ONLINE BUS SYSTEM

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Abstract - *Nowadays, people prefer private vehicles to travel instead of public vehicles. So, The main goal of our project is to attract people towards public transportation thus reducing pollution. Thus, main idea behind our research is to implement Internet Of things in Public transportation. So, our project provides online bus transportation information for all users. Our system provides users features like online pass generation, shows schedule of buses, tracking of buses based on real time information, allow users to put their grievances. It also provides a separate employee corner for drivers, conductors, ticket checkers, head depots, technicians to efficiently manage bus system. Our system also provides with the accident alert system.*

***Key Words*: Online Bus System, pass generation, Accident Alert System, Bus Tracking**

1.INTRODUCTION

Nowadays, with growing population and pollution there is great need of efficient public transportation. Today's scenario is people are seen waiting in a long queue for pass generation as well as waiting for buses. Our system has reduced manual work providing online pass generation facility 24*7.It also provides users facilities like schedule of buses, tracking of bus, also sends notifications to their guardians regarding their safe journey. It also reduces the paperwork required to generate the pass. Our system has an employee corner which reduces the manual work of head depot, technician. It also provides accident detection sensors which sends messages to nearby hospitals. This Arduino Uno processor is used as accident detection sensor which is connected to WiFi which sends messages to nearby hospitals.

Thus, this will be a better option for people to use bus transport system which will help people to "GO GREEN". The main motto of this project is to attract more and more people towards usage of public transportation. Thus it will result in growth of Government income.

2. LITERATURE SURVEY

Today buses are the most widely used in transit technology since bus networks are easily accessible and cheaper than other kinds of public transportation. People prefer bus transportation more due to its low cost and wide area coverage.

A survey was conducted regarding problems faced by people with public transportation. According to the survey the problems faced were:

1.People waiting in queue for pass generation

2.Less User Friendly

3.Problem of Safety.

3.OVERVIEW OF PROPOSED SYSTEM

3.1 Problem Statement

Main problem faced nowadays is that buses are not managed properly. There is no such system upto date which provides accurate timetable and information regarding bus delays as well as exact timetables and arrival of buses.

3.2 Solution

The basic but main problem of people waiting in queue for pass generation was completely solved in this "Online Bus System".This system provides relevant information regarding all the buses along with its route details and real time location. Our system is operated by ARDUINO UNO sensors,GPS which is attached with the bus. GPS receives the satellite signals and then the position coordinates with the latitude and longitude are determined by it.The location is determined with the GPS and transmission mechanism.It helps remote users to access information of bus. ARDUINO is used as accident detection sensor.When a certain accident occurs,the Arduino will sense it and the message will be sent to all nearby hospitals.Thus providing safety measures immediately.

3.3 Architecture of the proposed system

The proposed system has 4 modules:

1.User

2.Admin

3.Employee Corner

4.Accident detection System

Online Bus System, emerging in line with the new generation of web application that manage the user as well as bus information and documents. It's a centralize people's secure public transportation system which can be used for multiple services which consuming very less time,relevant as well as efficient for the people to use. Also this service by everyone to make Bus System Digitized . Online Bus System is based on architecture and consist of the following modules.

The scope of online bus system is as follows

3.3.1 For User:

- The user should be able to login into the system.
- The user should be able to change their password after first login.
- The user should be able to access the modules like pass generation,pass renewal,grievances,bus tracking facility,suggestion,searching time table.[2]

3.3.2 For Admin:

- The admin should be able to access each and every module of the bus system.
- The admin gives access permissions to each and every user of the system according to their role contributed to the system.
- The admin can access account of each and every user.
- The admin is responsible to maintain the security of the system and manage the overall database.

3.3.3 For Employee Corner:

- There are 5 types of Employees:
- The employee such as driver, conductor, ticket checker, head depot and technicians should be able to login into the system through Employee portal.
- They should be able to change their password after first login.
- The Driver should be able to track the route of the bus,should be able to put the grievances related to the technical problem of the bus.
- The conductor should be able to update the record of the bus along with the tickets.
- The technician should get a notification related to the technical issue of the bus along other details of the bus.
- The Head Depot will handle and update all the information related to their depot.
- The Ticket Checker will check and update the information regarding the number of peoples who were fined.

3.3.4 Accident Detection System[1]

This system detects the live updates of accident vehicle with their location details with the help of GPS and ARDUINO sensors.It ensures to send a message regarding location details to all the nearby hospitals thus provididng immediate service. This system uses ARDUINO UNO sensor which is connected to WiFi.The main reason of using Arduino Uno WiFi is that it supports Over-The-Air programming.

- The limitation of this system is that it continuously needs to be connected to WiFi.
- It requires lot of maintenance.
- The initial cost of the system is high.

4. CONCLUSIONS

Thus this makes the users work very easy and the digitalization is achieved.This also avoids for standing in long queues and is very time saving. By implementing this idea,the major problem of pollution is solve since many people will prefer public transports..This system is also much more user friendly as compared to existing system.It provides feature of safety and security too.

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