

All in One Hands Free Application: An App Based on Android Platform

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ABSTRACT:

Communication is one of the basic needs of human. And mobile phone has become an important medium for this. Internet has become ubiquitous. Web based applications have exponentially risen in the past two-three years. Therefore, this research paper aims to combine several aspects of communication on a phone into one single application. Our application is an Android based Application which allows sending Text messages, Emails, to do a Bluetooth Chat without the need of typing the messages. One just needs to speak up the message and this app will convert your voice into text. This application is allowing sending text messages via service provider or via online SMS portal website Way2sms.com free of cost and Emails via Gmail server or other carrier. This application also allows doing a one-to-one chat over Bluetooth.

Keywords: Chat, Bluetooth, Android, Emails, SMS, Mobile Messaging App, No Typing, Ease.

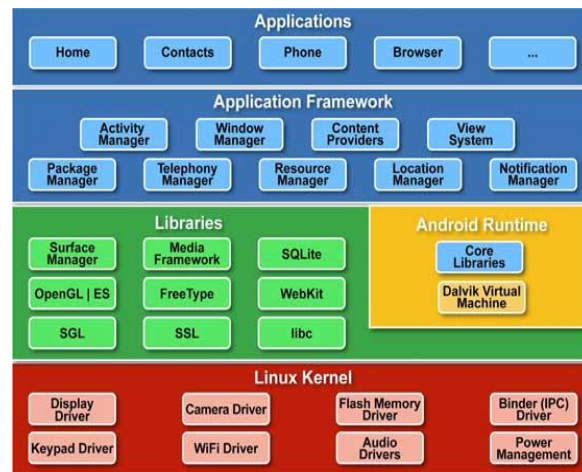
I. INTRODUCTION

With the advent of Operation System platforms like the iOS, Android, Windows and many others, the digital market was filled by millions of apps in a few years. But Android captured market very quickly & currently has 81% Shares with over 1 Billion Devices (2014 Stats). Android is a open source operating system based on Linux kernel developed by Android Inc. which google acquired in 2005. Communication has always been and always will be an essential part of our lives. Let it be Instant Messengers, Short Message Service (SMS), E-Mails, Bluetooth based chatting platforms, each of them have narrowed the virtual distance between people. This paper is based on an application which combines all the aforementioned platforms.

The USP of the application is that, users can send messages, mails without the need of typing. There are various applications available for sending text messages and emails but in all applications one needs to type the message and also if one needs to send the same message over text message and email, the person will have to switch between various applications and type the message again. And for chatting in smaller areas, the existing applications require either internet connectivity or through service provider that charges money. This research paper overcomes all these drawbacks and allows sending SMS, Emails, to do a Bluetooth Chat within a small area without the need of typing the messages. Person needs to speak up and message will be converted into text by the application. This application also allows sending the same text through message, email with very easy available system features.

II. THE ANDROID ARCHITECTURE

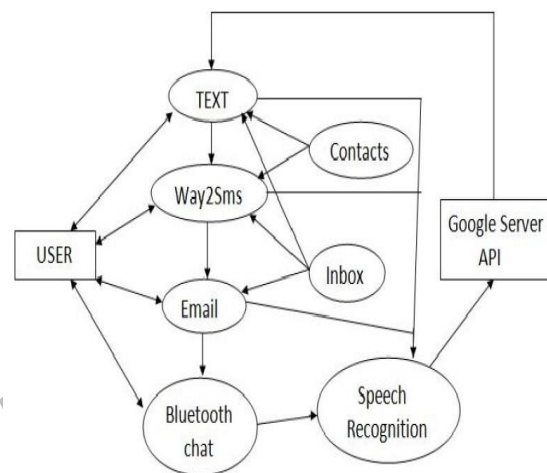
Android consists of five layers: The Linux kernel 2.6-which includes useful drivers that allow for example WiFi or Bluetooth. The library is written in C and C++ that provides a higher level functionality such as an HTML engine, or a database (SQLite). A runtime environment for applications based on a virtual machine is made for inefficient machines such as telephones. The aim is to convert JAVA in machine language that can be understood by Android.



Android Architecture

III. ARCHITECTURE DESIGN

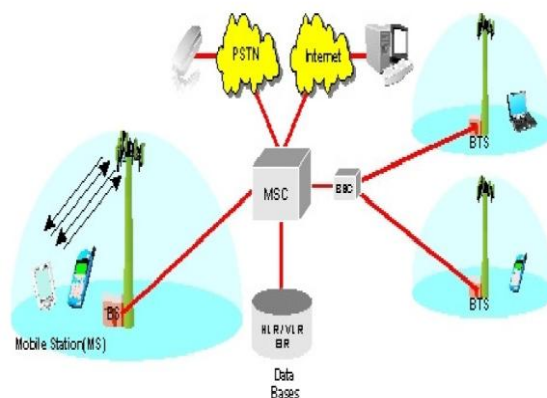
This application uses a mixed approach in architecture. Text messages, way2sms, email and speech recognition activity uses client-server architecture model and Bluetooth chat uses peer to peer architecture model.



Application DFD

III. ARCHITECTURE FOR SENDING TEXT MESSAGES

Text messaging (SMS-Short Message Service) is an important component of the phone which has the largest base of users among all other platforms. Once the message is sent from the cell phone, it moves towards the base station and then from the base station (BS) it goes to the MSC (Mobile Switching Centre). From there, it goes to the BTS (Base Transceiver Station) where it finds the exact location & finally goes to the respective mobile phone. This whole process carries of in a few seconds.

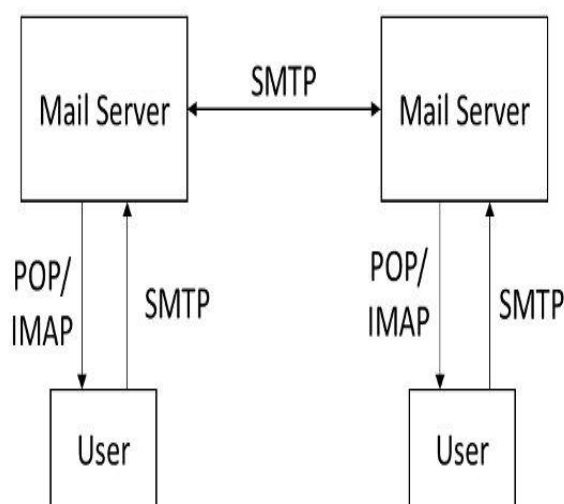


SMS Architecture

IV. ARCHITECTURE FOR SENDING E-MAIL MESSAGES

E-Mail (Electronic Mail) is a digital way to send a message to one or more persons. E-Mail was invented by Ray Tomlinson in year 1972. He used the '@' this to denote sending message form one computer to another. Sending & receiving of e-mails are facilitated by these components:

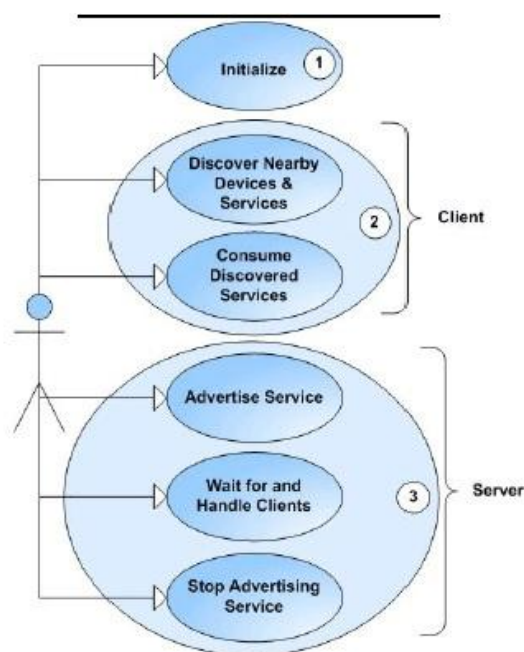
- An e-mail client
- An e-mail server (SMTP server)
- POP and IMAP servers.



E-Mail Architecture

V. ARCHITECTURE FOR BLUETOOTH CHATS

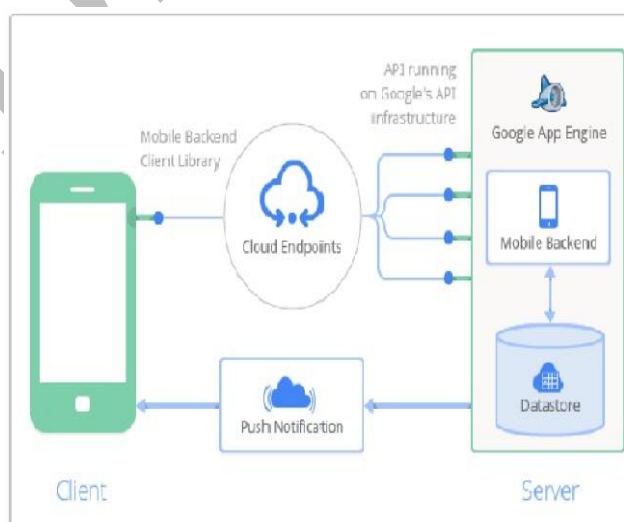
Bluetooth communication is based on a MAC (Media Access Control) . All the Bluetooth devices should always be paired before exchange of any data or message due to security concerns. All the Connected devices will be sharing a dedicated RFCOMM channel for the transition of data. And then, through the API (Application Program Interface), chatting/exchange of messages can be done easily & efficiently.



Bluetooth Architecture

VI. ARCHITECTURE FOR SPEECH RECOGNITION

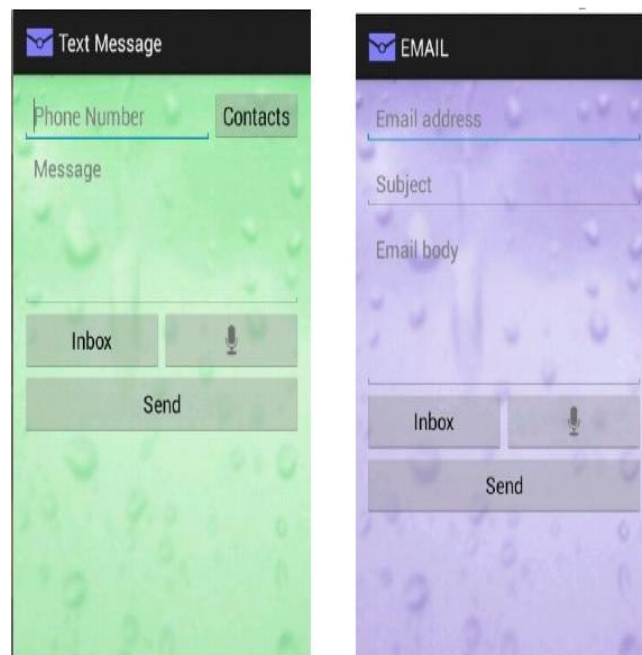
The speech recognition follows client server architecture. The app acts as a client, it gets the speech of the user and converts it to the desired format of text for sending it to server. The speech data is then sent to the Google server for further conversion. The conversion is then carried out on by the Google servers. The Servers then is replying back to its user in the form of the textual data.



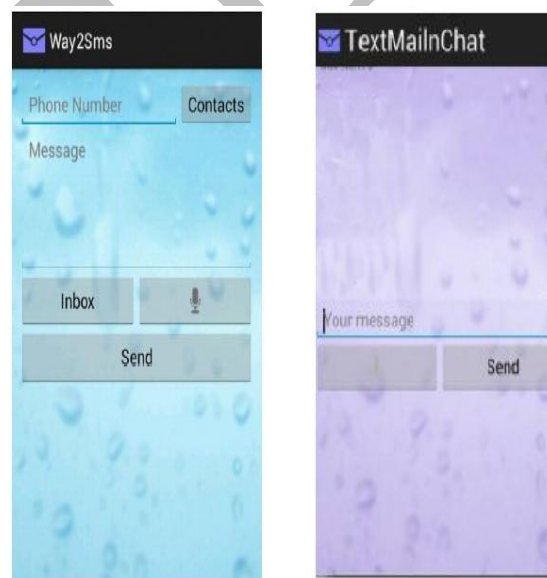
Speech Recognition Architecture

VII. IMPLEMENTATION

This research & design of chatting application includes text messaging, e-mail messaging, sending messages via Way2sms. Here are some of the snapshots of the application:

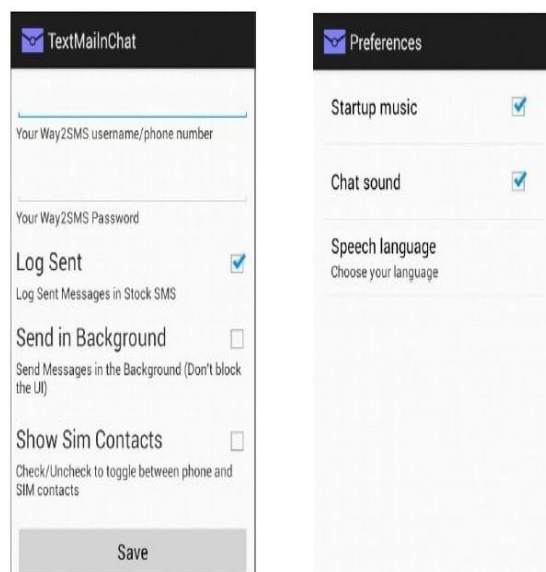


Text Messaging & E-Mail Interface of the App.



1 .Way2Sms text messaging

2. Bluetooth Chatting Interface of the App.



Way2sms Settings

CONCLUSION

Communication is pivotal for living and the incredible growth of digitization has made communication with much more ease, there are many other kinds of platforms, integrating all these into a single platform is going to provide an ease to the users. And, emails mails and text messages without the need of user typing will allow users to save some time. It allows forwarding of text messages from message inbox and email inbox very easily.

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