



Carrion Android application using NFC device

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Abstract-- Internet and digitalization is used on a considerable large scale in today's world. The concept of digitization is highly beneficial and significantly gives better results than the traditional system. This will allow accessing the paper data in a digital format. This also provides access to the same documents anywhere and anytime. However, there exist few things that are not digitalized, one of them is paperwork and documents. The document digitization process involves conversion of paper document into image and processing of obtained image to retrieve information. Several methods for conversion of paperwork into digitized formats are available. Documents play a vital role in day-to-day tasks of the citizen of this country. So, this proposed system provides a platform for digitalization of these documents which ensure security of the same and reduces the risk of the documents being stolen, damaged or affected in any way.

Key words-- Near Field Communication (NFC), Android application, Web application.

I. INTRODUCTION

Majority of government offices and organization use paperwork as a form of documentation used for purposes like verification, identification and authorization of user's identity. All the user data is stored in form of paper, also the data collection is simple and reliable. For example, a RTO officer demands driver license and vehicle paperwork from the user to collect the user data. Digitizing this will lead to reduction in the use of paper resources minimizing the consumption of paper, alongside speed up the same activity. Online forms and digital data is gaining momentum. To store this paperwork as digital data, conversion of the paper forms into suitable machine readable format is necessary. This can be done by scanning the paper documents and converting it into image format to make it available digitally. Digitization of a signal printout refers to the process of assigning discrete time-voltage values to the pixels of an image corresponding to a signal from the printout. Generally these previous history records are in paper documented format. In addition, most of the documented graphs are got torn or in position of blurred. So, it is necessary to preserve them by converting to equivalent digital signals through tracing and reconstruction processes. This process of digitizing documents in digital signal offers several advantages such as when this digitized signal is fed to today's advanced software/techniques, previous symptoms can be analyzed. This also helps to create the database of previous observed cases, which may be used for further analysis. It will be easy to transmit the digital signals rather than sending scanned documented images. Digitized signals can be easily converted to today's various usable formats. This reconstruction will be definitely helpful to medical practitioners and metrological department. . The digital data newly generated from the paperwork can be then linked to its respective user corresponding to user's unique identification number. The digitized documents registered on the user ID can then be accessed by the authorities using an android application. The traditional system consists of exchange of paperwork and documents for any necessary activity. This includes carrying the paperwork and hard copies of the documents anywhere you go. In carrying the paperwork chances exists that they might get damage due to natural calamities or other problems. Also, it requires more efforts to carry the physical copies and manage a number of paper forms. This can be overcome by digitizing the data as proposed in this system

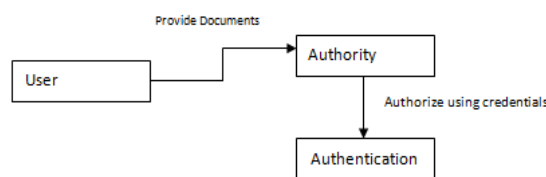


Figure No 1. Working of Traditional System

II. RELATED WORK

Mouad.M.H.Ali, Vivek H. Mahale, PravinYannawar, A. T. Gaikwad [1]

The authors have developed a fingerprint recognition algorithm based on minutiae matching. This algorithm works based on operations on the ridges and valleys in fingerprint images. The process consists of two phases, 1) Training and 2) Testing. During the training phase each fingerprint is captured by biometrics sensor or reader to generate digital image. This image is used as training data, then pre-processing apply to training data for removing unwanted data, noise, reflection etc. to increase the clarity of the ridge structure.

Luning Xia, YafeiJi [2]

NFC is a set of standards for portable devices. It allows them to establish peer-to-peer radio communications, passing data from one device to another by touching them or putting them very close together. NFC is a means of sending data over radio waves. In that sense it is similar to Wi-Fi or Bluetooth, but unlike those protocols (and like RFID) NFC can be used to induce electric currents within passive components as well as just send data. And it is faster than Bluetooth.

Jinal Shah, AashikaShetty, SukumarGaonkar, Dr.RadhaShankarmani [3]

Digitization is the process of converting information into a digital format. In this format, information is organized into discrete units of data (called bit s) that can be separately addressed (usually in multiple bit groups called byte s). This is the binary data that computers and many devices with computing capacity (such as digital camera s and digital hearing aid s) can process. Text and images can be digitized similarly: a scanner captures an image (which may be an image of text) and converts it to an image file, such as a bitmap. Audio and video digitization uses one of many analog-to-digital conversion processes in which a continuously variable (analog) signal is changed, without altering its essential content, into a multi-level (digital) signal

JonghyunBaek [4]

The authors have presented a paper on the approach of NFC tag, its working according to how it can be used for authentication purposes. It also introduces a method in which NFC tag can be used for ID purposes. It also introduces the technical aspects of NFC which includes the format of NFC messages and digital signature schemes for authentication of data. Tag authentication techniques used in NFC are also presented.

RupaliPatil, R.G. Karindikar [5]

The author presented that The term is often used to describe the scanning of analog sources (such as printed photos or taped videos) into computers for editing, but it also can refer to audio (where sampling rate is often measured in kilohertz) and texture map transformations. In this last case, as in normal photos, sampling rate refers to the resolution of the image, often measured in pixels per inch. Digitizing is the primary way of storing images in a form suitable for transmission and computer processing, whether scanned from two-dimensional analog originals or captured using an image sensor-equipped device such as a digital camera, topographical instrument such as a scanner, or acquiring precise dimensions from a real-world object, such as a car, using a 3D scanning device. This machine code is fed into an embroidery machine and applied to the fabric. The most supported format is DST file. Apparel companies also digitize clothing patterns.

Table No.1 Different technology used for NFC communication

Sr · N o	Paper Title	Application Type/ Method	Algorithm Used	Technology	Description
1	Improved Chameleon-A Lightweight Method for Identity Verification in Near Field Communication	Chameleon Lightweight method	-	NFC technology	Light weight technique in the field of device to device communication
2	Digitization and Paperless Processing through the use of mobile imaging Technology	Android	Feature detection algorithm006D	Mobile Imaging technology	Technology which is helpful for paperless processing
3	Secure and Lightweight Authentication Protocol for NFC Tag Based Services	Contactless payment and ticketing application	-	Lightweight Authentication	Various tools Can be made using NFC device
4	Digitization of documental signal using vertical scanning	Application for image processing	Prediction algorithm	Vertical Scanning	Scanning of documents using vertical scanning

III. PROBLEM DEFINATION

In today's world of advanced technologies and increasing use of internet, it is a very efficient and easy process to digitize day to day activities. Digitizing is used in majority of the fields in daily life, however not yet in operations related paperwork and documents. Digitizing the paperwork and documents will reduce the use of unnecessary resources and also reduce time consumption. This system takes one step forward towards the digitizing of the traditional system for the paperwork and documents activities. To minimize time consumption, avoid unauthorized access and reduce paperwork. The time needed to carry out these activities will be reduced; also efficient security methods are needed to be provided to the user. Extra paper resources used in the traditional system should be reduced.

IV. METHODOLOGY

Table No 2. Comparative study of Existing system and proposed system.

Technology	Paper [1]	Paper [2]	Paper [3]	Paper [4]	NFC System
Database	-	-	✓	-	✓
Web Application	-	-	-	✓	✓
Android Application	-	-	-	✓	✓
Security	✓	-	-	-	✓
Algorithm	-	✓	-	✓	✓

The proposed system is based on android and web application. It provides centralized data storage on one server. Web application will be helpful for storing the user details and for uploading the documents, android

application will be connected to web application and main database, android application will be made for the authorities and user will be provided with the NFC tags, NFC tag will contain the user ID (which will be his Aadhar card number) when the NFC tag will come in contact with the android application, User must input pin so that he can view all the necessary documents.

V. IMPLEMENTATION

In Figure no 4 there are various modules of the proposed system, under each module there are sub modules which give a brief idea of the main module, there is a web module which consists of login page, user details, and view user, modify user details and upload documents. The next module is the android application which is for the authority there is a login page, tap NFC tag, take finger print and display documents. Next module is the NFC tag which will store the user unique id. We are using MySQL for database, algorithm is image encryption algorithm.

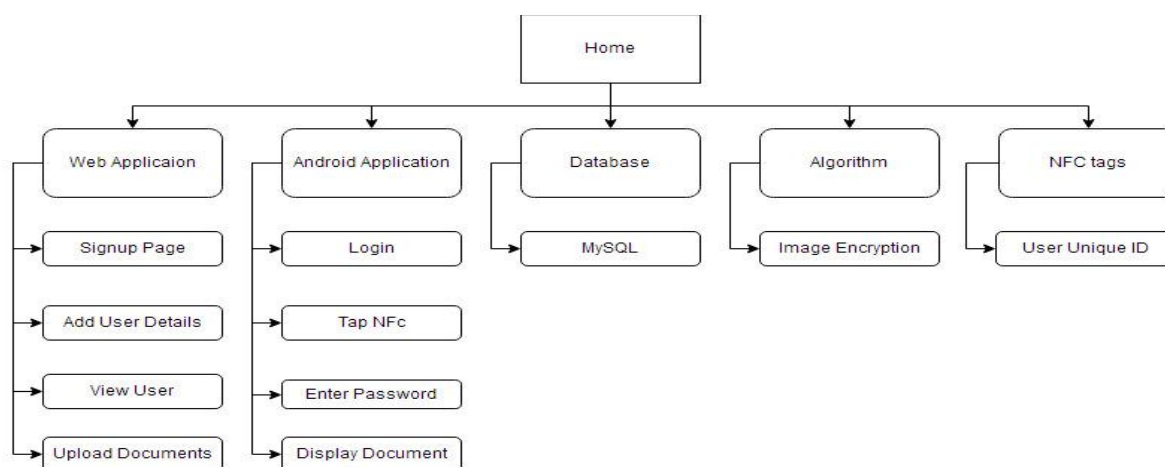


Figure no 4- Modules in the system

i. Web Application a) Home Page

This is the main home page from where there is access to all the fields in the website, here user can be verified, their details can be modified, and total number of user can be viewed, user documents can be uploaded from here

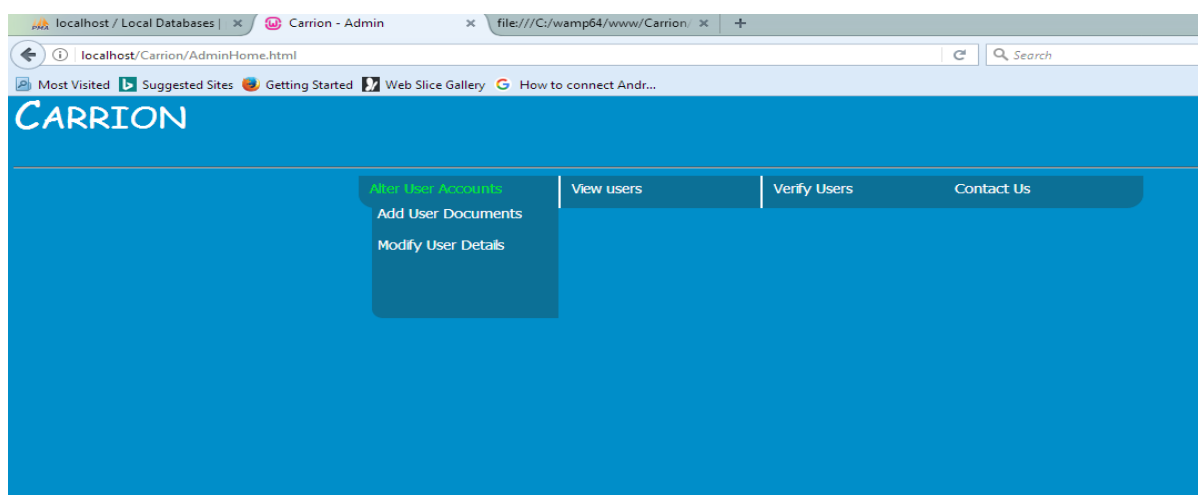


Figure no 5- Home page of web application

b) Upload Documents

Here all the necessary documents can be easily uploaded. Which can be useful for many purposes in future.

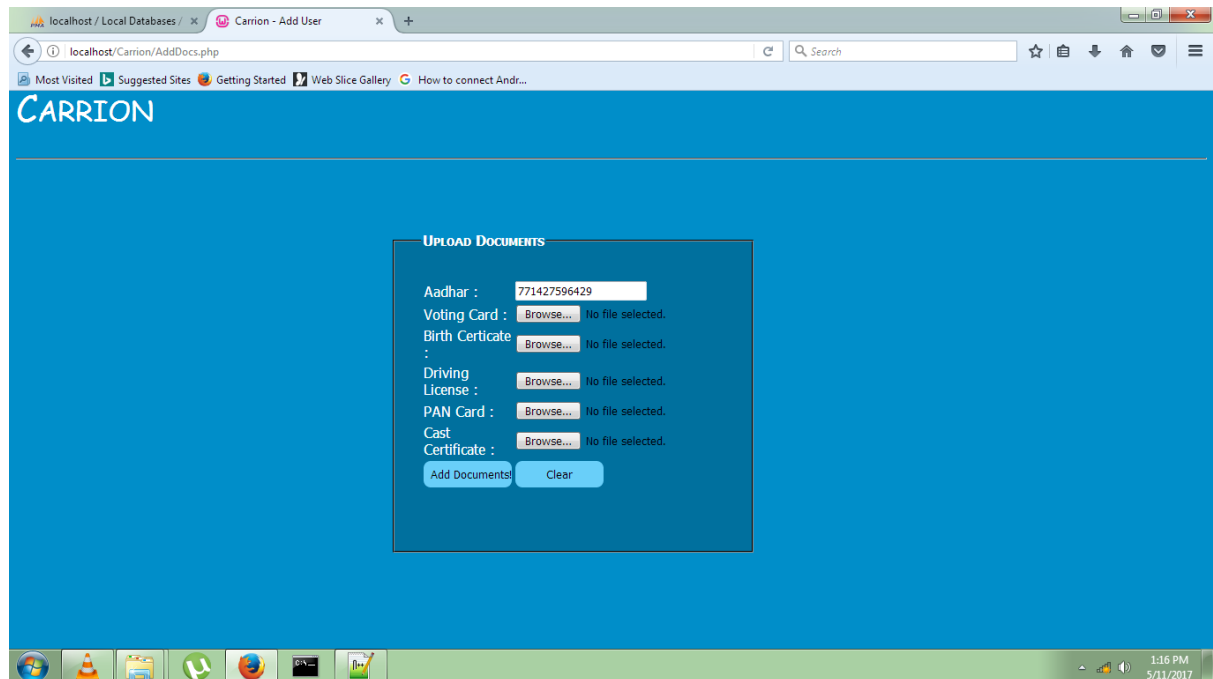


Figure no 6-Upload Documents

ii. Android Application

Figure no 7 is the login page for the authorities where the authorities can login, every new authority will have his own unique ID and password. All the documents will be displayed according to the authority type.

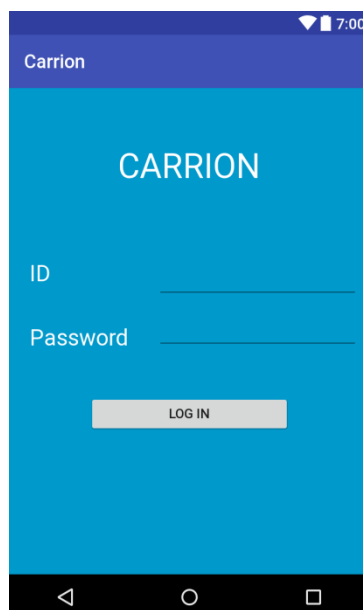


Figure no 7- Login Page

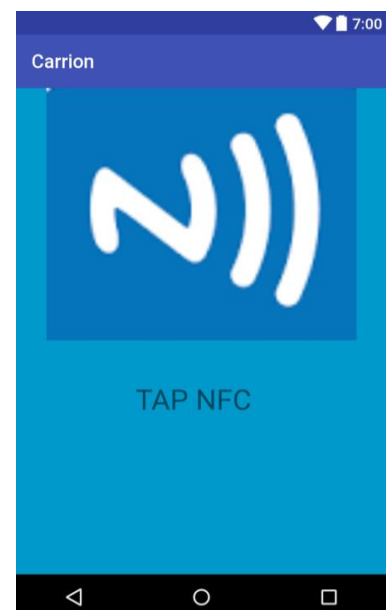


Figure no 7.1 Tap NFC

Figure no 7.1 is the tap NFC module where the user will tap his NFC tag , once the tag comes in contact with android application ,a pop up message will be displayed NFC tapped successfully.

Figure no 8 is the input password once the user inputs right password the document will be displayed to the authority, Figure no 8.1 is the view document where the necessary document can be viewed

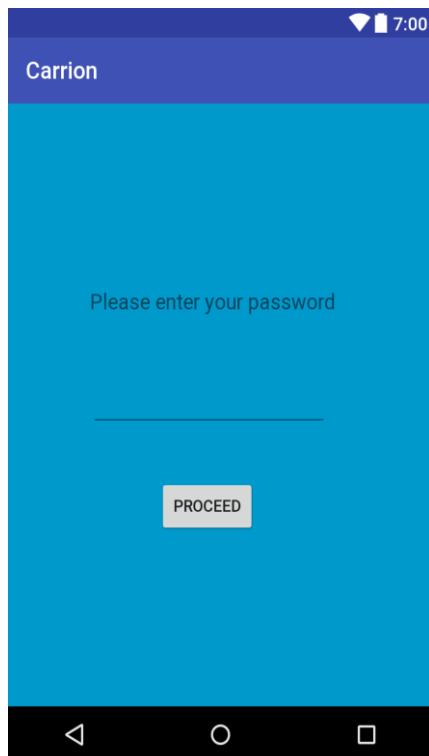


Figure no 8-Enter Password

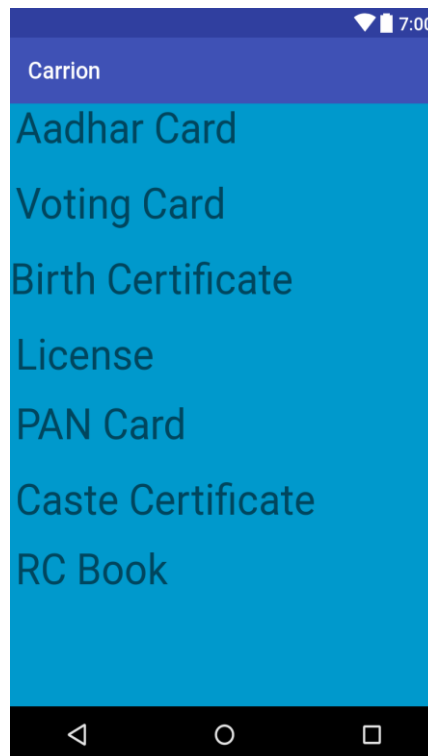


Figure no 8.1-List of Documents



Figure no 9-Documents Displayed

In Figure no 9 any document can be displayed from the list, the authorities can view the documents after the user gives successful password.

iii Database

Figure no 10 is the main database table here there are contents related to user and authority login and other details.

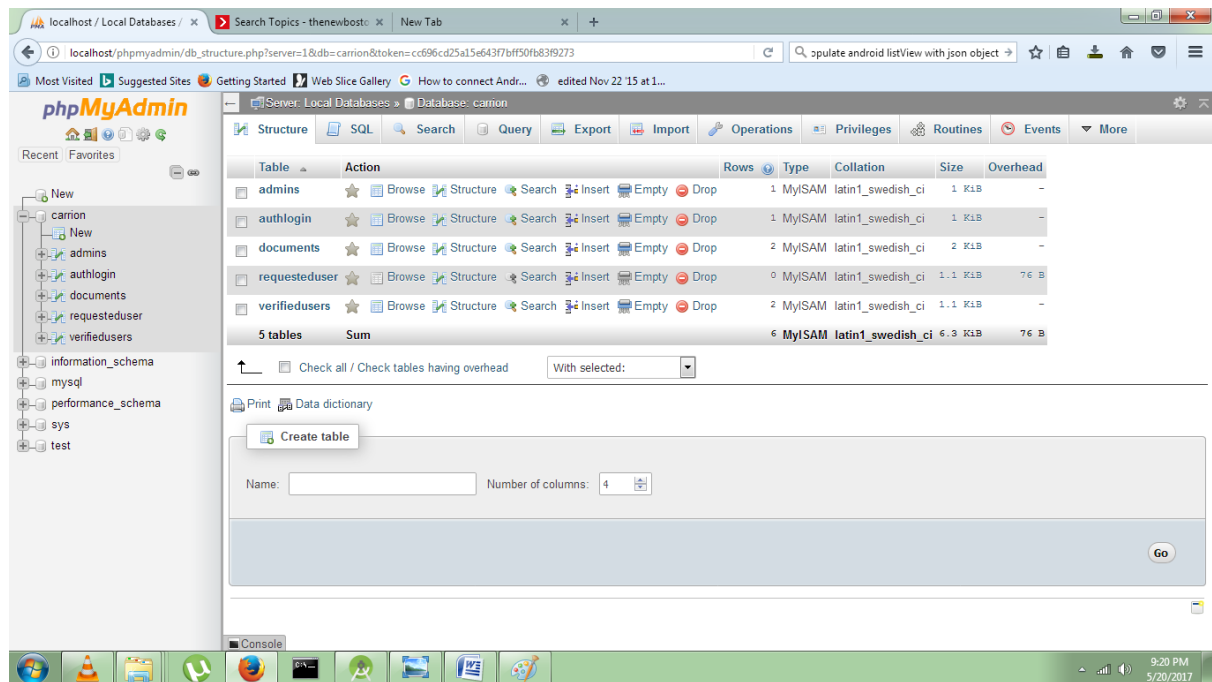


Figure no 10- Database of User and Authorities

Figure no 11 is the details of the user in the database

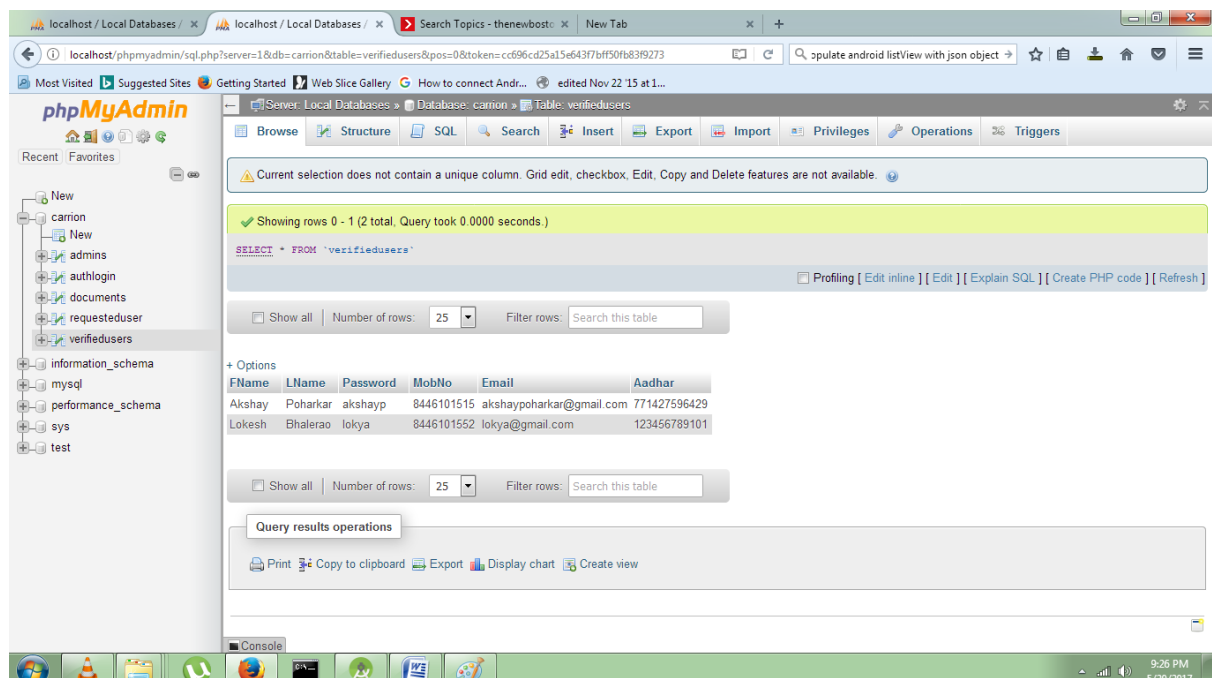


Figure no 11 – User Details

VI. RESULT ANALYSIS

The proposed system is developed and implemented giving proper results. Proposed system provides good security. Proposed system provides high effectiveness as well as it is a time consuming process.

VII. COMPARAIVE STUDY

1. Security:

Existing System:

In existing system user has to carry the hard copies of the documents

Proposed System:

In proposed system user will be having just one NFC tag which will have unique id all the documents will be linked to that id ,all the documents will be stored securely in encrypted format.

2. Algorithm:

Existing System:

NO algorithm is used in existing system.

Proposed System:

In proposed system we are using image encryption algorithm which will provide security and all the data will be stored in encrypted format .

3. Process:

Existing System: In existing system User should carry hard copies of the necessary documents.

Proposed System: In proposed system, due to Android and Web Application automatically documents are displayed.

4. Internet:

Existing System:

No need of internet as documents is carried by the user.

Proposed System:

Internet is essential in proposed system for storing data to the server.

Sr. No	Parameters	Existing System	Proposed System
1	Security	No	Yes
2	Algorithm	No	Yes
3	Effectiveness	Less effective	More effective
4	Process	Manually	Automatic
5	Time	More	Less
6	Internet	Not essential	Essential

Table No. 3 Comparative study of the system

VIII. Advantages and Limitations

Advantages

1. Reduce human efforts.
2. It gives more reliability.
3. User data is securely stored in the database.

Limitations

1. Every authority should have Android Mobile with NFC chip embedded
2. Internet is essential.
3. Required Server for storage.

IX. CONCLUSION

This proposed system will make digitalization of paper work, all the documents will be stored safely at one place in encrypted format, it will also avoid threats, attacks and unauthorized access, also provides security.

X. FUTURE SCOPE

In future we can add fingerprint module instead of pin or password. we can also show details of images such as recently viewed at what time.

XI. REFERENCES

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