

Voice Command Based TV Remote Control Android Application

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Abstract

A system is designed which can control the TV with the help of voice commands. This system is most suitable for elderly people who find difficulties in controlling the TV by pressing multiple buttons on its remote. Most of the existing systems either require a smart TV or some large complicated handheld devices, but the proposed system requires an Android device and an Arduino. All you require to do is, download this Application from Google Play Store, connect the Arduino to TV and start using. As the system is based on Bluetooth, it is not even mandatory to stay connected to internet

Keywords: *Voice Command, Internet of Things (IOT), Android Application*

I. INTRODUCTION

The Internet of Things (IOT) can be described as connecting the objects like mobile-phones, TVs, sensors and actuators to the Internet where the devices are intelligently linked together enabling new forms of communication between things and people, and between things themselves. Building IOT has advanced significantly in the last few of years since it has added a new dimension to the world

of information and communication technologies. Also, in this 21st century, there has been a remarkable change in the field of Room Automation due to the introduction of improved voice recognition & wireless technologies. These systems are supposed to be implemented in the existing infrastructure of any home without any kind of changes in the existing connections. Thus here a system is designed which can control the TV with

the help of voice commands which is most suitable for elderly people who find difficulties in controlling the TV by pressing multiple buttons on its remote.

II. PROPOSEDSYSTEM

In the market, we do come across many TV remote control applications but their limitation is that no mobile application can control the TV through voice commands. So, this type of mobile applications can be replaced by application which we are developing.

III. SYSTEM ARCHITECTURE

When the user speaks into the mobile application then processing is done on the user's command and it is sent forward to

the Arduino device through the Bluetooth. Then Arduino passes these commands further to the set top box through the Infrared. **See Figure: 1**

IV. IMPLEMENTATION

Implementation is the stage of the project when the theoretical design is turned out into a working system. So it is the most critical stage in achieving a successful new system and in giving the user, confidence that the new system will work and be effective. The implementation stage involves careful planning, investigation of the existing system and its constraints on implementation, designing of methods to achieve changeover and evaluation of changeover methods.

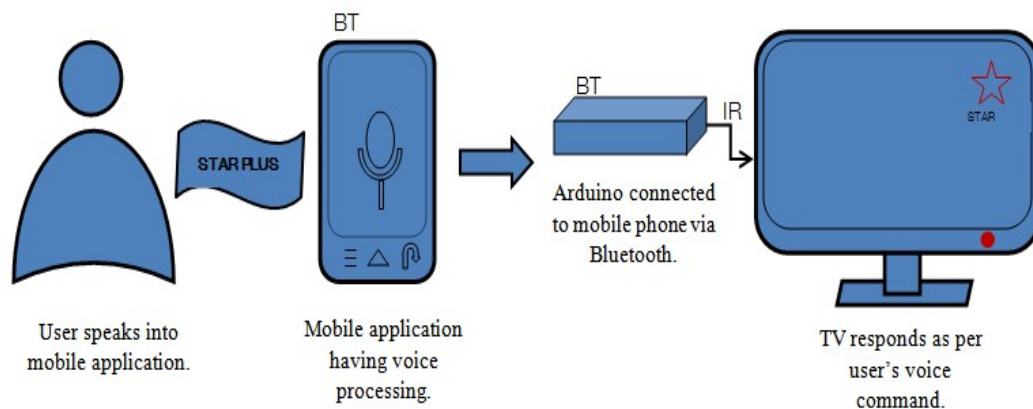


Fig. System Architecture

V. MODULES

1) Designing the android application-

In this module, we are going to design the android application which takes the voice commands. The voice commands are taken

through the Google speech to text API.

And that commands are passed to the Arduino UNO through the Bluetooth.

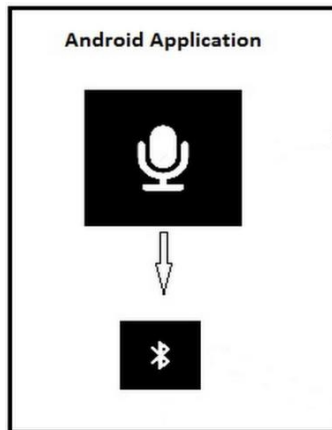


Fig. Designing the android application

2) Connectivity between Android Application and Arduino UNO-

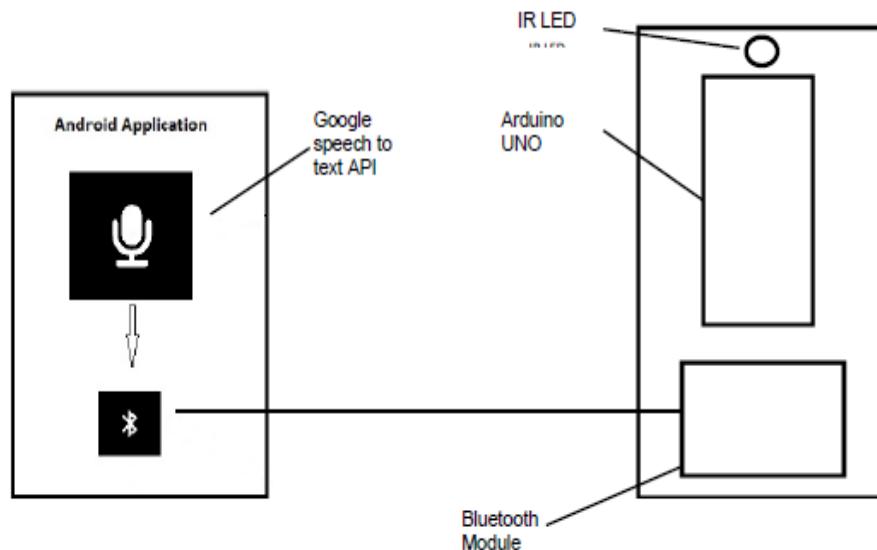


Fig. Connectivity between Android Application and Arduino UNO

In this module, we will need the Arduino UNO, Bluetooth module, IR LED and IR receiver. The Bluetooth module IR LED and IR receiver are placed on the Arduino. The Android App communicates with the Arduino UNO through the Bluetooth and IR LED and IR receiver is used for communication between Arduino UNO and the Set top box.

3) Connectivity between Arduino Uno and Set top Box –

In this module, the connectivity between the Arduino UNO and the set top box is shown. As shown in module 2 the Bluetooth module, IR LED and IR receiver is placed on the Arduino UNO. When the Arduino receives the command from the app through the Bluetooth, the Arduino passes it forward to the set top box through the Infrared.

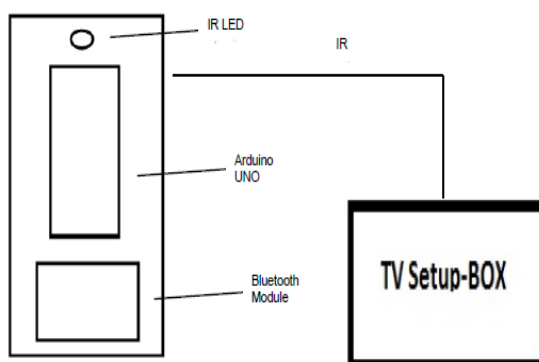


Fig. Connectivity between Arduino Uno and Set top Box

VII.CONCLUSION

This system is most suitable for elderly people who find difficulties in controlling the TV by pressing the multiple buttons on its remote.

On completion of this project, one will be able to control regular TV with the help of voice commands via android app.

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