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IoT Ecosystem-based Human Health and Attendance Online Device

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Abstract-HUMAN HEALTH AND ATTENDANCE WITH IOT ECOSYSTEM is a Module that provides an attendance with human detection with health monitoring and transportation Entry Pass. Three Modules are fitted so that they can detect humans faster with their attendance done. Health monitoring is done based on an Application with Admin and Staff Module whereas with the modules it will also have an App that will easily be manageable to see in the System.

Keywords-IoT, RFID, ARDUINO.

I. INTRODUCTION

The objective of my research paper is to find affordable equipment that will comfort human organizations. Firstly, it will provide Human health and attendance detecting system with some pairs of Arduino tools. It will first detect humans with specified objects with human humidity and check human health according to that humidity detection will mark the attendance.

II. LITERATURE REVIEW

Comparisons of other Technologies with a higher quality of requirement equipment's need.

1.[1] Sarmad Hameeda, et al.3 presented their paper in a journal named Social and Behavioral Sciences 195 (2015) 2889 – 2895 and the name of the paper is "Radio Frequency Identification (RFID) Based on Attendance & Assessment System with Wireless Database Records".[1] This paper focuses on RFID technology which uses automatic wireless identification with the help of electronic passes and active tags for suitable readers. The model uses an application of RFID and wireless data for recorded entries into the system. It reduces time consumption in manual attendance as well as maintains the record of entries that can be used for statistical purposes like attendance score allocation and exit administrative tasks.

2.[2] Yun, Jaeseok& Lee, Sang-Shin. (2014). Human Movement Detection and Identification Using Pyroelectric Infrared Sensors. Sensors (Basel, Switzerland). 14. 8057-81. 10.3390/s140508057 [2]. This paper focuses on human detection and identification of the direction and speed of movement, body shape, and gait. In this paper, identification using a set of PIR sensors [2]

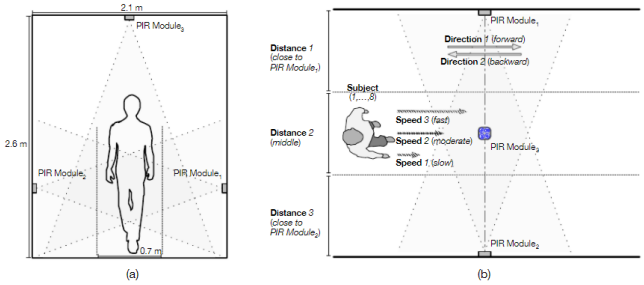


Fig-1: Block diagram [1]

Fig-2: Block diagram [21

3.[3].B M, Madhu &Kanagotagi, Kavya &Devansh, Devansh. (2017). I based Automatic Attendance Management System. 83-10.1109/CTCEEC.2017.8455099.This paper focuses on in recent d Growth in the fields of industrial technologies, health, agricult transportation, etc. Also, the Internet of Things is blooming parallelly.

Management and monitoring problems. Attendance Management System is that the implementation of the web of Things through Raspberry Pi 3 and RFID Technology to scale back the time consumed by the normal system of recording daily attendance in schools and institutions. So, everything here in turn gets automated. An attempt has also been made to develop an Android application(app) and help the scholars to look at their attendance anywhere, anytime.

4.[4].Arulogun O. T., Olatunbosun, A., Fakolujo O. A., and Olaniyi, O. M. 2018 International Journal of Scientific & Engineering Research-RFID-Based Students Attendance Management SystemVol. 9, No. 1.
This paper focuses on the emergence of the electronic paradigm for learning compared to the traditional method and availability of almost all information on the information superhighway (Internet), nowadays have caused students to be less motivated to come to the lecture rooms than ever before.

*5.[5].*Santoso, Daniel and F. Dalu Setiaji. "Non-contact portable infrared thermometer for rapid influenza screening." *2015* International Conference on Automation, Cognitive Science, Optics, Micro-Electro-Mechanical System, and Information Technology (ICACOMIT) *(2015): 18-23.*

6.[6]. Chen, Baotong, Jiafu Wan, Lei Shu, Peng Li, Mithun Mukherjee, and Boxing Yin. "Smart Factory of Industry 4.0: "Key Technologies, Application Case, and Challenges." *IEEE Access* 6 (2018): 6505-6519. This paper focuses on a hierarchical architecture of the smart factory that was proposed first, and then the key technologies were analyzed from the aspects of the physical resource layer" [6], the network layer, and the data application layer. Finally, a candy packing line was used to verify the key technologies of the smart factory, which shows that the overall equipment and the effectiveness of the equipment are significantly improved by the author.

7.[7]. Nooruddin S, Milon Islam M, Sharna FA. An IoT-based device-type invariant fall detection system [7]. Internet Things. 2020;9:100130. https://doi.org/10.1016/j.iot.2019.100130. This paper focuses on the use of technology for the development of accurate and fast automatic fall detection systems that have become a necessity. Most of the fall detection systems are developed for specific devices which reduces the versatility of the fall detection system.

8.[8]. Al-Ali AR, Zualkernan IA, Rashid M, Gupta R, Alikarar M. A smart home energy management system using IoT and big data analytics approach. IEEE Trans Consum Electron. 2017. HTTPS://doi.org/10.1109/TCE.2017.015014.This paper focuses on the Increasing cost and demand of energy that has led many organizations to find smart ways for monitoring, controlling, and saving energy. A smart Energy Management System (EMS) can contribute towards cutting costs while still meeting energy demand. The emerging technologies of the Internet of Things (IoT) and Big Data can be utilized to better manage energy consumption in residential, commercial, and industrial sectors.

9.[9].Tamilselvi V, Sribalaji S, Vigneshwaran P, Vinu P, GeethaRamani J. IoT-based health monitoring system. In: 2020 6th International conference on advanced computing and communication systems (ICACCS). IEEE; 2020. p. 386–9. This paper focuses on coma patient health monitoring. Continuous fitness monitoring can store up to 60% of human lives through timely detection. The device is specially designed for actual-time monitoring of the health parameters of coma sufferers. It has more suitable using the use of GSM and IoT to recognize the status or condition of the patient.

10.[10]. Acharya AD, Patil SN. IoT-based health care monitoring kit. In: 2020 Fourth international conference on computing methodologies and communication (ICCMC). IEEE; 2020. p. 363–8. This paper focuses on the design and implementation of an IoT-based smart doctor kit for a critical medical condition that can provide a versatile connection to IOT data that can help emergency health services such as Intensive Care Units (ICU).In recent technology, IoT gives a base where the user can access all information regarding health from anywhere.

11.[11].Teichmann D, Brüser C, Eilebrecht B, Abbas A, Blanik N, Leonhardt S. Non-contact monitoring techniques—principles and applications. In: Conference proceedings of the IEEE engineering in medicine and biology society; 2012. This paper focuses on non-contact methods for monitoring physiological activity. In particular, the focus is on ballistocardiography, capacitive ECG, Infrared Thermography, Magnetic Impedance Monitoring, and Photoplethymographic Imaging. The principles behind the methods are described and an inside into possible medical applications is offered.

12.[12]. Marques G, Pitarma R. An indoor monitoring system for ambient assisted living based on Internet of Things architecture. Int J Environ Res Public Health. 2016;13:1152. https://doi.org/10.3390/ijerph13111152. Marques G, Pitarma R. An indoor monitoring system for ambient assisted living based on Internet of Things architecture. Int J Environ Res Public Health. 2016;13:1152. https://doi.org/10.3390/ ijerph13111152. This paper focuses on Marques G, Pitarma R. An indoor monitoring system for ambient assisted living based on Internet of Things architecture. Int J Environ Res Public Health. 2016;13:1152. https://doi.org/10.3390/ijerph13111152.

13.[13]. Ayaz M, Ammad-Uddin M, Sharif Z, Mansour A, Aggoune E-HM. Internet-of-Things (IoT)-based smart agriculture: toward making the fields talk. IEEE Access. 2019;7:129551–83. HTTPS://doi.org/10.1109/ACCESS.2019.2932609.This paper focuses on systems and architectures for ambient assisted living (AAL) is undoubtedly a topic of great relevance given the aging of the world population. The AAL technologies are designed to meet the needs of the aging population to maintain their independence as long as possible.

14.[14]. W. Yue, L. I. Voronova and V. I. Voronov, "Design and Implementation of a Remote Monitoring Human Health

System," 2020 Systems of Signals Generating and Processing in the Field of on-Board Communications, *2020*, pp. 1-7, doDOI10.1109/IEEECONF48371.2020.9078574.This paper focuses on implementation in all spheres of human life. One of the main directions, in addition to IIoT and Smart City, is Smart healthcare. Wearable devices, including wristbands, not only play an important role in human health monitoring but also have great potential in driving safety. The article describes the development of a hardware-software complex for monitoring the health status of a vehicle driver, which uses portable devices to control the physiological parameters of a person and transfers data to a mobile terminal or uploads it to a cloud server for data analysis.

15.[15]. Park S.J. et al. (2017) Development of the Elderly Healthcare Monitoring System with IoT. In: Duffy V., Lightner N. (eds) Advances in Human Factors and Ergonomics in Healthcare. Advances in Intelligent Systems and Computing, vol 482. Springer, Cham. https://doi.org/10.1007/978-3-319-41652-6_29. This focuses on chances of surviving from an acute and sudden infarction are much higher if the elderly people get emergency medical assistance within a few hours of occurrence. Elderly health monitoring and emergency alert system are mentioned as one of the main application areas of pervasive computing and biomedical applications. Moreover, a proactive elderly health monitoring system involves active capture of brain and body movement signals, signal analysis, communication, detection, and warning processes.

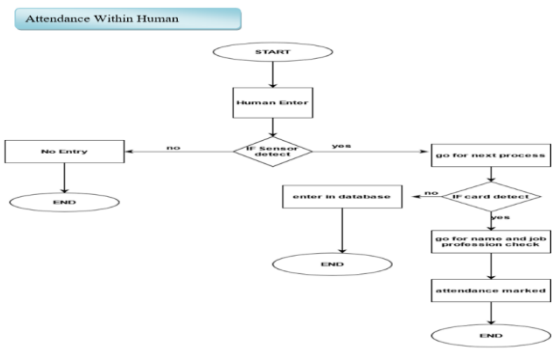
III. PROPOSED WORK

HEALTH CHECKING

Fig 1: Algorithm for health checking

ATTENDANCE WITH HUMAN DETECTION

Fig 2: Algorithm for attendance with human



This ecosystem consists of every interactive component that makes the IoT product function as designed, including:

- Management and control software available to the user.
- Network communication protocols, used in local networks and over the internet.
- Embedded hardware and its associated sensors, receivers, actuators, and memory storage.
- 3*Bear board - Proximity Sensors - 3*Arduino Uno - Arduino Nano V3 and Bluetooth module HC-06.
- 5v Buzzer - Connecting Wires - Power Supply.

ONLINE INTEGRATION WORKING

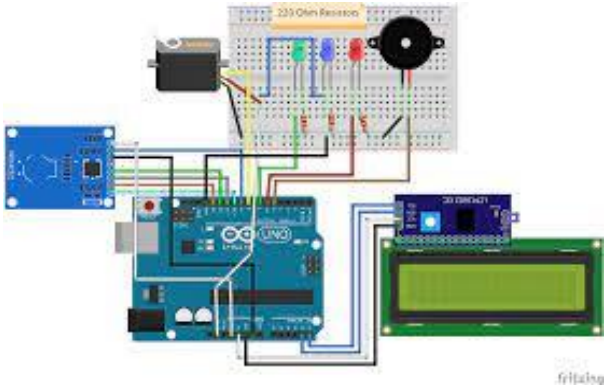


Fig 3: Connected with RFID For Human detection sensor

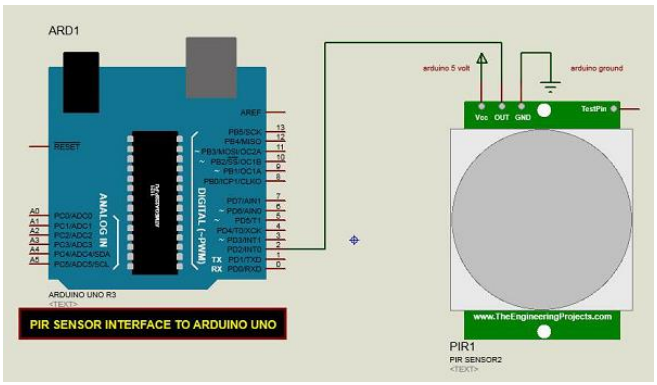


Fig 4: PIR Sensor with motion sensor (Arduino)

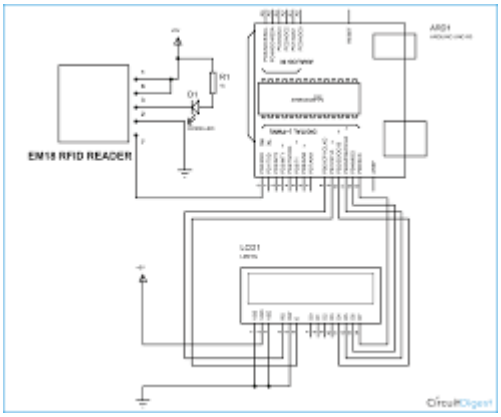


Figure 5: Circuit Diagram for Card Reader

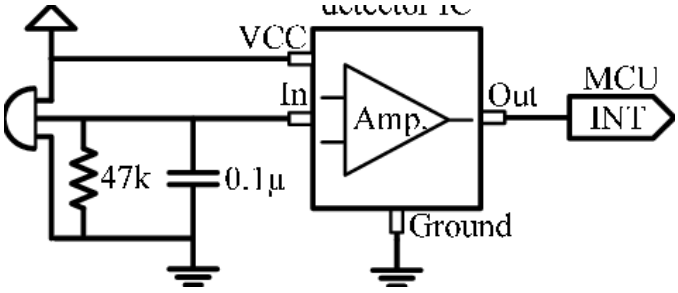


Figure 6: PIR Sensor Module Circuit Diagram

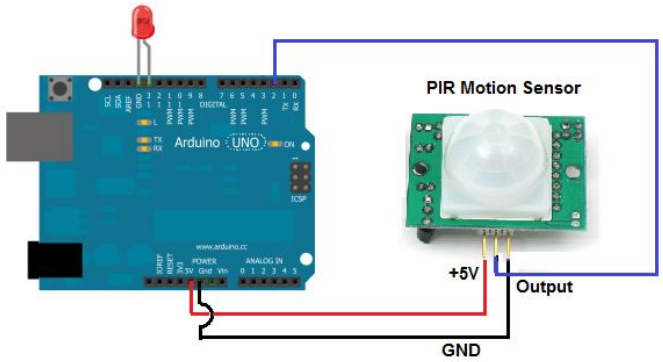


Figure 7: Motion connection sensor testing

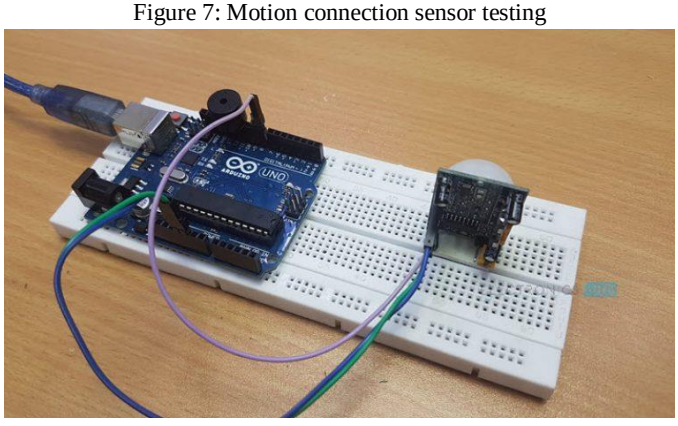


Figure 8: Arduino with PIR sensor testing

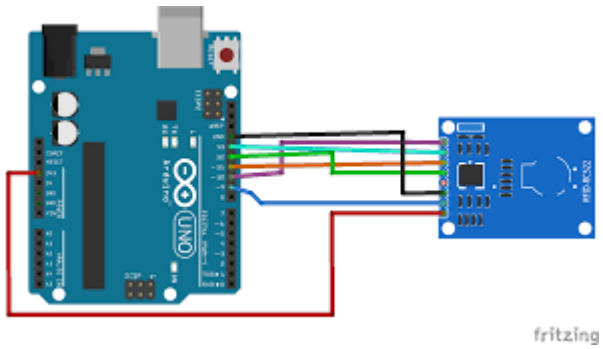


Figure 9: RFID Sensor

For example: -Human Detection would be detected according to the code above given image will clarify you.

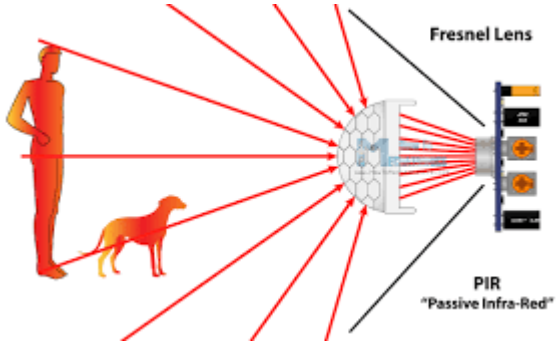


Figure 10: PIR Example

Following Components that plays role in human health and attendance with IoT ecosystem: -

A. Buzzer
B. Jumper Wires
C. PIR sensor
D. Arduino
E. Led light
F. RFID Card
G. Buzzer
H. Reader
I. Calculator and so on used

Advantages

1. Contactless: In recent pandemics, it is very necessary to be contactless and it's good for the upcoming future and plays an important role during bad situations times.

2. Reduces time and Energy: Reduces to take such manual interaction immediately it will take the actions

3. Wide Range of Implementation using various implementation and tools with regarding tools and necessary for the future bad coming it will be the ever-ready situation.

4. Reduces work for the manpower.

Disadvantages

1. Online devices no manual testing.

2. Cheap cost devices have no quality and don't long last the quality of devices.

IV.FUTURE WORK

After this detection, its next part will be fingerprint detection and human eye detection with the connection of sensors that can be used in past types of equipment with online Simulators. After detection of the human through a proximity sensor, we can check humidity and give them a role according to humidity.

V.CONCLUSION

This paper represents human health and attendance IoT Ecosystem to solve the problem with High-rate types of equipment. The Proposed a new way to control health and attendance. It will detect the Human health and attendance on their humidity (normal temperature/High Temperature)

VI.ACKNOLEDGEMENT

With a sense of gratitude and respect, we would like to extend of heartiest thanks to those who have provided help and guidance during our college period. It was a pleasant and highly educative experience to work for the project Human Health and Attendance with IoT Ecosystem. We are grateful to Professor Kaushal Gor who was kind enough to consider our choice and trust in us for providing a good Seminar Report and was always ready to provide the best instructions and guidance to do work better. Many things and persons help us for working on this Research paper

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