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R-Indicator: The Bus Tracking System

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Abstract: *The idea to make something useful for travelling environment has led us to "R-Indicator: The bus tracking system". The application focuses on problem faced by bus passengers related to bus timing or cancellation of bus or any other. Well if you are new in the city or part of Ratnagiri city then you will always find the necessary information of the service buses, routes and their timings or current location etc. by using this, it is one of the best way of getting all the information in one application. The online users are able to see the live status or location of particular bus and also receive notifications related to delay or cancellation of bus. Also online and offline users can see the schedule of buses. The schedule consist of bus number, bus routes and their timing etc. This application will also show the time required to reach to the next station and distance between two stations. This application will highlights main stations with the help of Google map. To track the location of bus, the application will use GPS of Driver's or Conductor's smart mobile phone. Dijkstra's Shortest Path Algorithm (DSPA) is used to calculate distance and time required to reach two pick-up shades.*
Keywords: *GPS, Google Map, Dijkstra's Shortest Path Algorithm (DSPA).*

I. Introduction

Android is the emerging technology in today's world. Android applications have become a trend these days. Our lives have become much reliable and enjoyable because of some famous applications with their functional tactics. In this case waiting for the buses is not reliable. People who rely on the public transport their major concern is to know the real time location of the bus for which they are waiting for and the time it will take to reach their bus stop. This information helps people in making better travelling decisions. The application comes packed with very interesting and impressive features. It provides the travelers with real-time notifications and information about the bus. It makes spotting and finding of a bus a real easy task. The application even lets a user to find the nearest bus stop from their current location through their phone's GPS. In order to make travelling by buses easier and worry free, the application provides the user with the route maps of the bus route. It even provides them information like distance and number of stops about the bus. Now-a-days, many people have Smartphone in their pockets. So, an application suitable for them it is expected to be successful.

II. Literature Survey

GPS Based Bus tracking System is an Application that has its client side on the Android platform. Application is free of cost and easy to install on device. The system is effective where Internet is accessible. Passenger installs the application on android platform and selects the information like Route and Bus number from the drop down list. If Passenger clicks on Map then current position of bus is displayed on the Google map. [1] Low-Cost Bus Tracking System Using Area-Trace Algorithm eases every user with a simple basic functionality mobile phone to get the information of the bus. The main advantage of the system is that it neither requires a GPS nor an internet connection. The user has to simply send a SMS from his mobile phone in a specified format to a standard toll-free number and the system would be in return sending the user with current location of the bus, vacant seats in the bus, its expected arrival time, etc.[2]

We are studying some deployed applications to effectively design the android application. We reviewed the functionalities included in some of the existing systems for buses. MSRTC application is especially for online bus reservation. [3]

Ratnagiri Bus Guide application is specially designed for only city buses. Which give us details including timing, bus stops and distance between various pickup shades statically.[4]

M-Indicator application is specially design for Mumbai metro city. This application provides facilities like train timing, time required to reach from one station to another station, notification regarding delay or cancellation in timing and mega block. But this application does not provide the live location of train. [5]

III. System Architecture

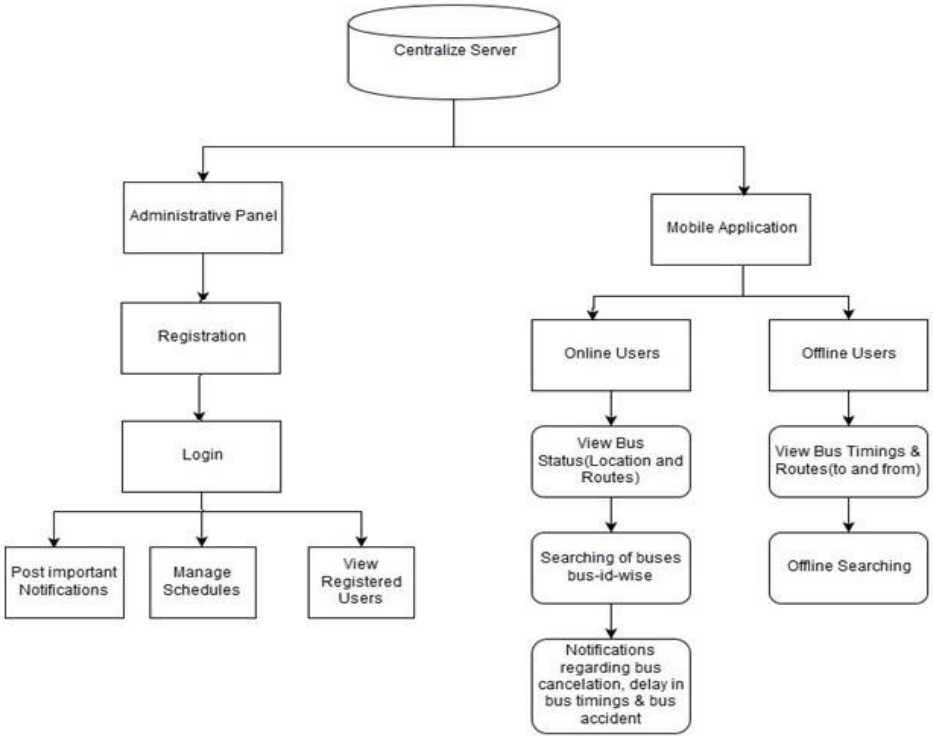

Figure 1: Block diagram of system Architecture

As shown in *figure1*, the centralized server provides the data to both administrative panel and mobile application. administrator panel and mobile application will not interact with each other directly. both modules will have their different functionalities. administrator will manage schedule and can view registered user on admin panel. All the authorized notifications uploading task will be in hands of the admin. Administrator will also take care of database.The working of the application is more concerned here. The application will be an interface to the data. All registered users get all the updated notifications which are posted by administrator. It will have local memory for storing notifications and later with help of internet, application will get updated notifications from the server.

IV. Conclusion

In the light of this, it is concluded that the application will be useful for travelers. Basically this application is for online and offline users, offline users able to see only bus schedule, routes and timing statically but online users can have all the functionalities of offline user as well as additional functionalities including viewing the current location of buses, notifications regarding bus cancellation or delay in bus timing etc.

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Applications:

[3]. MSRTC Application

[4]. Ratnagiri Bus Guide Application

[5]. M-Indicator