BLIND PEOPLE PERSONAL ASSISTANT

UMESH.V [1] , SUSIRAGUL.R[2], SUNIL KUMAR.P[3], SYED NASRUDDIN.S[4],

DR S.R.PREETHI A.P(O.G)[5]

[1]Umesh.V , Dept of ECE,SRM Valliammai Engineering college,Tamilnadu,India

[2]Susiragul.R, Dept of ECE,SRM Valliammai Engineering college,Tamilnadu,India

[3]Sunil kumar.P, Dept of ECE,SRM Valliammai Engineering college,Tamilnadu,India

[4]Syed nasruddin.S, Dept of ECE,SRM Valliammai Engineering college,Tamilnadu,India

[5]Dr S.R.Preethi ME.,PHD.(A.P) , Dept of ECE,SRM Valliammai Engineering college,Tamilnadu,India

ABSTRACT

This paper presents a blind assistant system using RFID technology that aims to ease the travel and movement of visually challenged people, helping visually impaired or blind people who are dependent on other people to guide them. Nowadays, they are facing some difficulties while travelling.This paper presents a low-cost, easy to build and use system for blind people to identify the place where they stand and guide them in identifying shop ,streets and current location.The voice note is now linked to the place and shops, and once the RFID tag is scanned, the voice note is played, making the item easily recognizable. These RFID devices can be used and fixed in different places.The main purpose is to provide a blind assistant system for blind people by assigning different tags to different areas, such as streets, shops, etc., with the help of Radio Frequency Identification (RFID) technology, so they get alerted about the current location of those crossing them. The main aim of this project focuses on designing and developing a system capable of sensing and signalling the areas around visually impaired people and guiding them in making their journey comfort.This system is used to help the visually impaired have access to the streets and locations using RFID.An RFID tag is given to the blind person, and their RFID reader device is placed in the streets. We used readers with a small range in this system. RFID Readers with a high range can be used for better efficiency of the system in real-time applications.In future, it made in a single chip or device, such as a watch, etc., so that it will be useful in carrying the device easily by visually challenged people. This system shall be implemented as a device or chip which can be fixed to the blind stick, which will be even more helpful and easier in carrying the system.

KEYWORD:- *Arduino UNO,ISD1820 record and playback module,RFID reader module,RFID tags,speaker,power supply.*

I INTRODUCTION

Nowadays, one of the most difficult tasks for visually challenged people is travelling from one place to another. The blind or visually impaired have difficulty accessing information about transportation, streets, shops, terminals, vehicles, schedules, or maps in most physical world. Hence, there is a need to make their lives more easy by introducing a system that helps them travel from one place to another independently and freely like ordinary people, without anyone's help.The RFID system uses tags, through which information embedded

on the tags is read by RFID readers. The proposed system eliminates the need for help, on whom the blind people rely for guidance to board the required location details and the current location details. An RFID blind assistant system is a system that uses RFID readers and RFID tags to sense and announce locations to the visually challenged. As each RFID tag has separate UIDs, they can be placed in streets, shops, bus stops, etc. so that when they cross these locations, they get alerted through a voice note and indicate wherever they move on. Through this, they can identify where they are without the help of others. They can travel independently and identify places wherever they go. The system is capable of sensing and signalling the areas around visually challenged people and guiding them to make their journey easy.

II EXISTING SYSTEM

- The existing system is the bus stop system.
- In the bus stop system, it senses the bus and announces the bus details.

ADVANTAGES

- It helps blind people to be independent.
- Ease for the travelling of blind people from one place to another place.
- It is easy to handle.

III PROPOSED SYSTEM

This blind people personal assistant consists of an RFID reader, an Arduino UNO, an ISD 1820 voice recording and playback module, and a power supply. The RFID reader detects the RFID tag placed at the location and gives input to the Arduino UNO in the system.The Arduino processes the received input from the RFID reader and, as per the program, the Arduino UNO will trigger the voice playback module. The audio saved in the ISD1820 module plays through the speaker. As each RFID tag has a different UID, they can be placed at different locations so that the visually challenged people get alerted through the system on crossing them.

IV BLOCK DIAGRAM

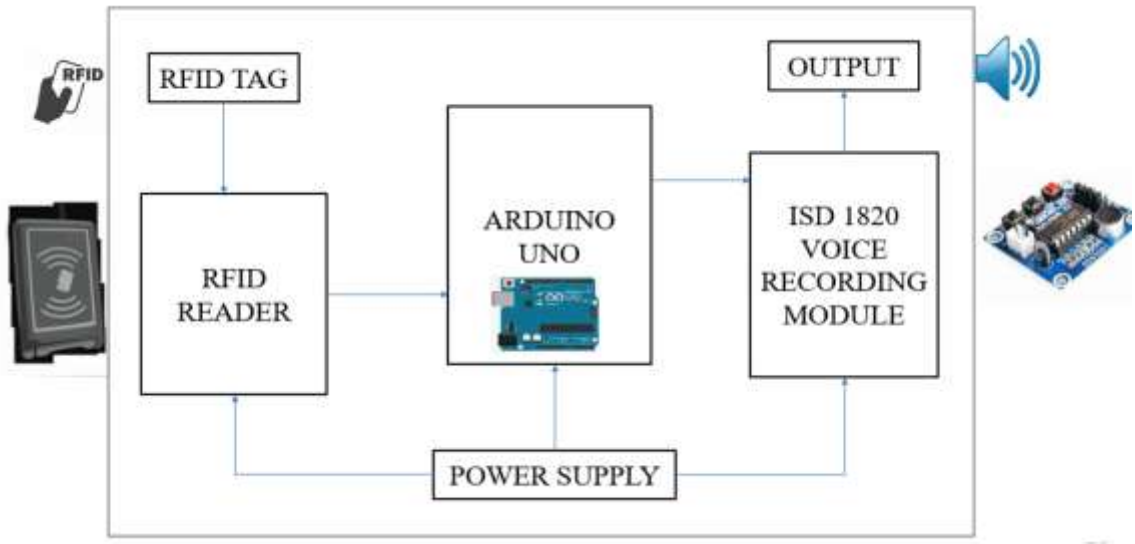

Fig 1 -: BLOCK DIAGRAM

BLOCK DIAGRAM DESCRIPTION

This blind people personal assistant power consists of an RFID reader, an Arduino UNO, an ISD 1820 voice recording and playback module, and a power supply. The RFID reader, which detects the RFID tag in the location and gives input to the Arduino UNO in the system, The Arduino processes the received input from the RFID reader and, according to the programme stored in the Arduino UNO, it will trigger the voice recording and playback module and play the audio saved in it through the speaker in the ISD 1820 voice recording module to the respected RFID tag fixed in the current location.

V SYSTEM DESIGN AND HARDWARE DESCRIPTION

CIRCUIT DIAGRAM

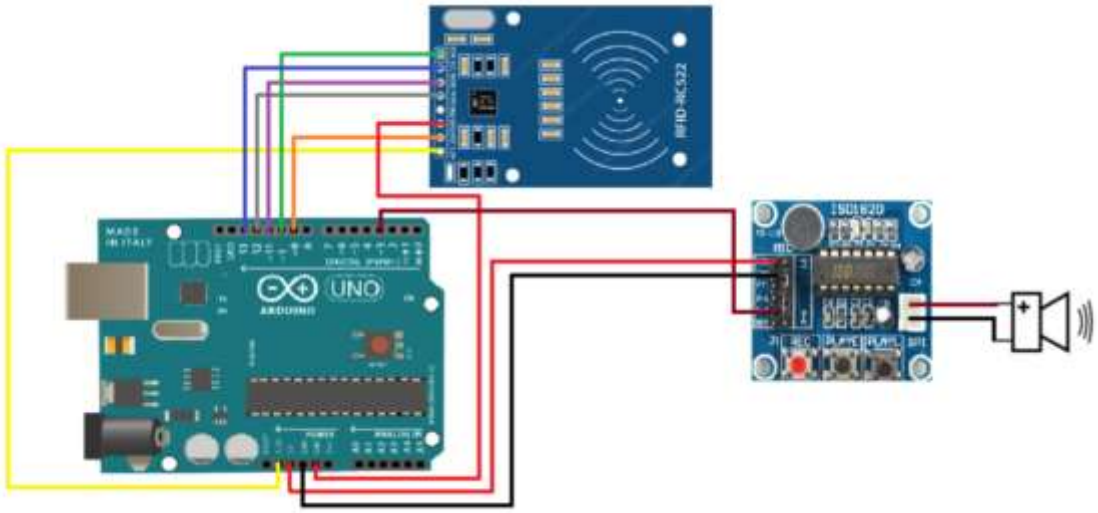

Fig:-2 CIRCUIT DIAGRAM

CIRCUIT DIAGRAM DESCRIPTION

RFID RC522 PIN	ARDUINO UNO PIN
SDA	10
SCK	13
MOSI	11
MISO	12
IRQ	UNUSED
GND	GND
RST	9
3.3V	3.3V

TABLE:-1 PIN CONNECTIONS

The assignment mainly works on the norm of interruption . This system consist of RFID reader, Arduino UNO R3,ISD 1820 Voice recording module and power supply system. The Arduuino UNO is connected to RFID reader through the digital pins and power pins and and power pin is connected to the recording modules power supply system . run the program and upload the program to the ARDUINO UNO using the cable . If RFID tag will deduct The input signal to the Arduino UNO and it sent the signal to the corresponding recording module and the output voice is played through the speaker.

VI FLOW CHART FOR OVER ALL DESIGN OF SYSTEM

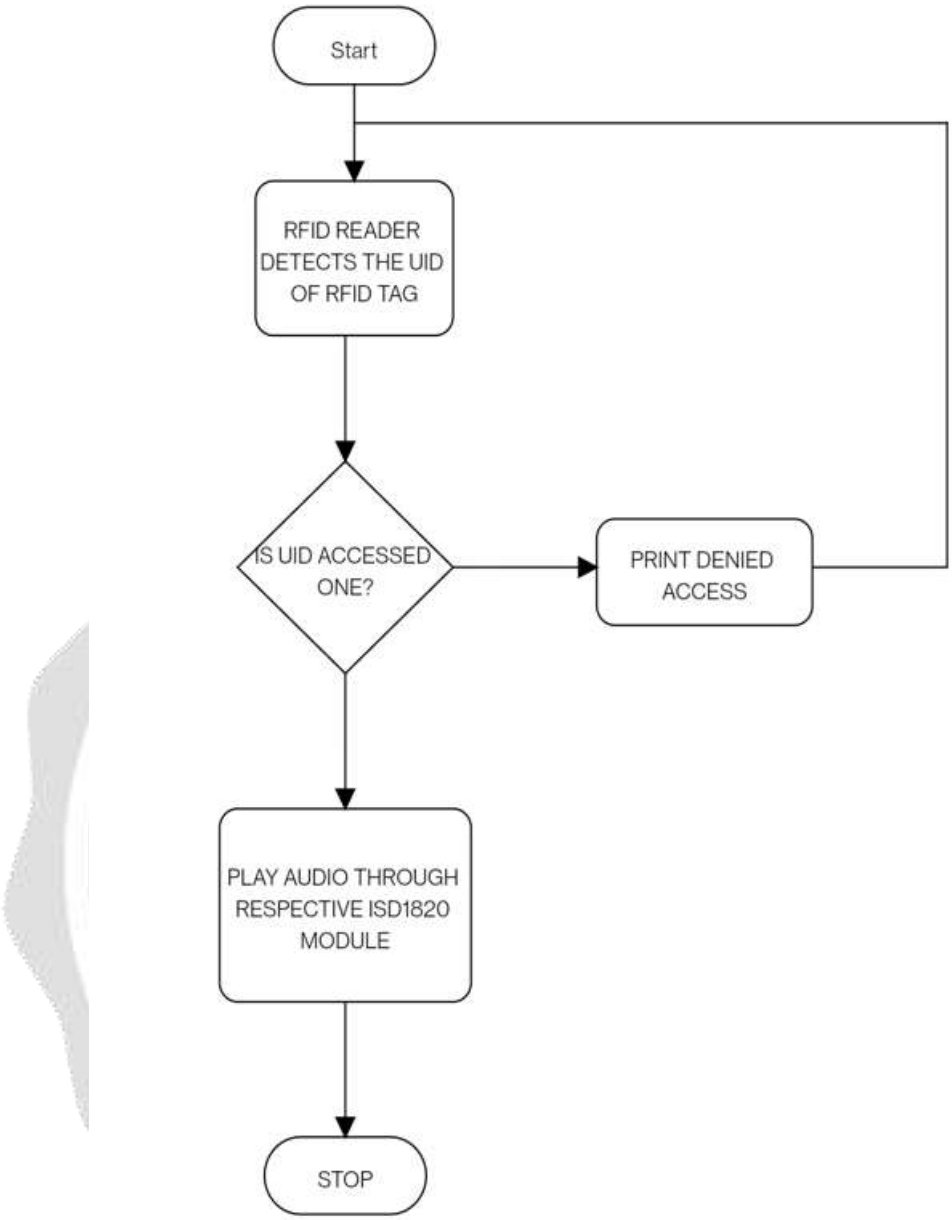

FIG:-3 FLOW CHART

FLOW CHART DESCRIPTION

- The RFID Reader continuously senses whether RFID Tags are present.
- If RFID Tag is present,the UID of the RFID Tag is read. If UID is not accessed the system print “Denied Access”.
- If the UID is accessed, the system ,the system plays audio through respective ISD1820 module.
- Thus the RFID blind assistant system works and announces them the locations through RFID technology.

VII HARDWARE IMPLEMENTATION

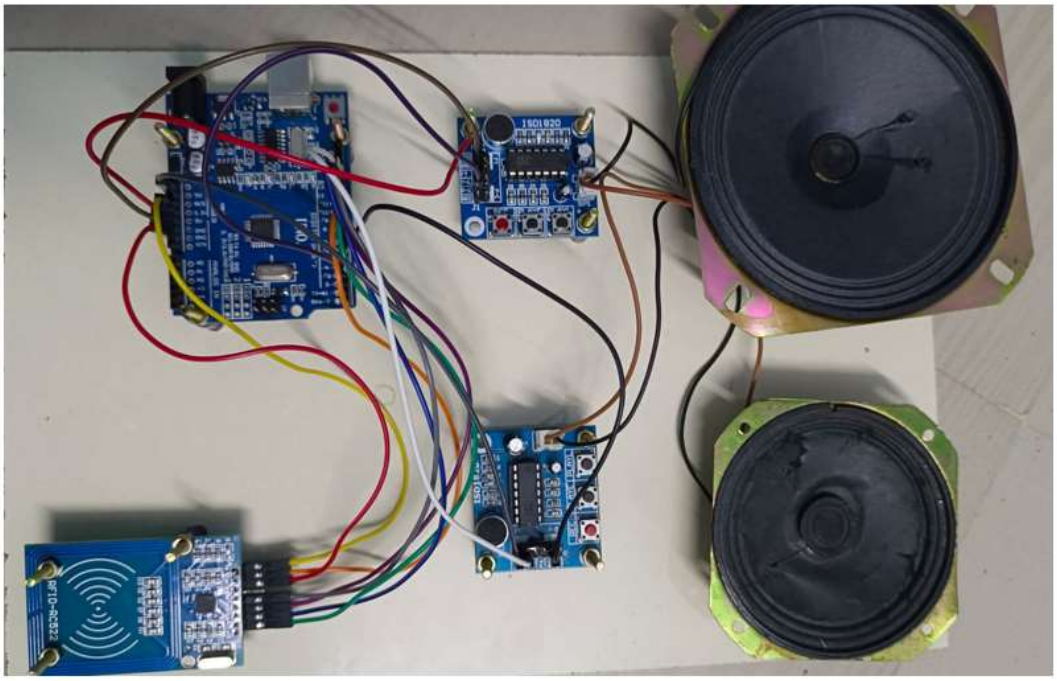

FIG:-4 HARDWARE CONNECTION(REAL TIME)

VIII APPLICATIONS

- The blind people's personal assistant system can be used to make the journey easy.
- The system will allow visually impaired people to be more independent than they were previously.

- The system is capable of sensing and signalling the areas around visually challenged people and guiding them in making their journey easy.

IX CONCLUSION.

since there are many blind people in the world. In this paper, we described a blind person's personal assistant using RFID. The proposed system is simple and provides a convenient service for all visually impaired people; blind people's personal assistant devices for the visually impaired will be very useful not only for the visually impaired but also for those who are unfamiliar with reading location details or are new to that location. Through this system, the blind can easily travel the journey from one place to another place without any help.

X FUTURE SCOPE OF THE PROJECT

- We used readers with a small range in this system. RFID Readers with a high range can be used for better efficiency of the system in real-time applications.

- In future, it made in a single chip or device, such as a watch, etc., so that it will be useful in carrying the device easily by visually challenged people.

- This system shall be implemented as a device or chip which can be fixed to the blind stick, which will be even more helpful and easier in carrying the system.

XI APPLICATION

- The blind people's personal assistant system can be used to ease the travel of blind people from one place to another.
- With the system's assistance, visually impaired people should be able to travel independently.

XII ACKNOWLEDGMENT

I would like to express my gratitude to my management, who gave me the wonderful opportunity to do this project on the topic of blind people's personal assistants, which also helped me in doing a lot of research and I came to know about so many things. I am really grateful to them. We acknowledge the support and guidance provided by our internal guide, Dr.S.R. Preethi.A.P (O.G). Without support, guidance and encouragement, this project could not be done. We also thank our Head of the Department for providing the opportunity to do this project, and we also thank other members who held onto our project. We express our sincere thanks to all.

XIII REFERANCE

[1] Sulaiman Khan, Shah Nazir, Habib Ullah Khan, “Analysis of Navigation assistant for blind and visually impaired people”, College of Business and Economics, Doha,2021.

[2] "Bus identification device for blind people using Arduino," CVR Journal of Science and Technology, Volume 16, 2019 Supriya, S, Smita.

[3] Jalila Al Kalbani, et.al "Bus Detection System for Blind People using RFID" Proceedings of the 8th IEEE GCC Conference and Exhibition, Muscat, Oman, 1-4 February, 2015.