

Intelligent Voice Assistant using Android Platform

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Abstract – This paper is concentrating on the Android development based on the voice control (recognition, generate and analyse corresponding commands, intelligent responses automatically). The typical way of communication used by people in day to day life is by the speech. If the mobile phone can listen to the user for the request to handle the daily affairs, then give the right response, it will be convenient for users to communicate with their phone, and the mobile phone will be much smarter as a human assistant. The application includes Prediction functionality which will make recommendations based on the user behaviour.

Keywords-Intelligent System, Data Mining, Voice Assistant, Android.

I. INTRODUCTION

In recent past years, software programs were developed and run on the computer. Now a days smart phones are widely used by most of the people. This paper is inspired from a well-known application from Apple called Siri and Google voice Action. Siri application was released on the date when the iPhone4S was launched. Google Voice Action can be accessed in any android version above 4.4. for opening inbuilt Applications like gallery, settings, camera, messaging and etc. which uses Google's speech recognition engine.

The main goal of application is to take user's voice commands as an input to access smart phone instead of using it manually. As it combines most of the mobile phone services for daily use, it could be useful for getting a more convenient life and it will be helpful for those people who have disabilities for manual operations. This is also part of the reason why it has been chosen as the degree project. In this application user is able to access the services of smart phone with their voice command. User can easily send a message to the recipient available in their contact list as well as to the mobile number by voice command. In this Project physically disable person or the person having less knowledge about smart phone or how to access the smart phone can easily access the phone with their voice or speech command.[1]

II. LITERATURE SURVEY

There are different apps available on play store out of which we have studied two most related apps which are:

A. Siri(IOS)

Siri is a part of Apple Inc.'s IOS, watch OS and TV OS operating systems. Siri is a computer program that works intelligently as a personal assistant and knowledge navigator.



Fig. 1 Siri

The feature uses a natural language user interface to answer questions, make recommendations, and perform actions by delegating requests to a couple of Web services. The software, both in its original version and as an IOS feature, adapts to the user's individual language usage and individual searches (preferences) with continuing use, and returns results that are individualized.

A key feature of both the research and development behind the original Siri, Inc. application and behind its function as an IOS application, is its artificial intelligence programming aimed to allow it to adapt to the user's familiar language and individual search preferences with continuous use and returning results that are therefore individualized.[6][7]

B. Google Now

Google Now works on natural language user interface for question answering, making recommendations, and performing actions by making requests to a set of web services. Along with answering user-initiated queries, Google Now proactively delivers information to user that it predicts based on their search habits or frequent search history of the user. It was first introduced in Android 4.1 ("Jelly Bean"), which launched on July 9, 2012, and was first supported on the Galaxy Nexus Smartphone. [6][7]

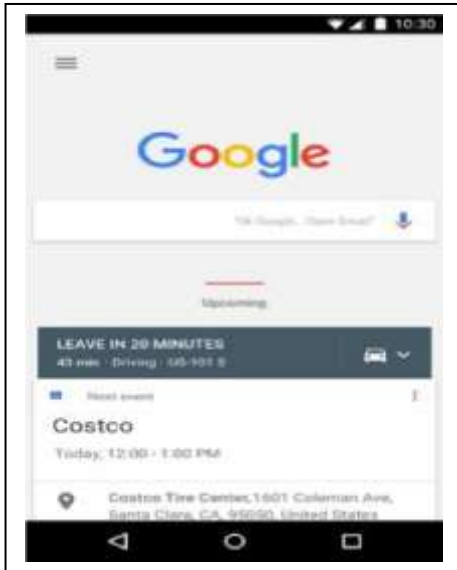


Fig. 1 Google Now

III. PROPOSED SYSTEM

Though there are many such apps as mentioned above, but none of them is able to make prediction based on user data. This proposed system allows the user to handle smart phones and Web services without using any buttons only by voice commands while driving or while doing any task. This application can also help the disabled people to use their smart phone applications and various task using voice commands.

The application will make prediction about the next probable action using the data taken from the frequent actions done through the application, with the help of machine learning.

The following figure shows the architecture of the proposed system.

STEP 1: The application will take user query in the form of voice command.

STEP 2: Query taken i.e. voice command will be processed and the most appropriate result or the task will be performed.

STEP 3: The activities and the task logs will be saved for the further analysis.

STEP 4: The saved data about the user activities throughout will be used for the predictive analysis.

STEP 5: The output generated from predictive analysis will be performed by the application.

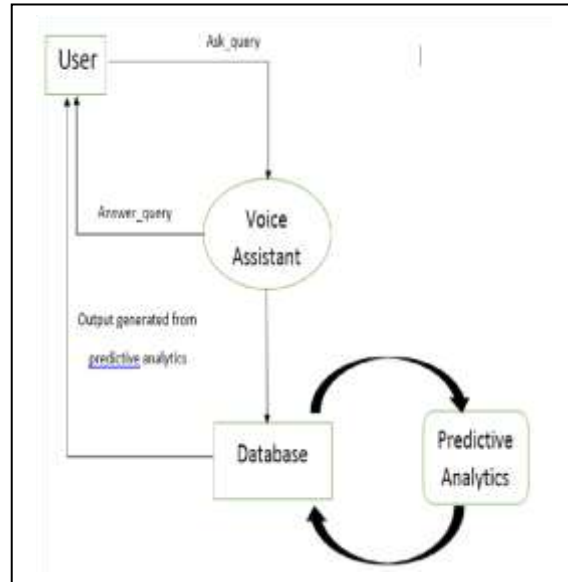


Fig. 3 Dataflow Diagram

IV. IMPLEMENTATION AND RESULT

The proposed system is implemented using JDK (Java Development Kit) version greater than 1.5, Android Development Tools (ADT) and SQLITE database on Android Smart Phone. The proposed system which can help users to handle mobile and Web services without using any buttons only by voice commands.[5]

- Message Service: users are able to send the SMS to a specific person in the contact list or to the new contact as well by giving a correct command which contains the messaging request keywords along with the recipient details, the message should be sent to the receiver immediately.[5]
- Calling Service: the application should permit the users to make a call to the person in the contact list or by providing mobile number of the person to whom user wants to call.[5]
- Assistive Touch: This feature added which allows the user to use voice commands irrespective to wherever they are navigating throughout the phone.
- Help: This feature enables user to store guardian contact and once the contact is stored the user can text the guardian by passing help command to the application. Help text is predefined.

- Google Search: the search will enable the user to search anything on Google. Thesearch will give result list back and displayed on the browser.



Fig. 4 Response to time query

The application can be installed on any mobile device and whenever asked for time it gives real time voice response of system time or network time on which system is currently working.

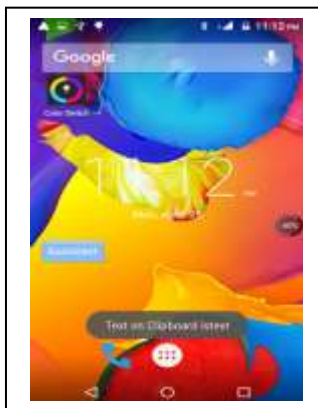


Fig. 5 Reading text from clipboard

Application can read any data that is stored in clipboard; it gives ease of use to user as user doesn't read the huge lines of information by himself.



Fig. 6 Response to day query

Application whenever asked by user about today's datespond with current date in regular format.

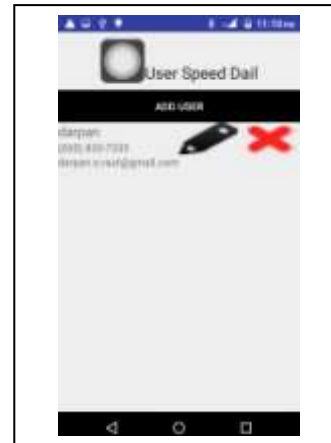


Fig. 7 Adding user for help action

User can add mobile number or email address of particular person for additional features like speed dialling or in case of emergency whenever help function will be called.

V. CONCLUSIONS

We have developed an application in which user can easily interact with the inbuilt applications through voice commands. We tried to develop application in such a way that it will be useful to physically disabled person with the help of voice command.

The application will also make prediction about the next probable action using the data taken from the frequent actions done through the application.

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