Implementation on digitalization of India using RFID Technology

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ABSTRACT

Smart cards are adopted by people all over the world for various applications. They are only intra Domain due to safety and reliability concern. There has been soaring demand for secure system that must be dependable and quick respond for the industries and company. RFID (Radio Frequency Identification) is one of the uniform and fast means to a technology whereby digital data encoded in RFID tags are acquisition by reader via radio waves. Using this technology we can establish secure and intermodal approach towards creating a multipurpose smart card. According to literature survey, there is no research proposal to describe that one smart card to support many application domain invariability. In this system we are going to integrate cards like Driving Licence, PAN card, ADHAR card, Ration card into single card. By using AES(Advanced Integrated Standard) algorithm the security inspection ensures that smart card provides strong security for multipurpose smart card implementation. For the security and authentication purpose the OTP(One Time Password) will be sent to the card holder and further process will be proceed for document verification at the server.

Keywords: RFID Card, Reader, Controller, Digitalization.

ARTICLE INFO

I. INTRODUCTION

The most of the authentication systems use User-name – Password, Security Pin, One Time Password, Photo ID etc., and each system faces common problem of to identify/verify authorized person. The system may give chance to any dishonest person if he/she knows your password or Security PIN. From the above paragraph, we can make conclusion that the Password is not suitable for our authentication system. Due to this, we have to explore new authentication system i.e., biometric authentication system. Biometric uses human's physiological and behavioural characteristics. The Biometric characteristics have good extent of uniqueness, availability, collectability. If we use this characteristics in our daily authentication system, the system gives good performance and throughput. In this paper, we mentioned about finger-print authentication system based on biometric finger-print

recognition. In all biometric techniques, fingerprint recognition is considered the most prominent and reliable one.

The paper outlines probable attack that can go against one's privacy and it also describes contradict measures. The RFID technology did not stop at thing-level tagging. The paper also presents current research that focuses on locating and tracking labeled object that move. Since the uses for RFID tags are so extensive, there is a large interest in lowering the costs for production of RFID tags. It turns out that printing tags may become a possible alternative to traditional production.

RFID tags or simply "tags" are small transponders that respond to queries from a reader by wirelessly transmitting a serial number or alike identifier. They are greatly used to track items in production environment

and to label items in supermarkets. They are usually thought of as a highly developed barcode.

However, their possible region of use is much bigger. This paper presents applications that are probable using RFID technology such as locate access control, location tracking, billing easily and others. RFID tags are expected to multiply into the billions over the coming few years and yet, they are been treated the same way as barcodes without taking into consideration the impact that this advanced technology has on privacy.

Fig 1. RFID card and Reader

II. PROBLEM STATEMENT

To overcome problem of showing any card for particular government officer. we are going to develop a system which will save time and hassle for the officer wanting to check the document of the particular user whose information is stored in the data base.

III. PROPOSED MODEL
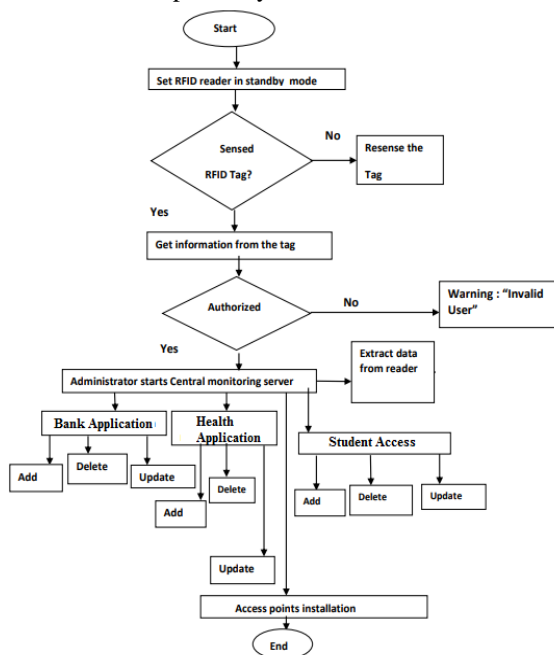
Flow Chart of the Proposed System:

Fig 2. Flow diagram

The granular details and specifications will be explained. And we also explain the flow of the system using algorithm.

(1) Start.

(2) Centralized server running.

(3) RFID reader is waiting to get a tag.

(4) Data simultaneously send to the controller.

(5) Authentication process identification

(7) All documents check from the database server

(7) Display the customer ID on LCD.

(8) The authentication will be automatically success from the user card.

　　　If (card is not valid)

Authentication failure;

　　　Else

Card is valid;

(9) After success of the system maintain the users log.

(10) End.

Module (user)
Login
Registration
Data Base server
RFID Tag
RFID Reader
System (admin)
User Record Maintain
Authentication Module
Unique record fetch
Tag Identification

IV. SYSTEM SPECIFICATION
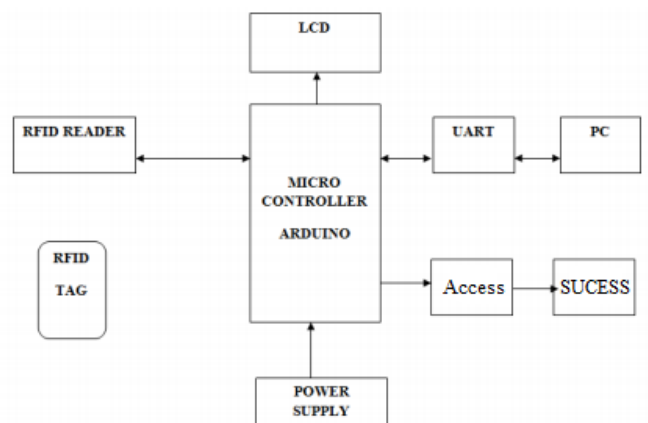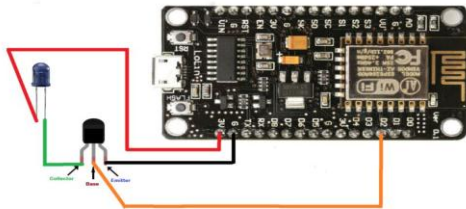

Fig 3. Block diagram

Controller:

A microcontroller is a small and low-cost computer built for the purpose of dealing with specific tasks, such as displaying information in a microwave LED or receiving information from a television's remote control. Microcontrollers are mainly used in products that require a degree of control to be exerted by the user.

RFID Reader:

An RFID reader's function is to interrogate RFID tags. The means of interrogation is wireless and because the distance is relatively short; line of sight between the reader and tags is not necessary. A reader contains an RF module, which acts as both a transmitter and receiver of radio frequency signals. RFID stands for Radio Frequency Identification Reader.There are amny uses of RFID reader in todays world.It is used to gather information from RFID tags.

RFID Tag:

RFID tagging is an ID system that uses small radio frequency identification devices for identification and tracking purposes. An RFID tagging system includes the tag itself, a read/write device, and a host system application for data collection, processing, and transmission.

APPLICATIONS:

The entire project idea is to develop safe and secure system to access the documents using Fingerprint:

- Banks: To open an account and to apply for loans
- RTO : To apply for license and RC
- College : For admission
- Passport office: For verification purpose.

ADVANTAGES:

- The Digitalization provides more reliable backup of documents.
- No need of carrying documents all the time
- The Digitalization will provide less time consuming in government processes
- The system is eco friendly
- The system provides more security due to biometric access for authentication.
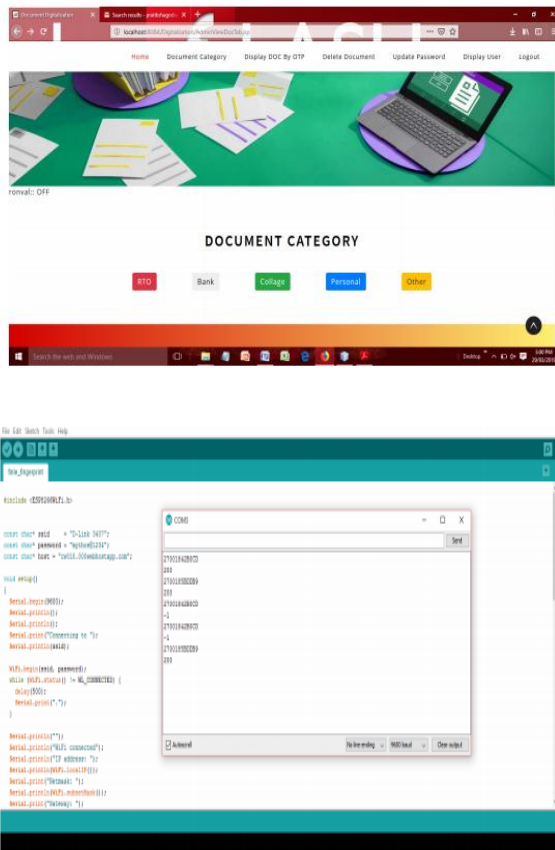
Connection Between RFID and ESP wifi Controller:

Connection between ESP wifi controller and RFID reader is shown below.

Fig 4Connection Between RFID and ESP wifi Controller:

V. RESULT

VI. CONCLUSION

This system allows for the availability of all the important documents that a user will require when he's applying for a bank loan or for many other reasons. This allows for the secure and a protected way of viewing individual documents without the hassle of the traditional methods of carrying all the documents wherever we go.

VII. FUTURE SCOPE

It can be a separate software in every field like in RTO, Bank, College admission as this project is general for all this requirements.

VIII. ACKNOWLEDGMENTS

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