Employee Tracking System using RFID

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Abstract— In every organization huge or small it has problem to track or monitor the labour or employees present over the field. Each association has diverse representative administration needs. The proposed system is based on RFID readers supported with antennas and employee identification cards containing RFID tags which are able to electronically store the information. This paper present the idea of use RFID technology. RFID is emerging technology that helps humans identify other humans or machines remotely. This fact releases humans from the burden of the daily lengthy and intensive tasks. RFID is a small chip and an antenna which is being integrated into various objects like credit cards, ID cards, passports and similar personal items. The RFID is used to track and identify items that have it in them wirelessly. This paper gives a brief introduction to principles of RFID, classification of RFID tag and reader as well as advantages and disadvantages.

Keywords: RFID, Tracking system, Employee, Organization

I. INTRODUCTION

RFID based employee tracking system. In today's world it is necessary to track people in large organizations like oil refineries, hospitals.IT industries, schools and colleges campuses. In today's technology based world it is not an easy task to keep record of individual employee manually. Previously, industries used to keep record manually which includes registering information with the help of pen and paper. It became difficult to record such information and store it. Storing such information manual became difficult. Storing such information manually had different risks like it could lead to different fraud changing data, like data manipulating etc. In order to reduce such risks, we proposed an automatic system like Employee tracking and monitoring system using RFID.

II. LITERATURE SURVEY

The main aim of this study is to develop an employee tracking system using RFID. Radio Frequency identification based Employee monitoring system where employees will be monitored using RFID tags. A tracking system which can track individual when they enters the room. The system involves adding new employee, manage log, time and attendance. So keeping logs it will also check the authenticity of the employee. As only authentic person can enter the field, office etc.

1) Literature Table

Sr. No.	Paper Name	Author	Year	Method
1	RFID based Employee Monitoring System	Saumya Sharma, Shimi S.L	2014	RFID Technolo-gy
2	Employee Monitoring and HR Management Using RFID	S.Srinivasan, Dr.H.Rang nathan	2016	RFID
3	Design of Employee Tracking System using RFID	Francis Agaba	2018	RFID

III. SIGNIFICANCE

In large organizations where labour is in huge number, it is not possible to keep an eye on every individual. Henceforth RFID is proposed as a result of its lower cost and expanding capacities of the RFID procedure which pulls in

following along and checking the development of labourers and representatives in an organization.

IV. AIM AND OBJECTIVE-

The aim of the system is to design an employee tracking using RFID.

Objectives-

1. Usefulness of RFID in employee tracking system.
2. Design of employee info.
3. Database that will give input and store the necessary data.
4. To record the working hours of the employee and generate the salary.

V. SCOPE-

The main targets of this system is every large as well as small organization such associations might be education institutions, banks, hospitals, companies and so on.

VI. RELATED WORKS-

A. *RFID*-

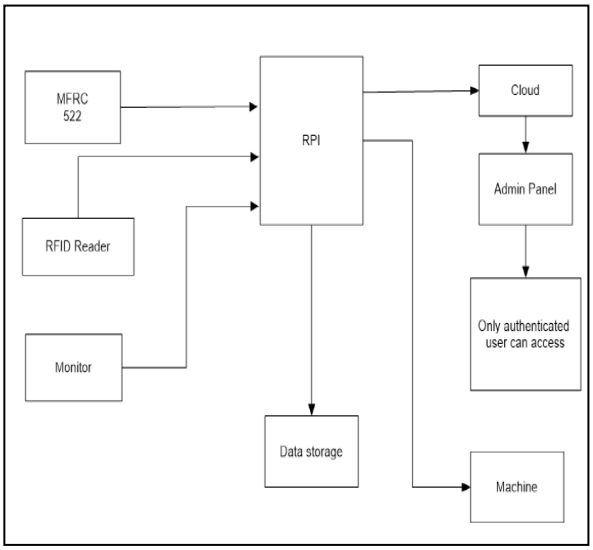
RFID uses radio frequency to communicate between the tag attached on a device and RFID reader that identifies the unique RFID reader that identifies the unique RFID tag which can be used for identifying and tracking the implanted object . RFID works internally and what the applications of it are.

RFID are attached physically to the device which needs unique identification. RFID tags stores a serial number that identification the object and some additional data can also be stored on the device along with the serial number according to the size limitations. It also have an antenna that is used to transmit this data from tag (on the device) to the reader. RFID provides low cost contact less identification of devices. When the device comes in ranges of the RFID reader equipment, readers read this data on the tag –using the radio frequency even without the actual contact. RFID systems contain a device implanted with RFID tag, a RFID reader, a middleware which can be used to specify business logic if any to process the data(for example payment of a vehicle on toll plaza) and the device that display the processed RFID information which can be desktop laptops or an individual system.

B. *Components used in system*-

Antenna
RFID Reader
RFID tag
Host computer with application software
For RFID systems to work, the following components are essential.

C. *BLOCK DAIGRAM*



1) *Tags (Passive or Active)*

Reader (Handheld fixed or integrated)
Software also known as middleware. Information is sent and read from RFID tags is send and read from RFID tags by a reader using radio waves.

a) *Passive* –

Passive RFID tags do not have any power source by themselves. They cannot emit .They can be scanned read and (in many cases) over written by subjecting them to and appropriate source of radiation, such as the security arches present at the exist of many stores to check if you are living with any stolen item .The tag in, say, in a clothing item or a book or CD at the store shelves, is written with a code saying that it is still unpaid for when you go to the cash and pay it is invisibly overwritten to status paid. So it will not beep when you cross and security arch. They are also used in modern supermarket,

where there is no need to scan at the cash, the whole trolley is passed through a scanning arch and all items are records at once.

b) Active-

Active RFID tags have a tiny battery (or are sometimes connected to an external power sources, which enables them to emit a signal which can be picked up by a receiver. In this way active RFID tags enable tracking the location and movements of an item in any open space not necessarily inside a shop or a warehouse. They can be useful for tracking the goods over a large production facility etc. The range of emission and the lifetime of the battery depends a lot on the circumstances if you program the tag to emit its location every hour it will drain the battery much faster than it you program it to emit the location once a day .However active tags are considerably more expensive and usually they are only used in environments where at the end of the process they can be recovered and reused (most passive tags remained it the item and are not reused).

2) RFID antenna-

An antenna is used for transmitting and receiving signal. RFID chip or integrated circuit is used to store the tags ID and other information .An antenna does not necessarily have to point directly at a tag to read it.
RFID has 3 main frequency ranges
LF (120 to 135 KHZ)
HF(13.65 MHZ)
UHF(865-930 MHZ)
For each frequency range the antenna design will be different.
If a tag is in the plane of the antenna, you can expert the best performance as it moves off the plane (up or down as well), you can expert it to decrease. You can also expert decreases it a tag is not oriented in the direction of a linear polarized antenna .Though the circularly polarized.

3) RFID Reader-

To recognized and treat data handheld or stationary scanning device is used. There are two types of RFID readers.
Handheld Reader
Fixed Reader
Radio waves are utilized to exchange information from the tag to the user. The RFID tag does not need to be filtered straight forwardly nor does it require viewable pathway to a per user. The RFID lable it must be inside the scope at a RFID per user which ranges from 3 to 300 feet. RFID innovation enables a few things to be immediately filtered and empowers a quick recognizable proof of a specific item.

VII. PROPOSED SYSTEM-

This system is developed using RFID technology. This model mainly consist of following modules-
1.Admin 2.Recorder

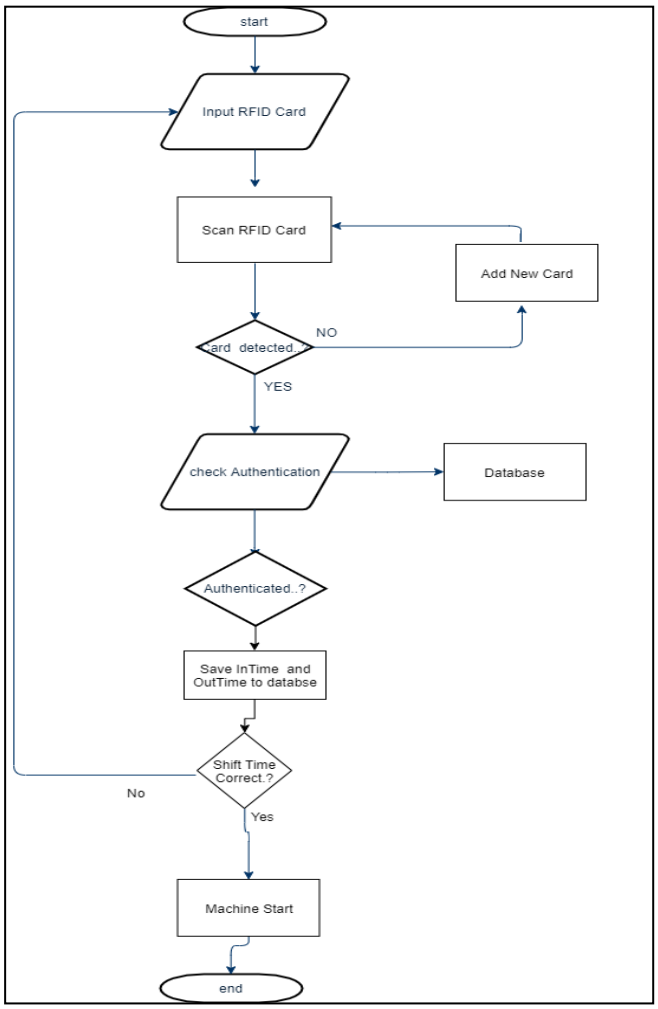
A. Admin-

This module includes entries of newly added employees. It will monitor and keep track of all the processes. This module is responsible for organization, students from school or college and access point installation. The admin can add, update and delete the record of the employee.

B. Recorder-

Each employee will be given unique RFID tag which will be inserted in an identity card. When employee enters the field, the employees will scan their own unique RFID tags provides to them. There will be authentication process. For authentication process , there will comparison between the data stored in the database and the person will be identified. After completion of authentication the employee will get entry into the field. If the person is not identified then he will be restricted from entering the field and for security purpose the buzzer will beep. When the working shift of the employee is completed, they may leave the field. Again for leaving they need to scan their cards. After entering the field, the working hours of the employee will be monitored. As per the work based on the working hours their salary will be generated.
This system is useful for security purposed like if there is a fire on field and we can count how many employees are present at the field, and it will be easy to rescue employee from the field.

C. Flowchart-



VIII. CONCLUSION-

It is designed to automate the development of specialist in various division in an organization. Here we are representing an idea that each employee will be given an unique RFID cards fitted into their identify card. The RFID reading gadget is put at the entrance of the office which will read the ID card. If there is an any mismatch found it will send security alerts to the authorities. It tracks effortlessly the employees present over the field or premises in an organization.

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