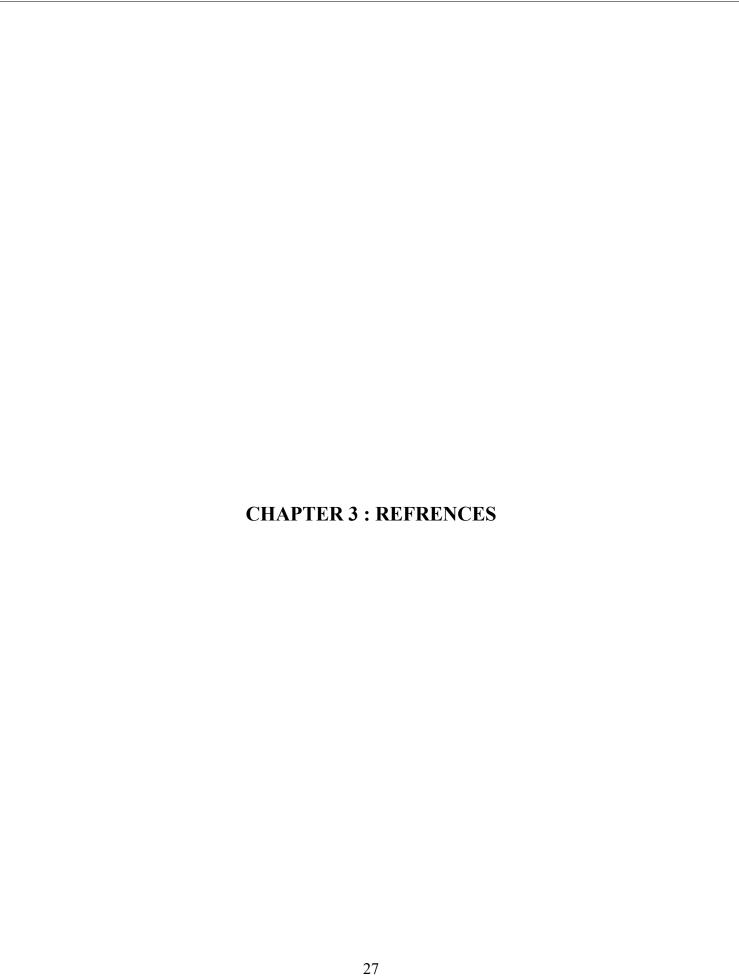


Submit



#### Conclusion

In conclusion, the development of our travel e-pass system using HTML CSS JS PHP SQL screen marks a significant leap forward in creating a streamlined and user-friendly application. With an intuitive navigation system at its core, users can seamlessly interact with the Webapp, enhancing their overall experience. Leveraging the power of Bootstrap, we've not only ensured cross-platform compatibility but also expedited the development process. As we move forward, this robust and efficient application is poised to revolutionize border checkpoints, offering a digital solution that prioritizes user convenience, data security, and real-time functionality.



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# **Appendices**

Title of Project: Digital Travel E-Pass System for Smooth Movement of

Interstate Vehicles

Name of Industry: Adivid Technologies Pvt Ltd

Name of Supervisor: Mr. Kovid Sawla

Name of Student: Rishikant Jaiswal