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Smart Card : A Single Card Solution for Multiple Activities

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ABSTRACT

The Smart Card technology is being applied in many industries. This technology can be used for multiple functions like analyzing the data of an individual person. The day to day transactions can be done using the smart cards. If the smart card is allocated to each and every existing citizen as well as newborn babies then what changes take place in the system/society is written further. This paper aims about the smart card implementation in a city, region or country which could bring a great change in the transactions and many more things which is further elaborated.

Keywords - National ID, Smart Card, Tax, Insurance, Hospital, Police Records.

I. INTRODUCTION

As the technology is developing on a daily basis there are many factors which are affecting the transactions done as well as many frauds and thefts are taking place. Smart cards are one of the technologies which can keep a track of all the things and can help in analyzing the data of an individual. The smart card is made up of a plastic card in which a microprocessor is embedded. This microprocessor can also be used to read, write, update and make changes in the data of the smart card. It can act as an access control device for accessing particular servers and transferring the data, for example: payments, hospital records, police records, etc. Smart cards ensure availability, security, convenience and data probability. Smart cards are of two types: contact smart cards and contact less smart cards. The main focus on the implementation of the smart card is further written in this paper.

II. CHALLENGES

1. Multiple government permissions, data and assets security.
2. Issuing smart cards to each and every individual citizen.
3. Security of the smart card's data.

III. METHODOLOGY

The smart card will need a device which will have a fingerprint scanner for authentication of a particular person. This device will be placed in an individual organisation for eg: hospital, which will only be able

to fetch and access all the data related to the hospital. This data will be accessed only if the individual person is authenticated using the smart card and fingerprint scanning. The data then would be able to validate, insert, update, delete the records of that particular person. Using that particular organization's device nobody would be able to fetch the data of other organizations, for eg: using a hospital's device, tax department's data will not be fetched.

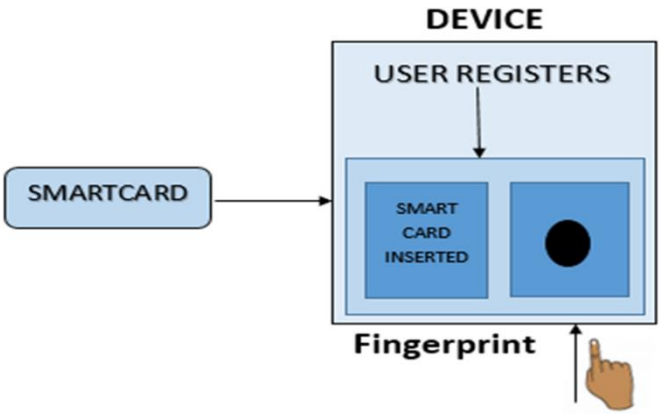

Fig.1. The smart card authentication device

IV. ALGORITHM

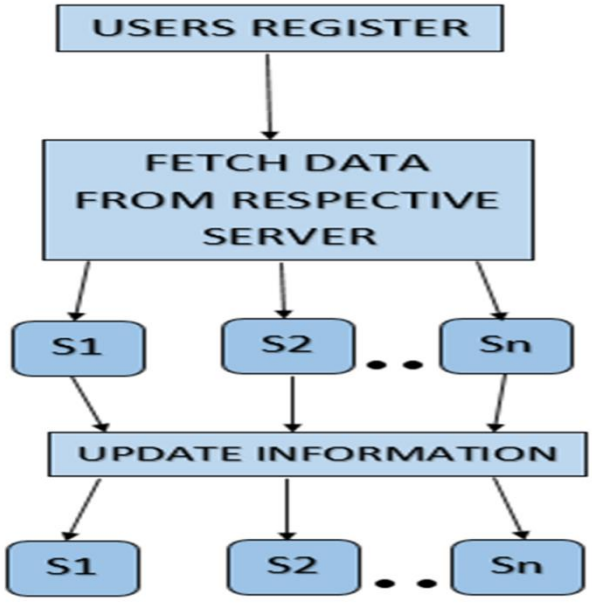

Fig.2. Algorithm for accessing the data of smart card users

V. IMPLEMENTATION IN HOSPITALS

If smart cards are used in hospitals for uploading each and every medical record then that would ease the process of the hospitals during new medical issues when any patient comes to the hospital. The medical history and the payment history for previous medical tests and treatment can all be tracked once the smart card of a particular person swiped in the hospital's system just like our atm cards.

VI. IMPLEMENTATION IN POLICE RECORDS

If any person goes to the police station for filing a complaint or if any person has any criminal records all the things can be tracked with a single smart card ID of that particular person. This would also speed up the police work rather than searching the documents of complaints then seeing the progress of it or any other paperwork task would be eliminated. This would be beneficial for all the police personnels as their time would be saved.

VII. IMPLEMENTATION IN RTO

Suppose that, if a particular person could be reminded of his/her fines from time to time for breaking the law while driving a vehicle or any other fines related to RTO by linking the smart card then it would save the late fees and also track the problem of unknown fines or any payment done but not received at the RTO sector which many times causes a problem afterwards to that person. Smart cards will also include the license information of particular vehicle types.

VIII. IMPLEMENTATION IN BANKING SECTOR

If the transactions which are done by UPI IDs are linked to the smart card of that particular person then the banking sector will not have any problems

tracking people who have taken loans from the bank and then got absconded.

IX. IMPLEMENTATION IN INCOME TAX DEPARTMENT

The tax department is nowadays working on how the black money would be minimized. If the daily transactions of every person is tracked as the smart card will be linked to the banks for payment purposes then it would be easier for the tax consultants to track every single penny.

X. IMPLEMENTATION IN INSURANCE COMPANIES

After the implementation in insurance companies the phase of work process of any insurance contract generation or insurance claim would speed up, as all things would be traceable by the smart card.

XI. BENEFITS

1. All data of a particular person would be linked.
2. High level of security would be provided.
3. Citizen's lots of paperwork will get eliminated which will save time.
4. Without smart cards/illegal duplicates would be traced.
5. Terrorists will be easily traced.
6. Jana Ganana (10 years) manpower will be needed.

XII.CONCLUSION

Smart card will be the solution for all the problems related to citizen identity and verification. Manpower, resources, money, time required for citizen identity in different Government/Private offices/organizations will be exponentially reduced. Illegal immigration/terrorist activities will be reduced because of the smart card project implementation.

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