

PUBLIC ADDRESSING SYSTEM

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Abstract:- Due to train noise, crowding at the station, technical defects in the public address system etc. it is observed that the announcements from public address systems at railway stations are at times not audible. As a solution to this problem we are creating an application that will collect train details, time, travelling routines etc. as a input from user, so that we can use that data to specifically send notification to respective user for which user has subscribed. Due to train noise, crowding at the station, technical defects in the public address system etc. it is observed that the announcements from public address systems at railway stations are at times not audible. As a solution to this problem we are creating an application that will collect train details, time, travelling routines etc. as a input from user, so that we can use that data to specifically send notification to respective user for which user has subscribed.

INTRODUCTION

It is observed that the announcements from public address systems at railway stations are at times not audible. It may be due to train noise, crowding at the station, technical defects in the public address system etc. A solution needs to be evolved so that the passengers can listen to such announcements clearly on their personal devices like mobiles, tablets etc.

Due to announcements in the new train, often continuous, at very high decibel levels and including public interest messages and station announcements, the decibel level of the new trains exceeded those of the old trains. Bhajans in one of the train also produces noise pollution. On the journey between CST (Mumbai) and Thane, the highest noise levels of 91.6 dB were recorded near Byculla station when another train passed by.

With the new solution of developing application for listening railway announcements, railway stations can be noise-proof. Travelling via railways can be more comforting.

There are two kinds of Public Addressing systems, which are an analog Public Addressing system and a digital Public Addressing system.

The digital Public Addressing system has more communication quality than the analog Public Addressing, and there are a variety of digital Public Addressing systems made by many companies. A Digital Public Addressing system is utilized in all public places attended by vast crowds of people. In daily operation, such systems are not only used for public information or for promotional advertising, but also for musical entertainment or for internal purposes like the communication among staff in widespread buildings (by live announcements or by intercom operation).

In cases of emergency, such systems become particularly vital : reliable alarming and acoustical guidance of crowds with people being directed to certain targets is absolutely necessary for the prevention of chaos and panic, so that organization of a scheduled evacuation can proceed as planned.

Passengers will only need to register themselves on the application or website and keep our app on their personal devices. With new solution for Public addressing system, passengers can listen only those railway announcements which are related to their travelling routine.

LITERATURE SURVEY:

3.1 S.P.Kesavan, M.Dhanasekaran focuses on developing an intelligent system for passengers to identify location, in which sensor senses every location using GPS receiver. The system announces every and each station to all or any riders through speaker within the compartment and therefore the passenger simply to spot their destination.

This GPS receiver is capable of distinguishing the situation during which it had been gift within the kind of latitude and longitudes. The GPS provides the information received from the satellites. For this data the GPS communicates with a minimum of three satellites in the area.

3.2 In paper of **Mzah Yosra**, we tend to cope with a selected speech pre-processing for understandability sweetening in bright massive dimension public confined area like railway stations and airports. This methodology is devoted to public address systems accustomed broadcast vocal messages. The planned late pre-dereverberation technique is galvanized from apace acoustics equalisation approaches. It's supported the inversion of the late reverberation a part of the impulse response famed to be prejudicial to intelligibility and characterized by a frequency response that's freelance of the receiver position. a regular homomorphic inversion method for mixed part impulse response is used.

The performances of the projected late pre-dereverberation, with regards to the receiver position, square measure assessed employing a set of real impulse responses measured in several positions in Foggia terminus(Italy). Intelligibility connected acoustic indicators further as objective criteria square measure accustomed highlight the contribution of this method of this technique on intelligibility.

3.3 The Paper published by **NTT Communication Science Labs** focusses on a new real-time speech enhancement method that reduces signal distortion caused by stationary noise and late reflections of reverberation in speech signals captured by a one distant mike below multi-talker conditions. A major downside here is a way to estimate the energy of the late reflections in real time once the space impulse responses from individual talkers to the mike are not given or fixed in advance.

To solve this problem, we introduce a probabilistic room acoustics model, and provide a method for estimating the energy of late reflections based on this model. In this methodology, parameters of the model for a room can be fixed in advance only from a few seconds of observation. By incorporating the planned approach into a standard frequency domain noise reduction theme, we tend to notice an integrated period speech improvement framework. The effectiveness of the proposed method is confirmed experimentally for a case where there are two talkers in a room.

3.4 R. Ross discussed that Railway stations are examples of large and noisy areas to which voice announcements are to be made and were one of the early users of amplification to produce public address systems. Changes to station staffing arrangements have led to the need to provide voice information to unstaffed stations.

This has resulted in the development of transmission and remote control systems that tandem link several stations specifically for this purpose. These systems have to operate on existing trackside cables, using only one or two pairs, over considerable distances in a fairly hostile electrical environment, whilst providing good quality audio at the remote stations. These systems are known as long-line public address systems (**LLPA**).

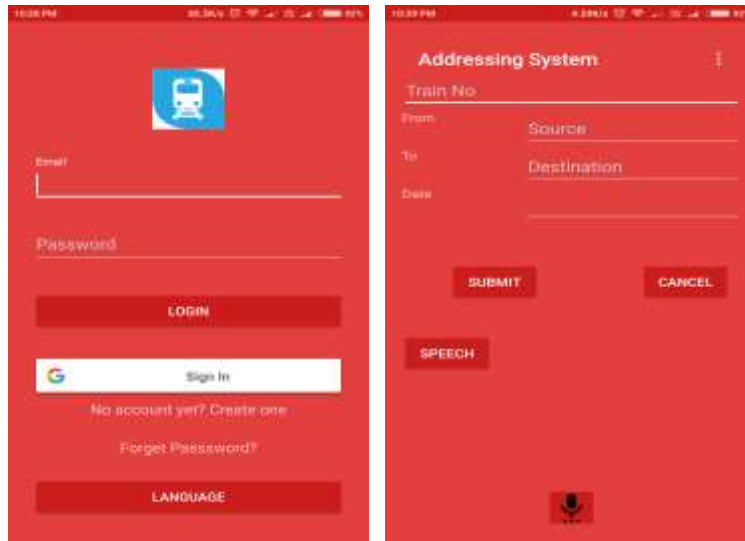
Software Requirement Spcification:

1. Introduction:

Consider opting for a mobile application based solution. An application can be created where the user can enter his train details like name, source, destination, time, etc. Databases must be maintained where announcements for the trains at a station can be entered. Database can be created using PHPmyadmin or **Microsoft SQL** server.

There must be one database applicable for general announcements and another database must be maintained for train specific announcements. When an announcement is entered into the database for a particular train, it will be sent to all passengers who have entered train details into the app for that train or registered on website. To get updated announcements through Application, passengers can use any internet connection or **RailWire Wi-Fi**.

2. User interface:



1. Hardware Requirement:

2. User Interface:

System Processor : Snapdragon Qaulcomm or MediaTEK or Kirin or Exynos

Mobile Processor : 1 GHz or higher

Motherboard : Genuine Device Based

RAM : 1 GB or higher

Memory : 8 GB or higher

3. Software Requirements

Operating system : Android Jelly bean

Technology Used : Android Studio 3.2 or higher

IDE : Android Studio

Emulators : Android Emulator

Plug-in : ADT plug-in

Back-End :SQLite

Front-End : Android SDK

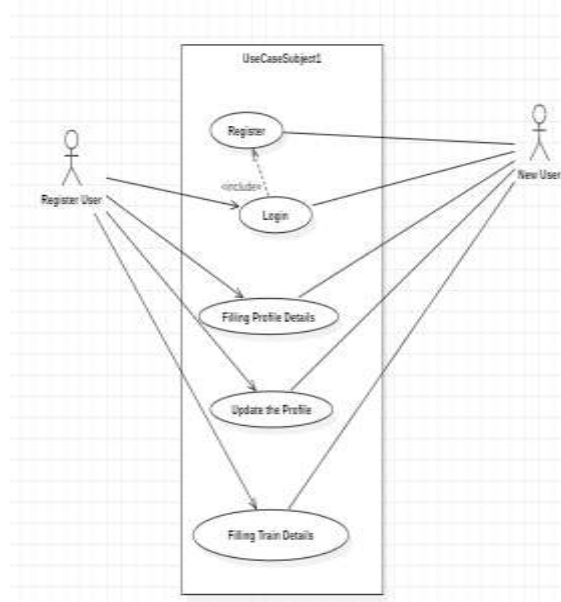
Product Design

1. General Flow Diagram:

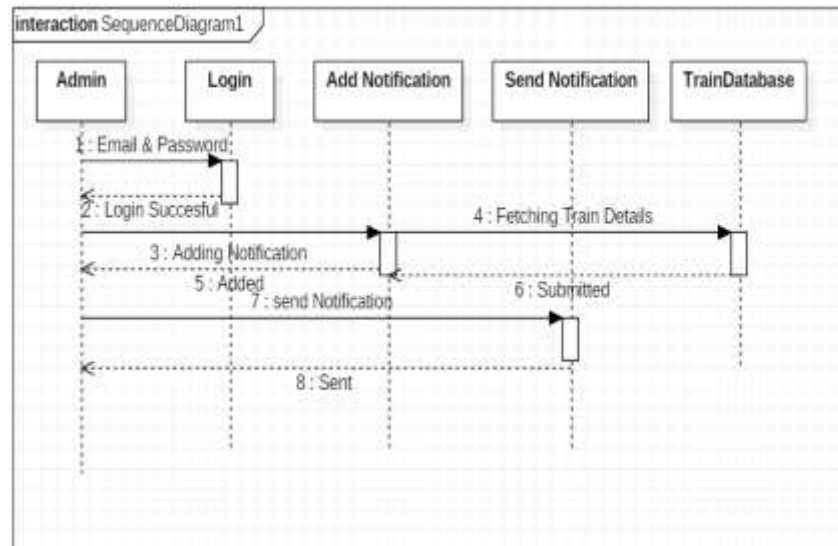


1. Use Case Diagram:

For Client-Side:



1. Sequence Diagram:



Results and Discussion

The main goal of the proposed work is to improve the Public Addressing system used in railway by adding the necessary additional features into the application, like accurate train timings, correct the trains notification and moreover adding a live status of trains into it. This study accepts input in the form of selection of the source and destination and selection of the train travelling the distance to display the entire details about the routes and also track the location of the respective train and give the map for the same.

The application could be a user friendly one that anyone will access without charge of cost. The basic idea for this project is to provide proper notification about those trains which are user wants to listen, all the possible stations that come on their way to the destination and moreover, display maps and track their locations and show the estimate remaining time needed to achieve.

The planned system has been divided into 2 modules as follows. Module 1 give information about all the trains along with the platform number that go through the selected stations and send this information to the passenger giving him/her the estimate time required for the trains to reach. Module 2 gives information about all the notification from the source to the destination and give maps for the same. This is done using the Client-Server technology.

Conclusions

Consider opting for a mobile application based solution. An application can be created where the user can enter his train details like name, source, destination, time, etc. Databases must be maintained where announcements for the trains at a station can be entered. Database can be created using **Microsoft SQL** server.

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