Artificial Intelligence based Personal Assistant

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ABSTRACT: The objective of this paper is to present an intelligent system that can be used to answer the questions asked to it based on android smart phone. It can be very useful to people who are depressed and alone as they can find a companion in it just like a human being. It can also be useful for other applications such as asking it to show a particular video or search something from Google for you. Remote operation is achieved by any smart-phone/Tablet etc., with Android OS, upon a GUI (Graphical User Interface) based touch screen operation. In order to achieve this, Android application act as transmitter, which sends commands to the receiver where LCD is connected as the output device.

KEYWORDS: Speech Recognition, Assistive Device, Artificial Intelligence, Android App, Internet, Bluetooth.

I. INTRODUCTION

The objective of this paper is to present an intelligent system that can be used to answer the questions asked to it based on Android Smart Phone. It can be very useful to people who are depressed and alone as they can find a companion in it just like a human being. It can also be useful for other applications such as

- A video can be played directly by asking in the application on YouTube without even opening the application of YouTube.
- A person can find the location of any place from the current location without even opening the application of Google maps.
- A person can stay updated about the latest happenings in the world. All the latest news are shown by just asking the application for the current news.
- A person can get recipe of any kind of food by asking it in the application.
- A person can dial a call by asking to call a particular person without dialling his number manually.
- It also answers the questions asked to it directly on the connected LCD. This can be used as a companion for lonely or elderly people who feel left out.

As the system uses Bluetooth module [3], operating over frequency of 2.4 GHz, it can link digital devices within a range of 10 m (expandable to 100 m, by increasing the transmitted power) at the speed of 1 Mbps. To operate this system, the Android Smart Phone must also be connected to an Internet Connection to access the questions based on Internet applications such as YouTube [8], Google news [9], Google maps [10] and others of that kind.

II. RELATED WORK

Siri [1] and Cortana [2] are some of the related works to this system. But unlike these Apps, the presented system also consists of hardware wearable wrist band which works as a personal assistant to show the answers of the questions asked to it. When a person needs a companion to talk to, he/she can talk to the wrist band and the wrist band

has the feature to reply back to the user. On the other side, when a person needs to surf about something, he/she can ask for it in the app by clicking on 'Talk to me' button provided in the App.
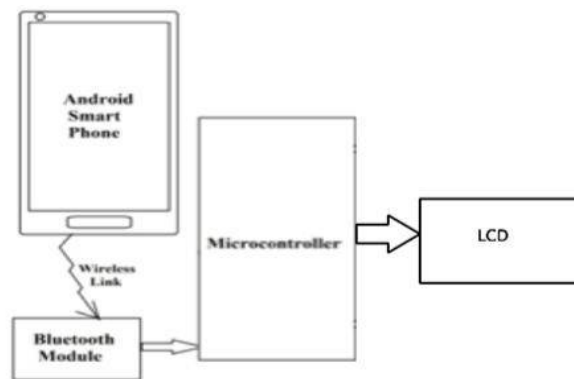
<div align="center">III.   DESIGN</div>

Figure 1: System Design

As shown in the system design, the Android Smart Phone must be connected to the microcontroller via wireless Bluetooth connection. Also the Smart Phone must have Internet connectivity to use various features of the App. The output device consists of the LCD (Liquid Crystal Display) which gets the commands from the microcontroller attached to it.
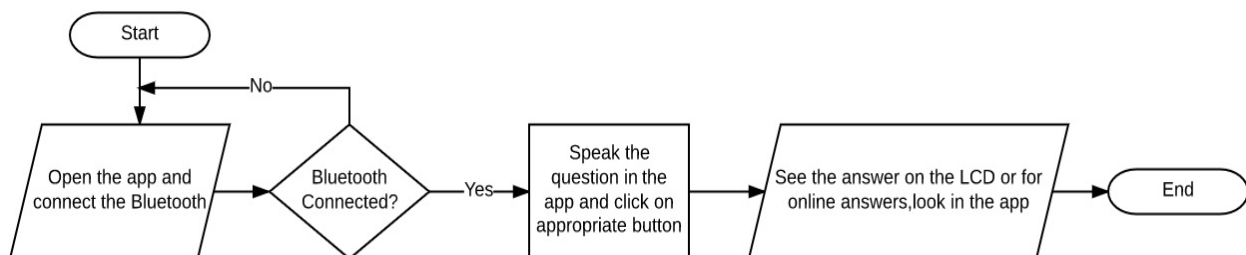

Figure 2: System Architecture

As shown in the system architecture, first of all, the user needs to open the Amigo – The Talking App and connect the smart phone's Bluetooth with the system's Bluetooth using 1234 as pin for connection. Once connected, the user needs to either speak the question after clicking 'Talk to me' Button [4] or the user can manually enter the text of the question in the textbox below the 'Talk to me' Button. Once that is done, if the user wants to talk to the system, he may click on ask me button below the question textbox. In case, if the user wants to look for the answer online, he is supposed to choose the appropriate button and click it for getting the answer. The user gets the various choices to choose from such as Videos, Locations, News and if none of the above, the user might click on the button which says

'Not sure? Click here'. In that case, the user gets to surf from the internet. In this way, the system works to decrease the efforts of the user by speaking directly in the app and also can find a companion in it just like a human being as the system answers the questions asked to it and talks to the user just like a buddy. The circuit of the assistive device consists of a LCD, potentiometer, Arduino Uno and a Bluetooth module (HC-05) as shown in the Figure 3.
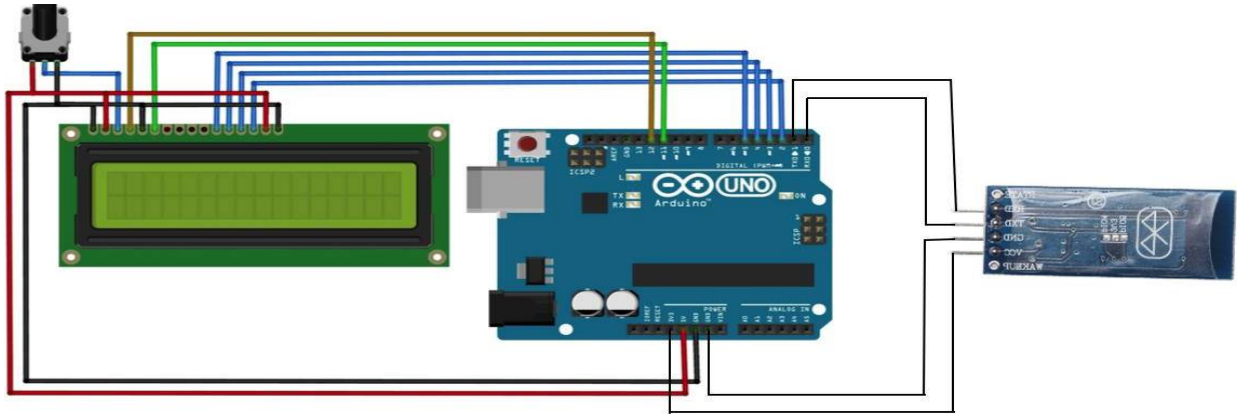

Figure 3: Circuit Diagram of the assistive device[5] [6] [7]
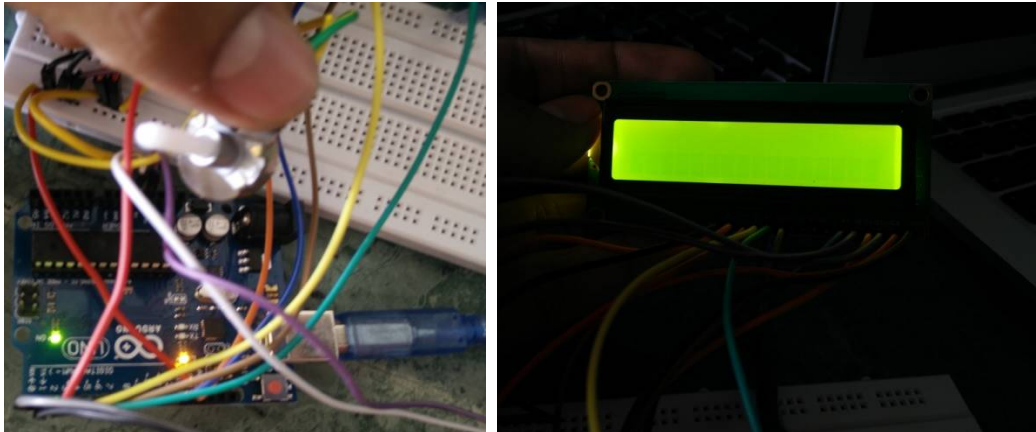
IV.   **RESULTS**
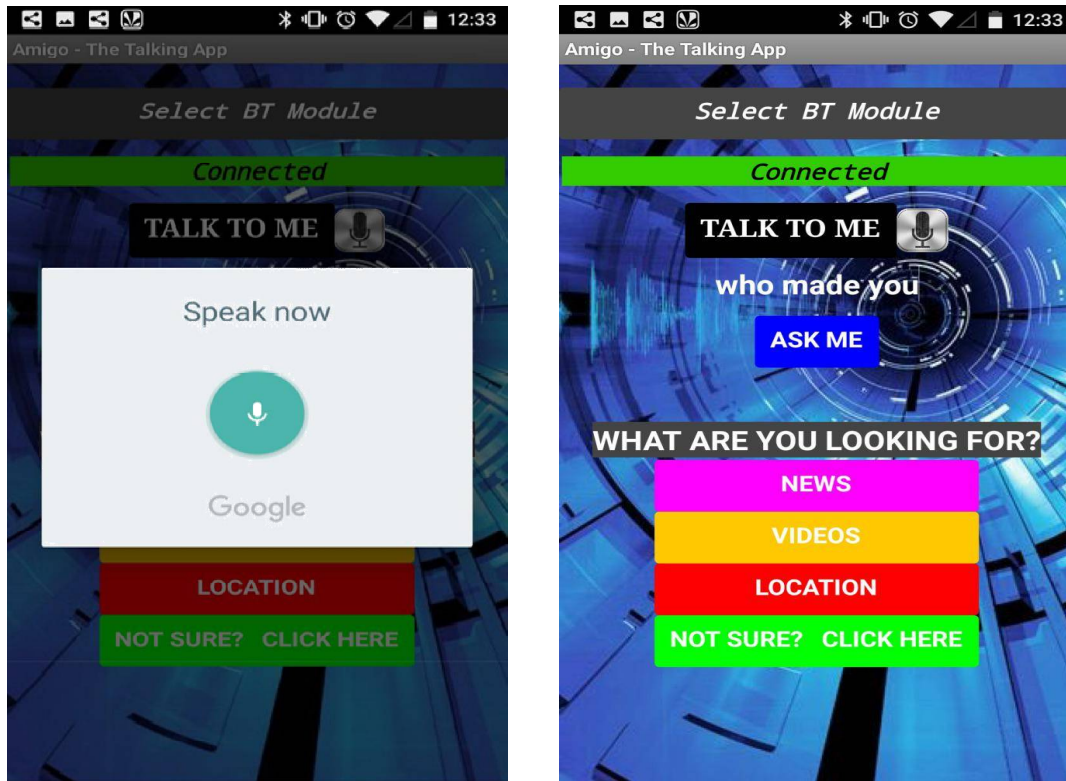

Figure 4: Model of Hardware

Figure 5: Screenshots of Working App

Figure 4 shows the hardware of assistive device and Figure 5 represents the screenshots of the working App. As shown above, when the user clicks on 'Talk to me' button, the windows saying 'Speak now' pops up[4]. The user needs to speak while the window catches the words of the user. Once the words are detected, the spoken words are shown in the app in the form of text and the answer for the asked question can be seen on the hardware in the LCD. If the user needs an answer from the Internet, he might use the buttons given for various purposes such as looking for news, videos, location etc.

V. CONCLUSION

We have designed and implemented an intelligent system which can talk to us just like a human being. Our design successfully answered all the questions asked to it. The answers which required to be answered on Internet were also correctly answered. The only requirement of this system is an active Internet and Bluetooth Connectivity. It works perfectly well in the above said condition.

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