RFID based e-document verification using cloud

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Abstract— **The project named 'RFID Based E-Document Verification Using Cloud' proposes to make the E-Document Verification the new technology to reduce the human efforts for getting the documents from certain institutes and even from Government offices. It provides an easy access to the document generation even if the document are misplaced or lost. In our system Radio Frequency Identification is the hardware process, which provides small RFID tags to the user with the electromagnetic waves and produce the signals to it and then access the data. In this project we have implemented the concept of Networking using java and the web application. The project aims at making the document verification and accessing very easy and saving a lot of time and energy and commotion among users.**

Index Terms— **Document; RFID; Government; time; energy.**

I. INTRODUCTION

Document gaining is the lengthy and complicated process. There are bunch of documents you have to carry and you need bunch of documents to get another one. Mostly people from remote areas or rural areas are unaware of this process and find it difficult to gain the documents. Therefore our system makes it easy to gain the documents online and with very ease and flexibility. Our main objective is to reduce the human efforts and time and make it efficient and fast process of document gaining. The people of India can access their documents from any part of the country very easily. No need to carry files and bunch of documents; and no fear of losing any document; if lost also you can get it very easily.[2}

Our aim is to develop an e-documentation system based on RFID using cloud storage. The environment of cloud storage is very secure which can store large amount of data over the cloud.

Cloud computing provides the sharing of the resources over the network and makes it simple to access. The Basic concept of cloud computing is to provide resource sharing and networking over the long distances. The speed of the Cloud sharing is more and is also profitable. It provides a very good interface for the users. Cloud storage data can be shared over the globe from any part of the world by the user just by using the respective cloud account from its computer or any other computing device.[3]This also allocated the data to the work of the users. This method maximizes the use of the storage facilities and reduces the use of paper, storage racks, etc., by making it user friendly. Cloud allows multiple users to access the data at the same time by making it user friendly and gives the access to large facilities and functions of the cloud services.

Cloud proposes the main technology of the virtualization. Virtualization allows physical computing devices to

mechanize and separates it from the virtual devices allowing to access the data over the cloud. Virtualization always keeps the system busy by allowing any type of work and make sure that system does not stay idle. Virtualizations speed up the process of accessing data and provide the full utilization of the system. This computing ability provides the increase in speed of the process and the automation thus decreasing the labor costs and human efforts and also the human errors caused by computing.[3]

Cloud storage application these days is very reliable and provides a vital access whenever needed. This helps to process the documents in a right perspective and very easy to gain the control over the system. Cloud helps to keep the data safe and also manages the data control very efficiently.

II. EXPERIMENT PROCEDURE

A. Literature Review

In the existing systems now a days RFID technology is used on a wider scale. The range of RFID tags is good and very easy to use. RFID technology is also cost efficient. For example, it is used in the food cafes, college libraries, different intuitions for attendance purpose, offices for the marking of employee in-out time.

Lifespan of RFID tags as compared to other technology is more. There is no need of magnetic strips in the RFID tags. Therefore renewal of the tags is not the early procedure.

B. Review Stage

This project proposes the architecture of using the scalable RFID tags for the gaining of the documents by using the storage facility of the cloud. This process also increases the computational speed and provides enhancing networking for the users over the cloud. RFID provides a easy computing system as the hardware is easy to access just by scanning and is a future prototype developed under the technology of the cloud computing.[4][6]

- The proposed system is hardware based system providing RFID tag and cloud storage.
- System provides the data access of the documents through the RFID tags.
- RFID scanner is used to scan the tags.

C. Final Stage

The Front end of the architecture includes the RFID tags, RFID readers, computing system and cloud computing services. It can access the cloud data whenever and wherever it is required. The user has to produce the RFID tag to the administrator for the verification of the tag. The RFID reader will scan the legitimate tags and will discard the out dated tags at once [7, 8].

The Back end has the data storage application which stores all the data of the system and provides access to the system whenever needed. After storing the data on the storage area it

is been transferred to the cloud services and user can access its data over the cloud. All the traffic over the system is managed by the server administrator and is made sure that the data is provided with all the efficiency without any problem of the services. The protocols allow the network interfaces to communicate with each other over the system [9, 10].
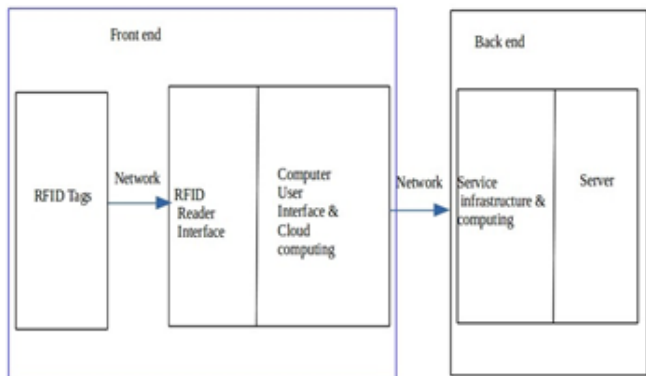
D. Figures

Figure 1: RFID System Architecture

The figure 1 explains the procedure of RFID scanning. The RFID tags are first scanned on the reader. Then the reader interfaces with the system. Then the cloud computing network interacts with the administrator and checks whether the user is legitimate and provides the required data after verification using the cloud server.

The RFID tags come with different ranges in centimeters, for example 10 cm or 20 cm. As the range increases the cost of the RFID tags also increases. It depends upon the cost of the RFID tags to define the range.
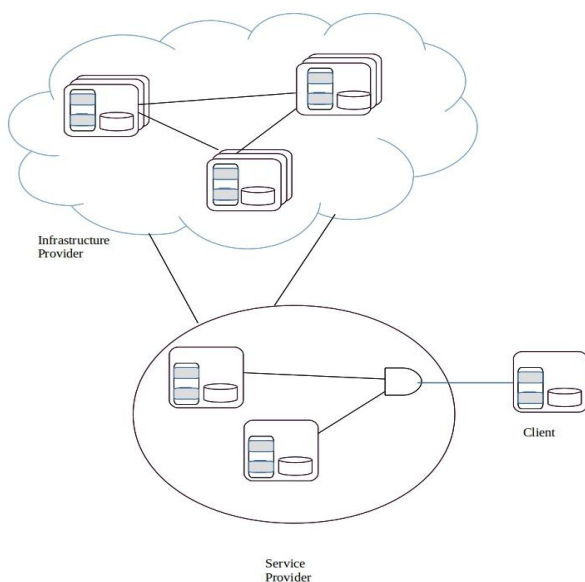

Figure2: Cloud Computing Network

The figure 2 explains the cloud computing architecture. The devices are connected to the cloud through the network. After proper access and authentication the server can gain access over the cloud server. As you can see the Infrastructure provider is connected with the service provider. The service provider first gains the access over the cloud server. Then it provides to the client as it is directly connected to the service provider. In this way the cloud computing services works.

III. RESULTS AND DISCUSSION

The proposed system has some advantages and disadvantages summarized below.

IV. ADVANTAGES

1) User has no need to carry bunch of documents anywhere.
2) Even if the document is lost, you can make it available easily.
3) All the documents will be provided at a central place.
4) The efforts of being in a queue and wait for the documents for a long period of time have been reduced.
5) People from any part of the country can take advantage of this technology.
6) It also saves lot of paper resources which is also beneficial to the environment.

V. DISADVANTAGES

1) A tolling booth must available nearest to you, if not you may have to travel a little.
2) If the RFID tag is lost you have take little efforts for gaining it back.
3) Tag card may be misused if the other person knows your password.

VI. APPLICATIONS

1) The Government Offices such as Tahsil Offices, Samaj Kalyan Offices, Judicial Courts, RTO Offices, Commissioner Offices, etc.
2) The various schools can adopt it for the documents and certificates distribution.
3) The ARC process can adopt it as to make the admission process easy and instant.
4) The various competitions or the sports institution can also adopt it for the distribution of certificates and awards.

VII. ALGORITHM

1) Start
2) Scan the tag on RFID
3) Enter the password
4) Verify the tag
5) Check for the documents
6) Provide the documents needed
7) Logout the user
8) Stop

First the user has to produce the RFID tag to the server administrator. The administrator will scan the tag and will ask for the password and will access the account. After verifying the account the administrator will ask for the required documents which user needs.

The user tell the requirements and the administrator will verify the documents. Then after the verification of the documents the administrator will provide the documents to the user. Then the account of the user will be logged out. This will end the process.

In this simple manner the system will work and the documents gaining process will be very easy and in the efficient manner

without any chaos causing and without any lengthy procedures of the document gaining.

- User has no need to carry bunch of documents anywhere.
- Even if the document is lost, you can make it available easily.
- All the documents will be provided at a central place.
- The efforts of being in a queue and wait for the documents for a long period of time have been reduced.
- People from any part of the country can take advantage of this technology.
- It also saves lot paper resources which are also benefit able to the environment.

A. Software Requirements:

1) Windows/Linux operating system
2) Web Browser
3) WAMP server

B. B Hardware Requirements:

a) RFID reader
b) RFID tags
c) Good Internet Connection

VIII. CONCLUSION

The system proposes the cloud computing services using the RFID technology. It gives the commitment of increasing the computational speed and giving easy access towards the gaining of the documents. The main focus is to provide the easy way to access over the documents and make the process reliable for the public. By using the required approaches it has made possible to achieve the success of the project.

We have explained the system scope of our project and the possible way to implement the system model.

ACKNOWLEDGMENT

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