Multiple Models based Real Time Bus Facility using Machine Learning

Vasanta Sanga
Department of Computer Engineering
Wagholi, Pune

Dhanashri Patil
Department of Computer Engineering
Wagholi, Pune

Mayuri Shirke
Department of Computer Engineering
Wagholi, Pune

Priti Navale
Department of Computer Engineering
Wagholi, Pune

Abstrac: This project aims to provide an effective solution for maintaining Bus pass information using a database. Online Bus pass generation is useful for people who are facing problems with the current manual work of bus pass registration and renewal. The system has two logins, one for user and other for admin. Online bus pass Generation system is a web application for people to get Bus passes through online. This system was intended to develop an application to perform functionalities like accessing the basic information for authentication and provide Bus pass to a particular person without placing him/her in a queue for a long time. Online bus pass generation system is helpful as it reduces the paper work, time consumption and makes the process of getting bus pass in simple and faster way. User can refill their account and extend the validity every time when the pass expires. Admin can view all users' details and balance through its login. This system is helpful to people to get bus pass from anywhere in the Maharashtra state and no need to worry about renewal of the Bus pass. And we also provide searching of bus like, bus name, bus time, etc. so people no need to worry about bus information also to find out number plate detection of the bus.

Keywords: smart Bus, Digital India, Machine Learning, Deep Learning, Tensorflow, Keras, Number Plate Detection, QR Code, Image Processing, PHP, Html, CSS, MySQL etc.

I- INTRODUCTION

This project is created to provide "safe, reliable, saving, efficient and affordable" services for user. This idea would help the user in a better way. As per the previous system the user had to do each and every process manually, but this system helps user to make the work bit faster. The bus pass will be differ for different types of users. The renewal process can be done monthly. Based on that renewal period amount will be deducted. Our work introduces a new method of generating the Bus pass through online. In our system verification can also be done by sending an otp to student mail. Then the payment can also be done through net banking. There are many modules in our project. They are:

1. Registration

2. Verification

3. Pass generation

5. Renewal of pass

III – BACKGROUND

1. Machine Learning:

Machine learning having ability to learn without explicitly program and perform operation in efficient manner, three types of machine learning algorithm perform on various algorithm.

I- Supervised Learning: Supervised learning is the machine learning task of learning a function that maps an input to an output based on example input-output pairs. It infers a function from labeled training data consisting of a set of training examples.

II- Unsupervised Learning: unsupervised machine learning, uses machine learning algorithms to analyze and cluster unlabeled datasets. These algorithms discover hidden patterns or data groupings without the need for human intervention.

2. Android: Android is a mobile operating system developed by Google. It is used by several smartphones and tablets. Developers can create programs for Android using the free Android software developer kit (SDK). Android programs are written in Java and run through a Java virtual machine JVM that is optimized for mobile devices.

3. PHP: PHP is a server side scripting language. that is used to develop Static websites or Dynamic websites or Web applications. PHP stands for Hypertext Pre-processor, that earlier stood for Personal Home Pages. PHP scripts can only be interpreted on a server that has PHP installed.

4. MySQL : MySQL is a relational database management system based on SQL – Structured Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. The most common use for MySQL however, is for the purpose of a web database.

5. HTML5: HTML stands for Hyper Text Markup Language. HTML is the standard markup language for creating Web pages. HTML describes the structure of a Web page. HTML consists of a series of elements. HTML elements tell the browser how to display the content.HTML5 is the latest evolution of the standard that defines HTML.

6. CSS: CSS is the language for describing the presentation of Web pages, including colors, layout, and fonts. It allows one to adapt the presentation to different types of devices, such as large screens, small screens, or printers. CSS is independent of HTML and can be used with any XML-based markup language.

IV – PROPOSED SYSTEM

In the proposed system user register their details through online and get their unique user-id for further processing. The bus pass will be differ for different types of users. In this bus pass, all the required details such as candidate name, address, date of birth, mail id, name of the school, validity period, amount paid and photo copy of the candidate are provided. Instead of school details, working organization details will be provided in employees bus pass. User can easily renew bus pass at the end of every month, if renewal not done by user then automatically pass will expire. This system is not just only for students but also for employees, senior citizens, handicapped. Customer can buy pass over the internet, 24 hours a day throughout the week, and solves the issue of bus ticket being misplaced or stolen.

In the proposed system user register their details through online and get their unique user-id for further processing. After registration Successful the bus pass will be differ for different types of users in this bus pass, all the required details such as candidate name, address, date of birth, mail id, name of the school, validity period, amount paid and photo copy of the customer are provided. User can easily renew bus pass at the end of every month, if renewal not done by user then automatically pass will expire.

Customer can buy pass over the internet, 24 hours a day throughout the week, and solves the issue of bus pass being misplaced or stolen. Online transaction done by user using credit or debit card, after successful transaction bus pass will send to users email id and also available in users profile, pass also available on user profile online as well as offline.

1. Admin:
Admin controls the overall system of Smart Bus.

2: User
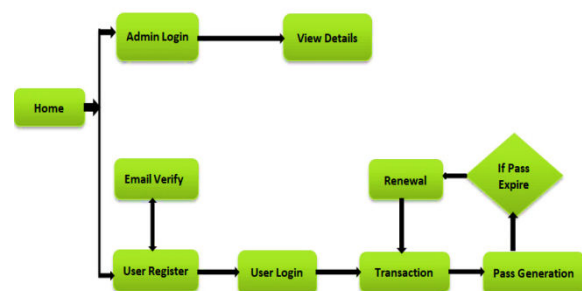User can manage their account such as Bus Pass, renewal of pass, etc.

Figure1: Block Diagram of Bus Pass System

IMPLEMENTATION

Our application will then provide the user with a list of buses for their route from that bus-stop. The list will also contain the information about seat availability based on that information the user has to decide the bus he/she wishes to travel with. This change in route will primarily be done to take up the option of a lesser crowded bus. Through this commuters can get live information about the different routes and crowd status in each bus. The destination and fare will remain the same.

Counting the passengers inside the bus can be done by predicting with the help of sensors. These sensors will help to detect the inbound and outbound movement.
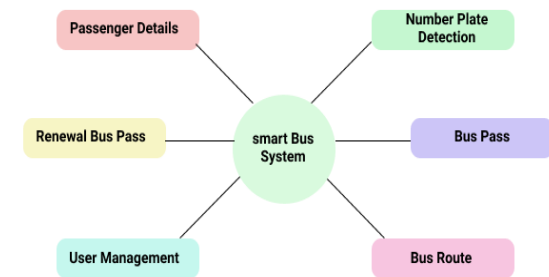

Figure: System Architecture of Smart Bus System

Calculated by using the GPS enabled device which will be with the bus conductor. The facility of chatbots and voicebots is also provided for easy interaction with the system. In this system we also provide ML based license number plate detection of any bus, it is one of the important feature that we will provide.

Step1. Login/Signup

Step2. User Dash Board

Step3. Submitting Booking Details

Step4. User account database

Step5. Store passes details in database.
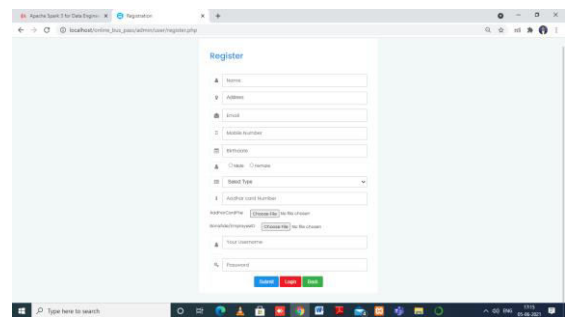
V- RESULT

Figure: Number Plate Detection
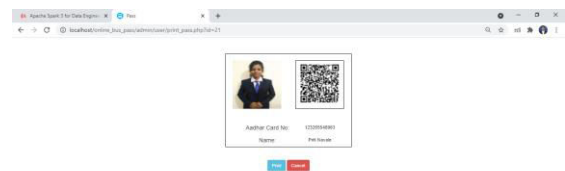

Figure: Registration for Bus Pass
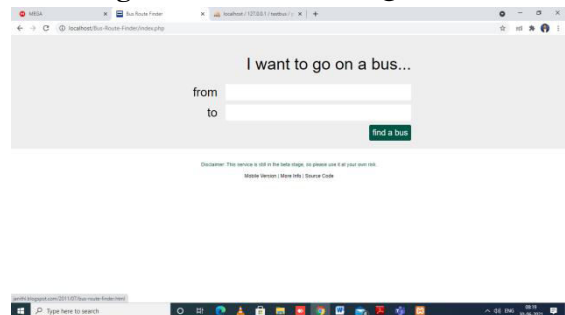

Figure: Bus Pass with QR Code

Figure: Bus Route Finder

VI –CONCLUSION

We concluded that, It is a very efficient and real time project. It is very useful for people who are facing problems with the existing system. By this project, we can easily buy a bus pass and also can easily renewal. We can also get a notification about various services easily. Bus pass registration and renewal can be done using credit and debit cards. As well as detect the number plate using the Machine learning and Deep learning technique based on keas and Tensorflow and detect the plate. It is real time project to solve the issue of Bus pass.

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