IJIRCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 11, Issue 4, April 2023

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.379

International Journal of Innovative Research in Computer and Communication Engineering

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 4, April 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1104023 |

Voice Controlled Home Automation

Prof. S.P.Chattar, Shrinivas Mane, Avishkar Manchare, Prathamesh Nagpure, Vikas Bahire

Department of Computer Technology, Pimpri Chinchwad Polytechnic College, Nigdi, Pune, India

ABSTRACT-This paper is based on project which developed for controlling home appliances through internet in real time and also to operate them in different modes from any remote places. Our main focus is to operate the home appliances in our desired modes and control them in an easy way. We have developed an android based application for controlling appliances and operate them in different modes like optimum, sleeping, auto etc. also all the appliances can be controlled individually. Different sensors have been used for analyzing lights, temperature and motion. Based on sensor values our algorithm will operate all the appliances according to modes. So by operating them in different modes it will save power as well as make our life easier and comfortable.

KEYWORDS: Home Automation,Power supply, Bluetooth

I. INTRODUCTION

Public modes of transportation in Pune include trains, buses and ferry services. With over 88% commuters preferring public transportation [1], there is an increased emphasis on optimally planning these transit systems. The greater connectivity via buses makes them the preferred choice of public transport by commuters for their daily travels.

This raises the issue of using the fleet size of 3500 [2] efficiently and scheduling them to make the efficient use of these resources. Overcrowded and infrequent buses have become commonplace and as a result cause a lot of discomfort to commuters. This is the result of inefficient scheduling and allocation of resources i.e., fleet size. The existing scheduling at BEST is done by human intuition, thereby making it tedious, error-prone and inconsistent depending on the person responsible for scheduling. At a time when human resources are lacking in different areas of daily life, wasting them on a task that can and should be automated is definitely an issue that needs to be resolved.

Moreover, these schedules do not alter for long periods, four months precisely. It is a big problem in Pune especially because there are problem in Pune especially because there are a lot of holidays, public events and activities that alter the passenger frequency for the day. Thus, a dynamic scheduling system would help distribute the passenger traffic on a route in a way to avoid overcrowding and also increase the frequency of buses running on a route. As a result, there is a lot of research required in order to automate the scheduling and allocation of fleet size. The existing research work either focuses on allocating resources on routes or on optimal scheduling of resources. An ensemble of both the problems is not considered by any of the works referred.

Wagale et al. [3] implemented a demand and travel time responsive model factoring in passenger travel demand, bus traffic costs and bus stop departures and arrival times. Their target is to minimize cost of operation and find the service frequency. A combination of k-means clustering and Naïve Bayes classifier is used to predict travel times in Deb Nath et al. [4]. Kornfeld et al. [5] presented a solution by redefining routes, predicting rush hour timing and showing the need to run more buses during that time. It works on the assumption of infinite bus capacity and thereby is not useful for our proposal.

II. LITERATURE SURVEY

With the increase in demand for public transport and the inability to match those demands due to inefficient planning systems, there has been an increase in research aimed at optimizing scheduling systems that will reduce the discomfort caused to passengers due to overcrowding and reduce unnecessary bus operation. Eshetie Berhan et al. [6] dealt with bus assignment per route for four different shifts of work in a day: two peak and two off-peak shifts. It considers features such as route performances, number of passenger served, total trips made, revenue collected, operating cost and total distance covered. In their approach, a Linear programming model was considered with parameters like heterogeneous fleet size, demand proportion to predict number of trips made for each bus type. Makrand Wagale et al. [3] developed a

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 4, April 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1104023 |

demand and travel time responsive (DTR) model to find optimal bus frequency and to optimize bus schedules. It considers social costs like passenger waiting and riding times and simultaneously considers bus operation costs, bus headways and so on at every bus stop. Headway is maximum permissible time after which the bus must be dispatched on
the route.The paper used evenly spaced time intervals while formulating the timetable. Avishai Ceder [7] proposed three methods for timetable development by trying to minimize the passenger waiting time. Even-Headway timetables (scheduling buses after fixed intervals based on bus capacity and passenger load), Even-Load timetables (scheduling buses
at varying intervals based on passenger load variation) and the combination of the two are the three methods suggested. It formulates vehicle scheduling as a cost-flow network problem and uses step function termed deficit function, as it represents the deficit number of vehicles required at a particular terminal in a multi-terminal transit. It uses deadheading (empty trips)
to ensure achieving multiple trips from different terminal by a single vehicle. Carbno Collin [8] came up with mathematical models that weigh numerous factors on delivery schedules, in

determining the allocation of resources to different projects. The paper helps understand optimal resourcing and Manfred's distribution and design intelligible linear models given the
multitude of factors affecting such decisions. RudraPratap Deb Nath et al. [4] partition a set of historical data into clusters based on travel time, frequency of travel time and velocity for a specific road segment and time group. Maximum frequency for travel time is used as the centroid and the tuple with maximum deviation becomes the centroid of the other cluster. The average travel time over all clusters is taken to estimate the travel time on that route. Wei Fan et al.
[9] develop and compare dynamic travel time prediction models- Historical Average (HA), Kalman Filtering (KF) and Artificial Neural Network (ANN) which can provide accurate prediction of bus travel time in order to give real-time information at a given downstream bus stop using only global positioning system (GPS) data. Anirudha Nanda et al. [10]
proposes a heuristic model for the timetabling problem from the teachers' perspective that uses three different data structures, namely, Output, Clash and Day_Clash. This paper aided us in understanding the problem of timetable scheduling with resource availability constraints. The only drawback is that it assumed no repetition of subjects while generating the
time table. Liping Fu et al. [11] proposed a dynamic scheduling model with a skipping control for every alternate bus. The normal buses halt at all stops while the express buses skip over some stops.

III. PROBLEM DEFINATION

In the present scenario the majority of switching operations are manual and do not imbibe the idea of IOT and the interconnection of various applications to help optimize operation. These days there is a clear divide between electrical and software systems, and this leads to inefficient and often incompatible processes. To solve this dearth in integration of a variety of applications, this project of Home Automation aims to use a modem that brings all switches and control to the user in one place

IV. PROPOSED SYSTEM

Voice input block The Voice input block takes the voice of the speaker as an input signal, as the name implies. This block comprises of an input device, which might be a sensor, to detect voice as an analog input to the system. The analog input signal is then passed onto the block responsible for receiving and processing the input signal.

Signal receiving and processing block The signal receiving and processing block is responsible for receiving the analog voice input signal, and converting it into a digital signal so that it is compatible with the rest of the system. This block is also responsible for storing the commands, which will be later term as the preset commands. This block is trained according to

human voice vocabulary, and it matches and identifies voice commands, relating to the function it is expected to perform. Storage block When the signal processing block is trained, through the manual training block, space to store input commands is required. Space is needed to retain predefined commands as addresses in the memory, and later match the spoken commands with the predefined commands to perform a function. In this block, first

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 4, April 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1104023 |

predefined commands are saved and later they are used for matching with the voice input to perform a defined task. Controller block The controller block is responsible for interfacing the rest of the circuitry with the upper part of the circuit; otherwise there is no other medium of creating a connection of the input and storage blocks with the display section, and the coding block. Display block The display block is included, since it was needed to make the system more users friendly and easily accessible to all. The display block displays the command that have spoken, so that they can also be visualized, and also know the function that is going to be performed. In case of errors, it also notifies about the error. It is a medium of sense created to help the usersTransmitting block It is to send signal from one point to the point of reception using suitable transmission technology.

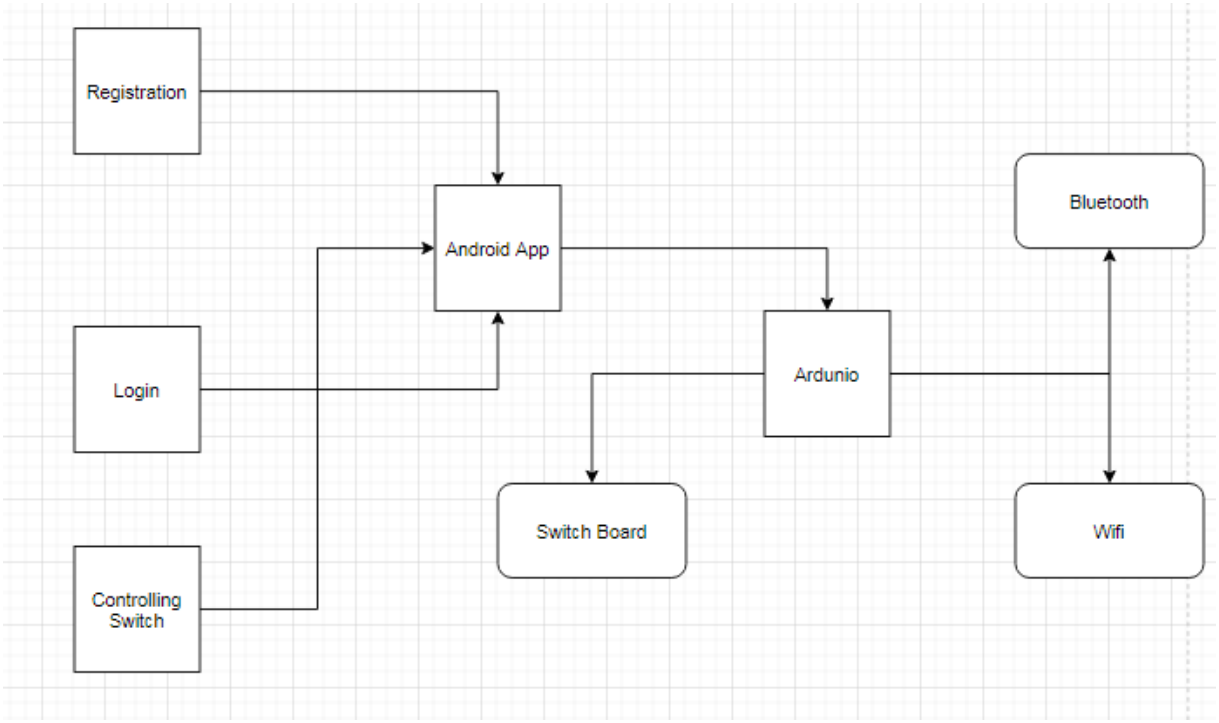

Fig 1.Architecture Diagram

5. Advantages:

- Multiple socket control
- Possible expansion of new sockets
- Cost effective

6. Limitation:

User should have internet and android app to access the website Wifi should always be on

7. Application:

1. Banks
2. Colleges
3. Hospitals
4. Shopping Malls

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 4, April 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1104023 |

5. Corporate Companies
6. Factories

V. RESULT

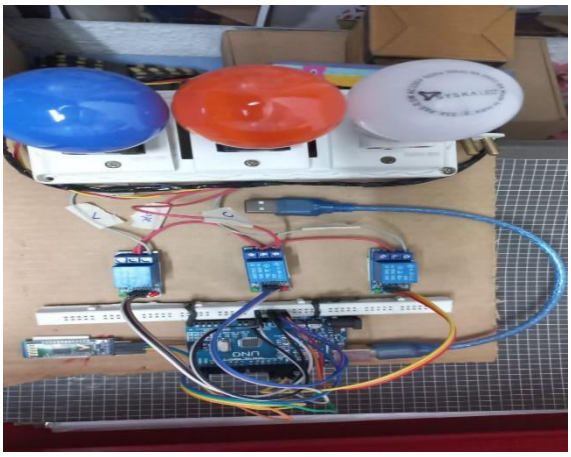

Fig 5.1 Hardware Screenshot

VI. CONCLUSIONS

we have presented the system designs and use cases of Smart Voice Assistant, a universal voice control assistant on Android operating system. The contributions of Smart Voice Assistant are twofold. First, it is the voice control application that provides enhancements to all applications running on a mobile system by synthesizing commands set from on-screen context. Secondly, it supports chaining of multiple commands in the same utterance which enables more natural and seamless interaction experience. Smart Voice Assistant can benefit large number of users with universal eyes free and handsfree voice control of their mobile devices.

REFERENCES

1. Prof.Rakhi Bhardwaj, Poonam Gupta, PoojaJadhav, BhagyashreeKadam, AmrutaKedari, "Android Based Automated Smart Wheel Chair", International Journal of Innovative Research in Computer and Communication Engineering, vol 4, Issue 3, March 2016.
2. Kiran N.V, Madhan Mohan Reddy, Deepika Yadav, Babitha K.M, "Optimal driving system for two wheelers", Proceedings of IRF International Conference, 05th April-2014
3. Yu Zhong, T. V. Raman, Casey Burkhardt, FadiBiadsy and Jerey P. Bigham, "JustSpeak: Enabling Universal Voice Control on Android", April 201
4. NorhazahbtAripin, M. B. Othman, "Voice control of home appliances using Android", Electrical Power, Electronics, Communications, Controls, and Informatics Seminar (EECCIS), 2014
5. ArunGopi, Shobana Devi P, Sajini T, Bhadran V K, "Implementation of Malayalam Text to Speech Using Concatenative Based TTS for Android Platform" International Conference on Control Communication and Computing (ICCC), 2013
6. ShraddhaUddhavkhadilkar, NarendraWagdarikar, "Android phone controlled Voice Gesture and Touch screen operated Smart Wheelchair", International Conference on Pervasive Computing (ICPC), 2015
7. Maya Rida, Michel Nahas, MiladGhantous, "iSee: An Android Application for the Assistance of the Visually Impaired", Springer International Publication, 2014
8. Chin-Tuan Tan and Brian C. J. Moore, Perception of nonlinear distortion by hearing impaired people, International Journal of Ideology 2008, Vol. 47, No. 5, Pages 246-256.

| e-ISSN: 2320-9801, p-ISSN: 2320-9798| www.ijircce.com | |Impact Factor: 8.379 |

|| Volume 11, Issue 4, April 2023 ||

| DOI: 10.15680/IJIRCCE.2023.1104023 |

9. Oberle, S., and Kaelin, A. "Recognition of acoustical alarm signals for the profoundly deaf using hidden Markov models," in IEEE International symposium on Circuits and Systems (Hong Kong), pp. 2285-2288., 1995.
10. A. Shawki and Z. J., A smart reconfigurable visual system for the blind, Proceedings of the Tunisian-German Conference on: Smart Systems and Devices, 2001.

INNO SPACE
SJIF Scientific Journal Impact Factor

Impact Factor: 8.379

doi cross ref

ISSN INTERNATIONAL STANDARD SERIAL NUMBER INDIA

निस्केयर NISCAIR

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

9940 572 462 6381 907 438 ijircce@gmail.com

www.ijircce.com

Scan to save the contact details