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IOT Based Attendance Monitoring System using RFID

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Abstract: The IOT based Attendance monitoring system using RFID with the help of Google Sheet is a project that aims to automate the attendance process in Schools, Colleges and Organizations. The system uses an RFID reader to read the RFID tags of the students or employees and sends the data to the ESP8266 module. The ESP8266 module is programmed to communicate with the Google sheet to store and retrieve attendance data. The system is accessed from anywhere with an internet connection, making it easy for teachers or managers to view attendance records. The project involves programming the RFID Reader and ESP8266 module, to set up the Google Sheet to store and retrieve data. The system can provide accurate and efficient attendance management, reducing the workload of teachers or managers and ensuring records are up-to-date.
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Index Terms **– Attendance monitoring system, IOT, RFID, Google sheet.**

I. INTRODUCTION

One of the effective factor that support the system of presence of student. Because in many cases student often absent, so in traditional manual paper based attendance take too much time which is very time consuming, insecure and usually leads to human error. Although work get wasted in organizing and structuring the attendance data in register in traditional method. Besides in many cases there are introduce proxy unauthorized person which leads to insecurities and misleading of organizing structure. As a result we present this system to overcome this different type of disadvantages. RFID (Radio Frequency Identification) technology has been revolutionized the way we track and manage data. Once area where it has proven particularly useful in attendance monitoring system. In this system, RFID tags are used to identify and track individual as the person enter in bus and allowing only an authorized persons. In addition to allowing for accurate and efficient attendance recording with the help of Google Sheet. They mainly record related to authorized persons namely Date, Time and their name. The particular system using RFID tags to track attendance and record it in Google Sheet. By accordingly the process, we can save the time and resources while ensuring accurate attendance records.

II. LITERATURE SURVEY

[1] The RFID automated Tracking attendance is presented Shashank Shukla, Pooja sore.The system then records the time and date of the attendance and sends the information to the instructor's computer for easy tracking and record-keeping.

[2] RFID based system for school children Transportation safety is presented by Dr. Stya Shrikant, Shilpa Shree K. The objective of this paper is the technology being used to should be crucial enough to keep our society safe. To improve Transportation Safety.

[3] RFID & It's used in Libraries is presented by Neeraj Kumar Singh. The aim of these are tagging books with RFID tags to quickly. Locate misplaced book on the shelves & checkout.

[4] RFID based vehicle authentication using Smart card is presented by Litty Rajan, Alpana Gopi. The aim of this survey is to find RFID application in authentication of all vehicle during inspection.

III. SYSTEM OVERVIEW

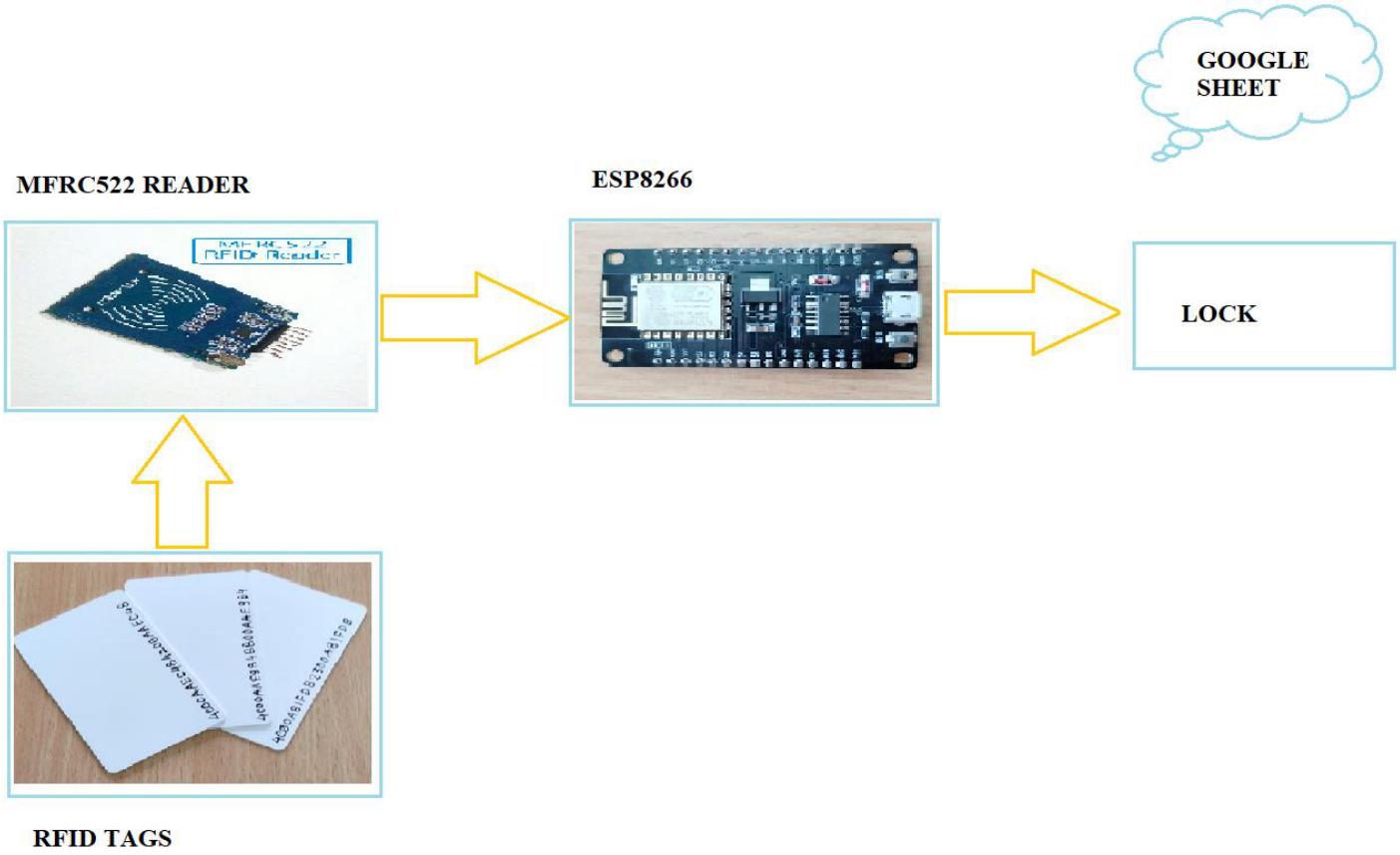

Fig 1. Block Diagram of IOT based Attendance monitoring system using RFID.

IV. WORKING

A Passive tag is an RFID tag that does not contain an internal power source, such as battery & instead of relies on the electromagnetic energy transmitted from an RFID reader to power the tags circuits. When a passive RFID tag enters the electromagnetic field of an RFID reader, it receives energy from the readers signal and uses the energy to power its internal circuits. The tag then modulates the signal to reflect its unique identification number back to the reader. MFRC522 is a highly integrated chip for contactless communication at 13.56 MHz. The MFRC522 is commonly used in RFID reader applications for access control, identification. It's operate on 3.3V and communicates with Nodemcu through a standard SPI interface and receives the modulated signal and decodes the identification number to identify the tag. The MFRC522 chip is used to read and write data to RFID tags. It supports multiple communication modes, including the passive and active modes. It can detect and communicates with multiple tags simultaneously. MFRC522 is a versatile and popular chip for RFID reader applications. Easy to use and compatibility with RFID protocols. The ESP8266 is a small and affordable device that can connect to internet wirelessly. The ESP8266 module built in wifi capabilities, making it easy to connect to the internet and communicate with other devices.ESP8266 module can be programmed using the Arduino Integrated Development Environment (IDE). They receive data from RFID reader and process on it. Furthermore match the data is stored on datasheet and received data from user. A Solenoid lock is an electromechanical device that uses a Solenoid, which is a coil of wire to control the locking mechanism. When an electric current flows through the solenoid coil, it generates a magnetic field that pulls a bolt, which is attached to the lock mechanism. This movement causes the lock to engage or disengage depending on its configuration. In case data is matched at that time the lock will be open for authorized person otherwise it remains close. Google sheet is a free web based spreadsheet program provide by Google composing its Google Drive Service. It allows users to create and edit spreadsheet online while collaborating in real time with others. Along Google sheet, users can input and organize data perform analysis and create charts. The program assistance various data types including text, number and dates. As well as it can access their spreadsheet from any device with internet access.

V. FLOWCHART

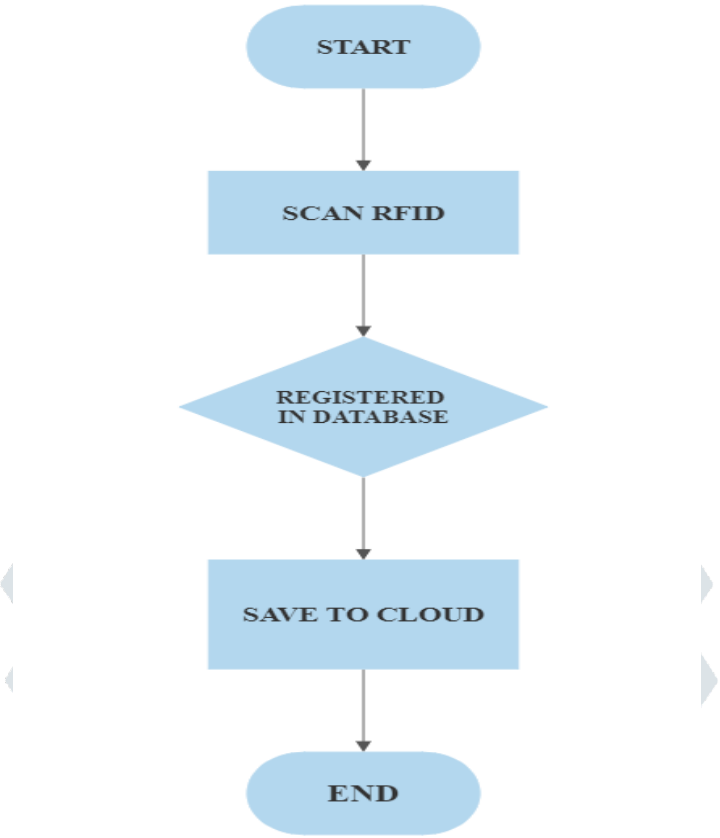

Fig 2. Flowchart System

VI. RESULT

RFID & IOT Based Attendance

File Edit View Insert Format Data Tools Extensions Help

	A	B	C
1	Date	Time	Name
2	4/26/2023	9:44:53	POONAM DEVKAR
3	4/26/2023	9:45:00	KOMAL WALHEKAR
4	4/26/2023	9:50:00	PAYAL KANSE
5	4/26/2023	9:51:12	RUTUJA BABAR
6	4/26/2023	9:52:40	ARCHANA PATIL
7	4/26/2023	9:55:15	TEJAS DUDHANE
8	4/26/2023	9:55:20	BHAGYASHRI SHENDGE
9	4/26/2023	9:55:55	SIYA VERMA
10	4/26/2023	9:57:25	DEVASHRI PAWAR
11	4/26/2023	9:58:11	DEVA MANE
12	4/26/2023	9:59:30	PRIYA DOBHE
13	4/26/2023	10:00:15	GAYATRI TALWAR
14	4/26/2023	10:00:45	CHETNA PANDE
15	4/26/2023	10:01:25	MISHTI SHENDE
16	4/26/2023	10:02:56	POOJA MENDHARE
17	4/26/2023	10:03:32	SONIYA PAWAR
18	4/26/2023	10:04:00	MAYURI DESAI
19	4/26/2023	10:05:01	NIYA KOKATE
20	4/26/2023	10:09:24	OM KARANJE

Fig 3. Attendance List

Fig 3. Present the list of student with his attendance just at the moment that enter in Bus. By means of list student's presence or absent can be followed.

VII. FUTURE SCOPE

Voice announcement system. No matter when a user logs in, we can announce messages such as, "Your attendance has been logged in" or "Your card is invalid".

The structure can be upgraded by surrounding it in a cling wrap. Previously mentioned might make it more compact and easier lecture-wise attendance taking.

It could be modernize by impulsive manipulates attendance percentage of students along with staff.

VIII. REFERENCES

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