AN INTRUMENT TO IDENTIFY BUS NAMES FOR VISUALLY IMPAIRED PERSON

[1]Murugeshwari B, [2]Monika Dharshni D, [3]Jaya S P, [4]Kavi Kumar V, [5]Mr Srinivasa Perumal M.

[1,2,3,4]UG students, [5]Assistant Professor.

[1,2,3,4,5] Department of Electronics and Communication Engineering.

SNS College of Technology.
Coimbatore, India.

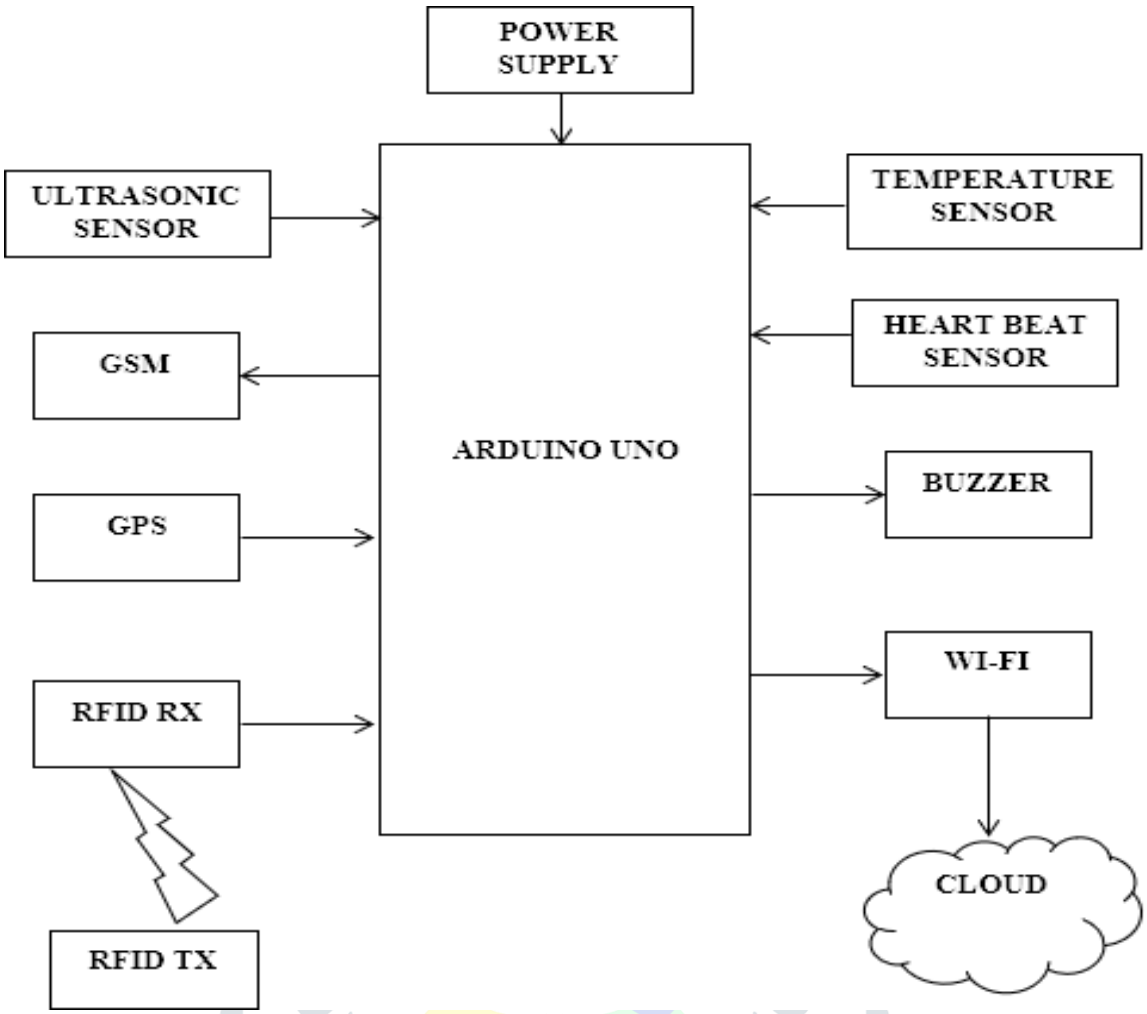
***Abstract*:** In today's world, differently able person were facing more struggles to lead their day to day life. In order to make their life easier, our project "A Nouvelle Instrument to Identify Bus Names for Visually Impaired Persons" has been proposed. With the help of this project blinds can easily identify which bus is approaching towards bus stop. This can be done by placing RF Transceiver on all the busses and placing another RF receiver on the walking stick. Which will eventually get the data from the RF placed on the bus and intimates the bus name to the blinds through voice message and hence our project forms an another eye to visually impaired persons to catch the appropriate bus and get down from the bus on the appropriate bus stop safely.

Keywords: IoT, RF Transceiver, PIC Microcontroller, Trolley, Obstacle avoiding.

I. INTRODUCTION

The device consists of transmitter section and the receiver section. When the blind person is in the bus stop, he/she will get the information of what bus has reached the bus stop through the blind stick. This message will be given in a voice note. In the bus Section we have used PIC16F887. Microcontroller unit as a brain of the transmitter block. The RF Transmitter attached in the bus will transmits the appropriate bus name to the Blind walking stick. Here we have adopted four channels for digital RF Transmitter to identify the bus names. The level shifter used in this project is to implement conversion of voltage ranges between Microcontroller and RF Transmitter. To change the bus name we have to select the different buttons placed in the Bus Section. Once the bus approaches the bus stop, the visually impaired person can identify the bus name by the data send by the bus. Hence by decoding the data received by the bus we can intimate the blind through voice signal regarding the bus name.

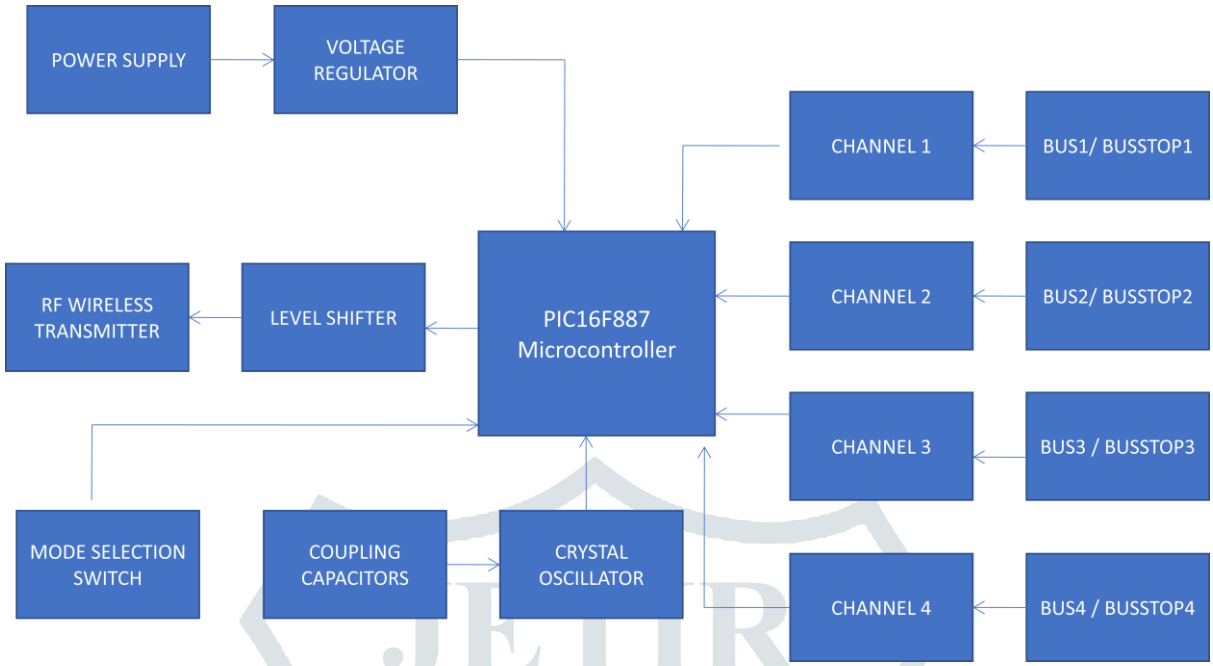
II. EXISTING SYSTEM



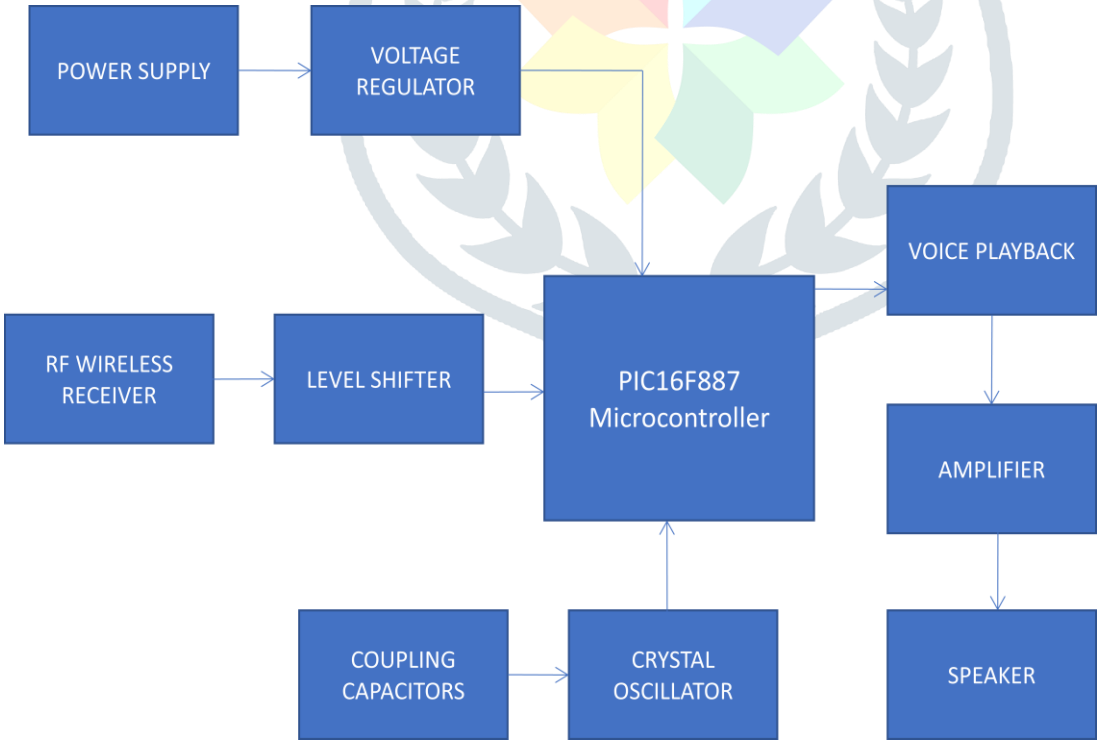
The existing system has Arduino UNO as the controller. So, the input and output units are interfaced with the Arduino controller. The ultrasonic sensor are in the form of sound through buzzer. The GPS an GSM are interfaced with Arduino controller through transmitter and receiver methodology. The function of the GPs to locate and the purpose of GSM is to share the location to the particular mobile number. The heartbeat sensor and temperature sensor are also interfaced to check the health conditions. By pressing the emergency button in the walking stick the location, the heartbeat rate, and the temperature are uploaded to the cloud. The water sensor also interfaced with Arduino controller so if there is any water in front of water and the water is interfaced with water sensor in the bottom of the walking stick, there is a buzzer sound to alert the blind person. The WIFI module are interfaced with the Arduino controller used for the internet connection for locating the location using GPS. Finally, there is RF receiver and transmitter that are mainly used to find the walking stick which works as wireless.

III. PROPOSED SYSTEM

TRANSMITTER SECTION



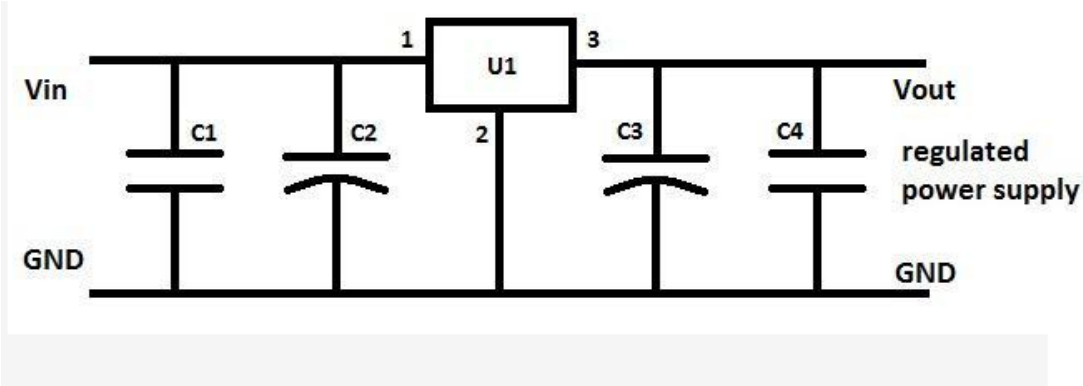
RECEIVER SECTION



The proposed system has two sections such as transmitter section and receiver section. In the bus Section we have used PIC16F887 Microcontroller unit as a brain of the transmitter block. The RF Transmitter attached in the bus will transmits the appropriate bus name to the Blind walking stick. Here we have adopted four channels for digital RF Transmitter to identify the bus names. The level shifter used in this project is to implement conversion of voltage ranges between Microcontroller and RF Transmitter. To change the bus name we have to select the different buttons placed in the Bus Section. Once the bus approaches the bus stop, the visually impaired person can identify the bus name by the data send by the bus. Hence by decoding the data received by the bus we can intimate the blind through voice signal regarding the bus name.

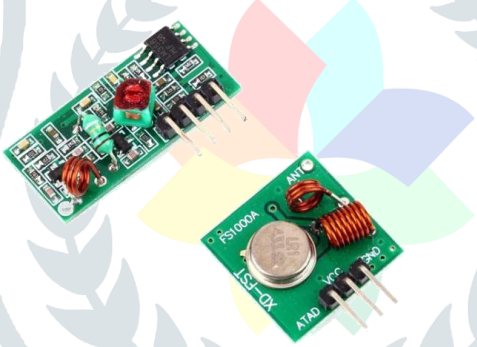
IV. VOLTAGE REGULATOR

The regulated power supply is more essential for many electronic devices because of the semiconductor material inbuilt in them will have a fixed rate of current as well as voltage. There is a chance that the device may get destroyed if there is any changes from the actual rate. The input AC power supply will get converted into constant DC current by this circuit. With the help of a voltage regulator DC, the unregulated output will be assigned to a constant voltage. The circuit is built up of linear voltage regulator 7805 in addition with capacitors and resistors along with bridge rectifier made up of diodes. From sending an unchanging voltage supply the output reaches uninterrupted to the device, the diodes in addition with capacitors handle elevated efficient signal conveyor.



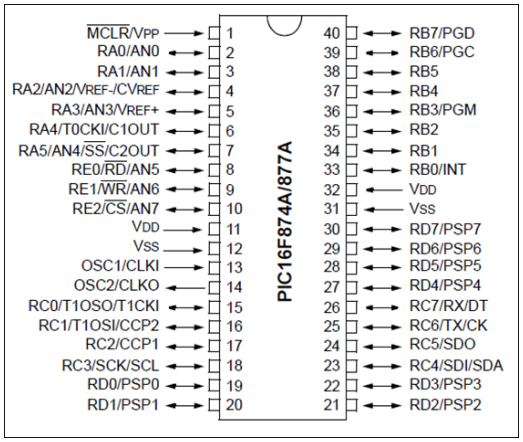
V. RF TRANSMITTER AND RECEIVER

The RF transmitter module (HT12E) will be able to send a radio wave and modulating that wave to carry data. An RF receiver module (HT12D) can receive the modulated RF signal and demodulate it. This wireless communication is carried through Radio Frequency (RF) communication.

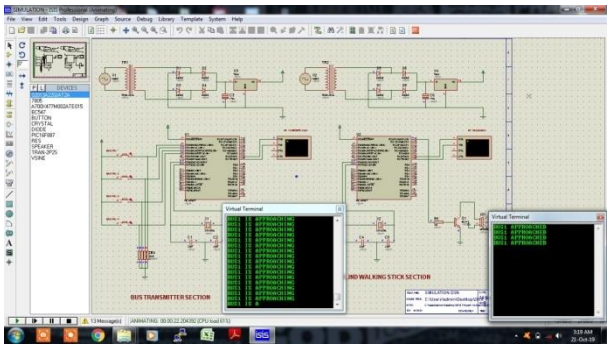
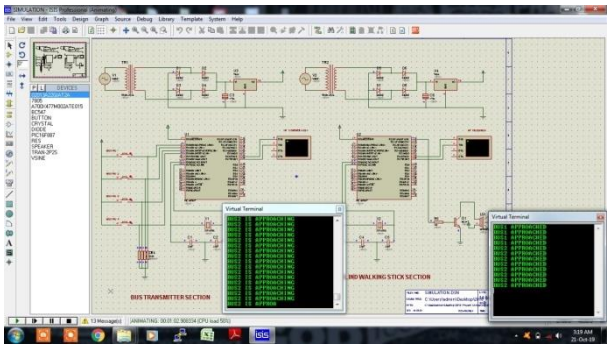
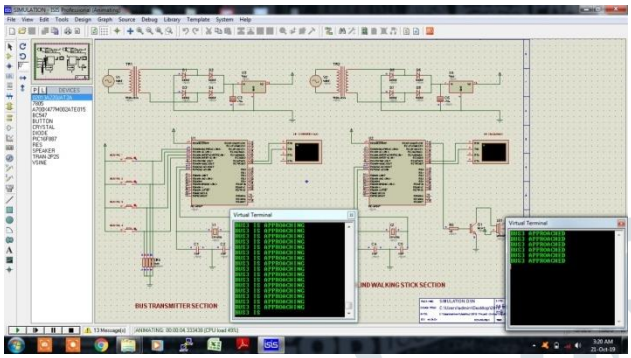
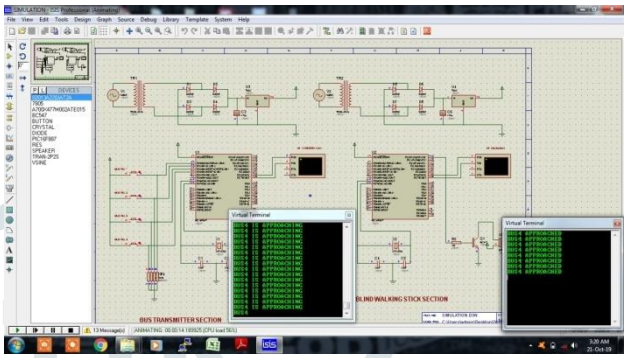


VI. PIC MICROCONTROLLER

This powerful still easy-to-program CMOS FLASH-based 8-bit microcontroller packs Microchip's powerful PIC® design within Associate in Nursing forty package and it's upwards comparable with the PIC16C5X, PIC12CXXX and PIC16C7X devices. The PIC16F877A has 256 bytes of Electronically erasable programable read only memory knowledge memory, self programming, an ICD, a pair of Comparators, eight channels of 10-bit Analog-to-Digital (A/D) device,A couple of capture/compare/PWM capabilities, the synchronous port is able to be configured as three-cord Serial Peripheral Interface or the 2-cord Inter-Integrated Circuit bus and an Universal Asynchronous Receiver Transmitter (USART).



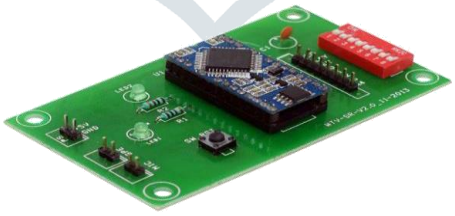
VII. 5x1 KEYPAD

A miniature keyboard or set of buttons for operating a transportable digital tool, cellphone, or different gadget it's also feasible to apply severa extra modules related to the development gadget via the I/O port connectors. Some of these additional modules can function as stand-alone devices without being connected to the microcontroller.

VIII. VOICE RECORD/PLAY BACK MODULE

WTV-SR is one of the participants of recording serial merchandise. WTV-SR module can report as well as fixed voice playback, recording content material uploaded and a selection of manipulate modes can be selected. With the master chip and plug-in SPI-FLASH, it has a incredible gain in the period time of recording. And fee performance.



IX. CONCLUSION

The design and implementation of this instrument that helps in identifying the bus names will be very useull for the visually impaired persons. From this model the person will be able to know the bus names through voice playback which will be usefull for them to go from one place to another. These many days it was a difficult task for them to travel from one place to another through bus. This instrument will help them to overcome this problem.

X. RESULT

XI. FUTURE WORK

The future work includes the names of the bus stops fed into the instrument so that after getting into the bus the person will be able to know the place which is coming next in order to get down in desired stopping. This will reduce the burden of the visually impaired person for travelling from one place to another.

XII. REFERENCES

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