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E-PASSPORT SYSTEM USING RFID TAG AND FINGERPRINT SENSOR

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Abstract: RFID is an acronym for Radio Frequency Identification. RFID is one member in the family of Automatic Identification and Data Capture (AIDC) technologies and is a fast and reliable means of identifying just about any material object. This project can be used for security purpose where it gives information about the authorized persons and unauthorized persons. The purpose is to limit the use of counterfeit documents. This, in turn, will prevent illegal entry of the travelers into any specific country at the same time maintaining the privacy and personal security of the e-passport bearers and track the person in which country. This proposed system uses Radio Frequency Identification (RFID) is a technology that uses wireless communication for identification purposes. The key characteristic that differentiates one RFID application from another is the purpose of identification.

Keywords: Automatic Identification and Data Capture (AIDC), Radio Frequency Identification (RFID), Security, E-passport

I. INTRODUCTION

The e-passport, as it is sometimes called, represents a bold initiative in the deployment of two new technologies: Radio Frequency Identification (RFID) and biometrics. System are wireless technology for automatic identification. They bring forth the era of next generation ID cards. Several national governments plan to deploy identity cards integrating RFID and biometrics for domestic use. We explore the privacy and security and other issues of the e-passport in this article cards. RFID and biometric technologies when combined, promise to reduce fraud, ease identity checks, and enhance security [2]. Secure and trusted travel documents are an essential part of international security, as they allow states and international institutions to identify the movement of undesired or dangerous persons. The specific choice of each country as to biometric security features to include makes a major difference in the level of security and privacy protection [1]. The e-passport with wireless contact on border control requires that any information is available without the holder's consent. It can be realized based on the access control procedure. Electronic passports have notable a good and quick readying all around the world since the International Civil Aviation [3].

Organization the globe have adopted standards whereby passports will store biometric identifiers. The employment of life science for identification has the potential to create the lives easier, and therefore the world folks board a safer place. The aim of biometric with RFID Tag suggests that e-passports are to stop the misappropriated entry of a person into a selected country and limit the employment of counterfeit documents by a lot of correct identification of a person. This paper analyses the fingerprint biometric e-passport style[4]. These papers concentrate on the privacy and private security of bearers of e-passports, the particular security profit countries obtained by the introduction of e-passports victimization fingerprint recognition systems.

II. MODELING AND ANALYISIS

System Architecture

The purpose is to limit the use of counterfeit documents. This, in turn, will prevent illegal entry of the travelers into any specific country at the same time maintaining the privacy and personal security of the e-passport bearers and track the person in which country. This proposed system uses Radio Frequency Identification (RFID) is a technology that uses wireless communication for identification purposes. The particular security profit countries obtained by the introduction of e-passports victimization fingerprint recognition systems[5].

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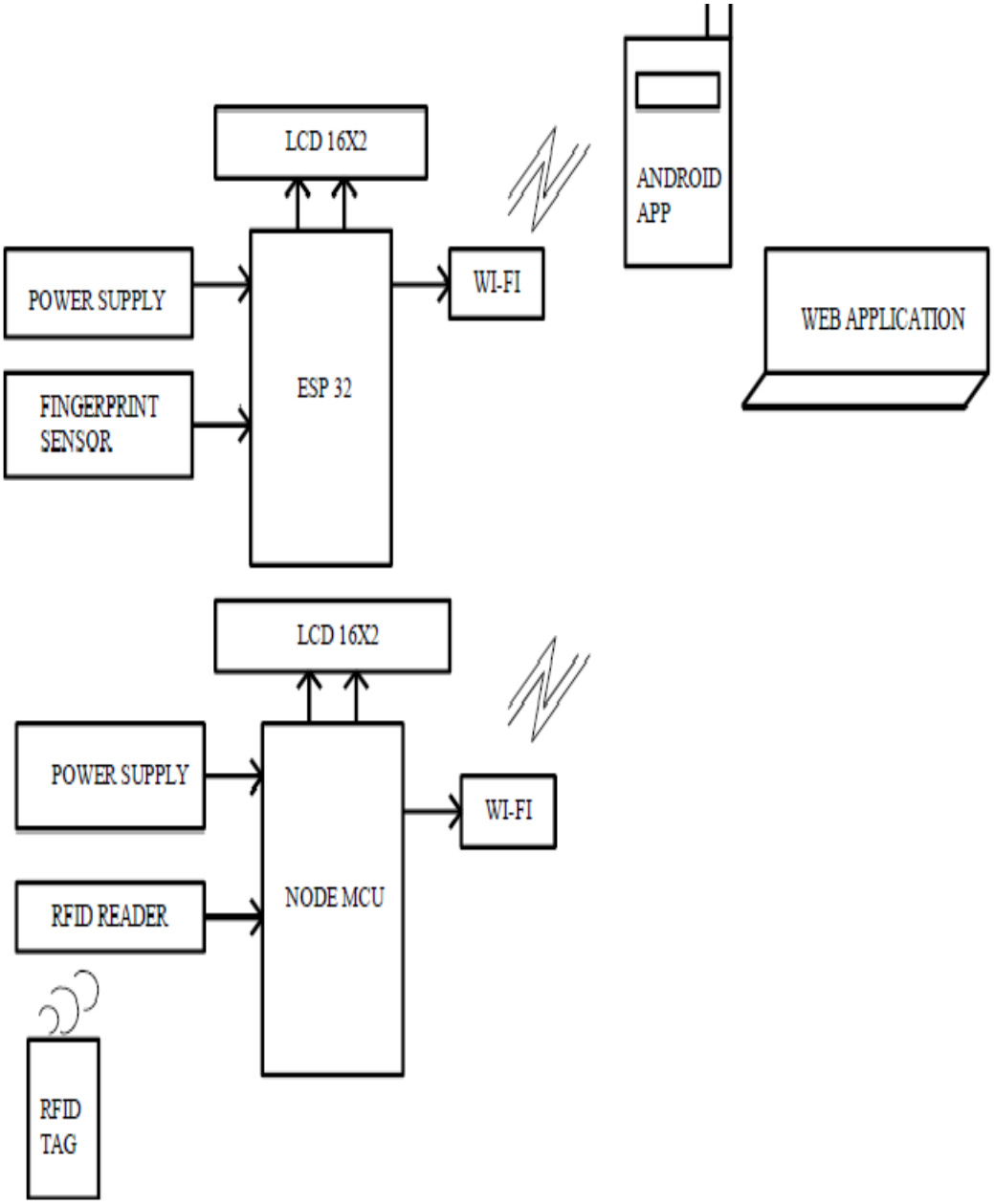

System Modules

- Node MCU
- ESP 32 Microcontroller
- Fingerprint
- RFID
- LCD 16x2

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III. LITERATURE SURVEY

Sr No.	Author Name	Paper Name	Publication Name	Description
1	M.Priyadharshini1, Prof.I.Kalphana	Finger print system used in vehicle documents verification	International Research Journal of Modernization in Engineering Technology and Science	Finger print authentication or popularity refers back to the automatic technique of verifying suit among human fingerprints. Fingerprints are one in every of many paperwork of biometrics used to identify individuals and confirm their identity
2	Shubham Kailas khairnar, Prasad Prakash Bhamare, Abhishek Sharad Hire, Junaid Moinuddin Khan	E-Passport Using RFID Tag and Fingerprint Sensor	International Journal of Scientific Research and Engineering Development-– Volume 2 Issue 5, Sep – Oct 2019	These papers concentrate on the privacy and private security of bearers of e-passports, the particular security profit countries obtained by the introduction of e-passports victimization fingerprint recognition systems.

IV. SYSTEM REQUIREMENTS

MINIMUM SOFTWARE REQUIREMENTS

1.Java-Java is a popular programming language.Java is used to develop mobile apps, web apps, desktop apps, games and much more.
2 CSS-CSS is the language we use to style an HTML document.CSS describes how HTML elements should be displayed.
3. HTML- HTML describes the structure of a Web page.Consists of a series of elements.Elements tell the browser how to display the content.

MINIMUM HARDWARE REQUIREMENTS

1. RFID READER - RFID (radio frequency identification) is a form of wireless communication that incorporates the use of electromagnetic or electrostatic coupling in the radio frequency portion of the electromagnetic spectrum to uniquely identify an object, animal or person.
2. LCD - The LCD displays **give the guidance to the person to scan the finger**. The fingerprint sensor is used to for biometric verification of the person.
3. Fingerprint Sensor - Fingerprint Scanners are used for **recognizing and authenticating the fingerprint of an individual**. Fingerprint readers and the scanners are safe and reliable devices for any security authentication.

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V. CONCLUSION

This project gives clear idea about the Electronic passport system which is much more beneficial for the airports and universities. It also reduces the burden of documentation as well as it reduces the time consumption. We analyses the major current and potential uses of RFID in identifying documents and the most important feature of this project is security, this will make the system centralized. The security of the system can be further increased by adding biometric information such as fingerprints, palm scan, iris scan, digital signature and another active authentication in the passport system.

VI. ACKNOWLEDGMENT

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[3] Shubham Kailas khairnar, Prasad Prakash Bhamare, Abhishek Sharad Hire, Junaid Moinuddin Khan E-Passport Using RFID Tag and Fingerprint Sensor International Journal of Scientific Research and Engineering Development-– Volume 2 Issue 5, Sep – Oct 2019
[4] Vaibhav Thorat, Tushar Bhite, Ketaki Kurane RFID Based E-Passport System © 2019 JETIR June 2019, Volume 6, Issue 6 www.jetir.org (ISSN-2349-5162)
[5] V.Ravali, p.Bhavani, d.Sampath kumar Passport verification system using rfid © 2018 JETIR September 2018, Volume 5, Issue 9 www.jetir.org (ISSN-2349-5162)