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IOT “Smart ID CARD Using QR-Code”

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ABSTRACT: As the population growth is in race, people need to be recognized by using identity cards (ID).

The proposed system takes care of smart ID card to Grant a Chunk to be in the race of this smart era. Smart Id cards is the summary of Student's information.

Identity establishment necessitates a pre stored readily available data about self and to the administrator to authenticate it with claimer's personal information.

However, it has been observed that in most of the cases smart identity card solution has been preferred by a user and administrator both.

Here, we are discussing about the variability of smart card technology as an identify solution and its ability to perform various functions with strong access control that increases the reliability of smart card over other technologies.

The Smart Id card would contain the information of a student's personal details, student's account details, fees transaction details, library details, scanned copy of submitted documents to the college.

Smart Id card help us to overcome the manual work in a smarter way.

KEYWORDS: Smart card, Security, access control, Grant, Chunk, era.

I. INTRODUCTION

We live in the era where technological trends and advancement are making our life easier and smarter. To track the summary, manage official documents, transactions, staff or student smart card plays a major role. This work introduce a system embedded a QR-Code engraved on the card and a Smartphone App which will scan the QR-code and verify it. Keep a track on student's performance is a scan away these days. Calculating the attendance and sorting the data is still done manually. To pay exam fees or any fine we can use this card. Instead of using cash and various cards. It is way better to use a single multipurpose portable card.

Smart Identity Cards:

A smart card is a movable computer, its generally the size of a credit card, without having a display and a keyboard. Microprocessor, memory is integrated into the card. Its use in alliance with a contact or contactless card reader. It is a very familiar portable object with a rather long life - cycle(3-10years) and a light carbon footprint. These cards are used for ID cards, driving licenses, health cards and many more.

Smarts cards provide ways to securely identify and authenticate the holder. They provide a secure way to store the data and protect communication with encryption.

Smart cards provide:

- 1.Security
- 2.Confidentiality
- 3.Portability
- 4.Convenience

QR-Code (Quick Response):

A code that uses numeric, alphanumeric and byte/ binary encoding modes to store data which is easily accessed with smartphone or PC is QR -Code. In comparison with barcode QR -Code can aa store a lot more data. QR- Code codes are used to make payments, sharing a password protected Wi-Fi network, transferring money, sharing contact information, logging a website or much more. QR – Code can contain more information with fewer errors, it is easy to read and print.

It is more Secure.

QR – Code Scanner :

QR code can be scanned by any smartphone/PC/Laptop having webcam anytime at anywhere.

II. LITERATURE SURVEY

In 2014, Md. Sanaul Haque, Richard Dybowski proposed a system Advanced QR Code Based Identity Card: A New Era for Generating Student ID Card in Developing Countries. The project “Advanced QR coded Student ID Card Generation” is being created to decrease the effort of human as we know before people use the handwritten ID card. Now a days barcode is replaced by QR code. In this automated system the card generation process is completely done by the computer with the help of the software. The information of the students is stored in the database and by this time the student ID card can be provided by the administration. Hence, wastage of time is reduced and storing is suitable.[1]

In 2015, A.Surekha, Rubesh Anand, and I.Indu proposed a system of E-Payment Transactions Using Encrypted QR Codes. In earlier system, while any e - payments the customer needs to share the details of the card for further processing. In the proposed system , the information provided by the customer is minimized by providing minimal information. This is accomplished in the proposed design by the introduction of QR-Codes and application of virtual cryptography. This proposed system can be also used in E-tickets.[2]

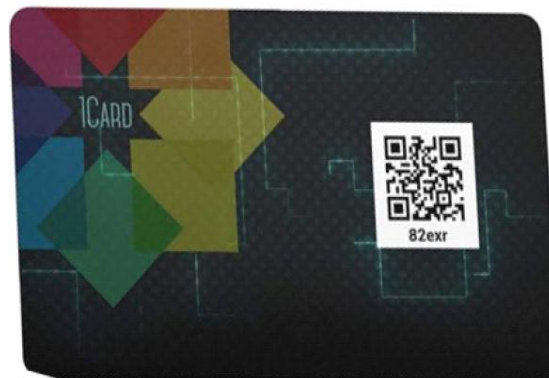
In 2016 Vassilya Uzun and Sami Bilgin proposed a paper with title Evaluation and implementation of QR Code Identity Tag system for Healthcare in Turkey. They designed a QR code identity tag system to integrate with healthcare system. Every patient had different QR code identity tag. These QR code contain detailed information of patient history. It can be wore as a bracelet, necklace or can be carried as an identity card. QR code scanner in any smartphone can be used to scan the code.[3]

In 2017, Emmanuel C. Ayeleso a*, Adebajo Adekiigbe a, Ndidi C. Onyeka a, Mathias O. Oladele b proposed a system identity Card Authentication System Using QR Code and Smartphone. In this paper, the author proposed a system where the students are given a identity card printed with a QR-Code on it and a Smartphone App which is used for authenticating the QR code. Keeping in mind the network issue this process is a offline process. In-built camera is used to recognize the embedded QR-Code. QR code has edge over RFID-based systems.[4]

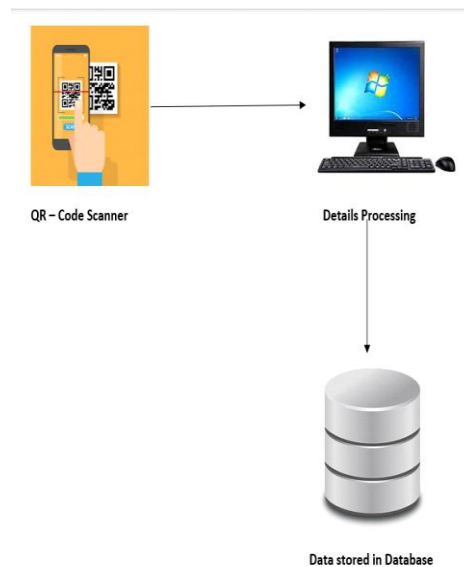
In 2018, Goh Khai Hong and Sharad Sinha proposed a system of tracking vulnerable people using body worn QR code. The QR-Code technology is in use in many medical facilities, mainly in Asia-Pacific domain, mostly for accessing and controlling patient related processes and data. A web and mobile application is developed and implemented for the public usage for customized QR code-based human-tracking. This is aesthetically appealing, more durable and much less intrusive compared to QR Code stickers. The rationale of selecting a hash function and a QR code type is also presented with sufficient technical analysis.[5]

III. PROBLEM STATEMENT

This project is developed to ease the work and save the time of staffs and students. A unique card is given to each student called "smart id card". This card is useful in admin section for knowing account details, Students personal information, Transaction details and attendance details.



Architecture of how the system works:



This paper proposes the system that, the details of the students is saved in the database. Various modules such as attendance system, fees transaction, etc are been look upon to overcome the manual work. A separate card with a personalised QR is been handled to the student when scanned the QR code a page with various modules will be generated. Whatever module' s worked is required he/she may carry on with further processing. As soon as we scan the QR code the system will send a pin for confirmation. If student wants to check his attendance or fees enquiry it is just a scan away and with a better and a smarter way. There are different login credentials for admin section and for student section.

Advantages Of QR code:

- 1)QR code can be scanned anytime, anywhere by using mobile phones.
- 2)It does not require an understanding of writing code.
- 3)QR code is almost free and inexpensive.
- 4)It is useful for customers, businesses, online transactions.

5) It is also used in URL or web address.

Disadvantages of QR code:

- 1) People are not familiar with this technology.
- 2) A phone with camera is must for QR code.
- 3) Users should be aware about correct reader software for scanning the image.
- 4) Smartphones used to scan QR codes are expensive and costly as compared to simpler phones.

Why QR code:

QR code is better than barcode because it can store more data which also includes URL links. Apart from that QR codes are more secure. Static QR codes are machine readable and content inside them cannot be changed once generated. While in dynamic QR- Code content can be changed, but we would need access to the user account that created them in the first place. QR codes can be used to give a unique identity to assets.

QR code used in:

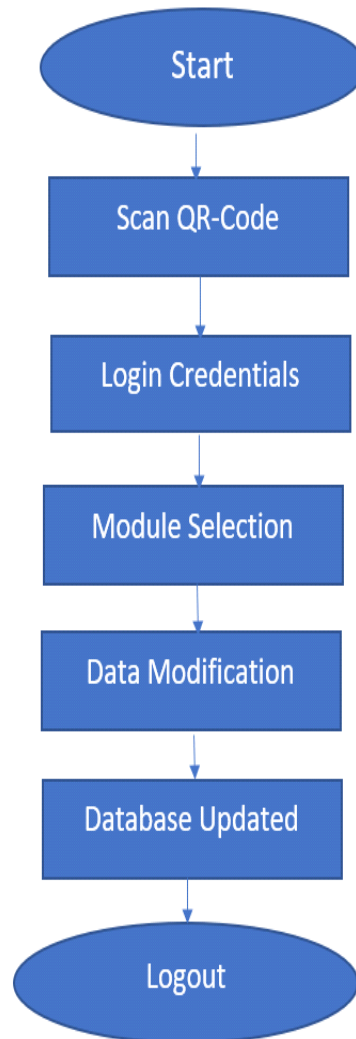
- 1) Id cards
- 2) Any product details.
- 3) Offer details.
- 4) Event details.
- 5) Competition details.
- 6) A coupon.
- 7) Twitter, facebook, whatsapp.

IV. FUTURE SCOPE

Healthcare:

Smart health cards are useful for storing patients various information like patients personal information, test reports, pharmaceuticals records, etc. It also helps us to improve privacy and security of patient' s data. Health cards help to reduce frauds in hospitals. Smart health cards help to simplify the administration process and allow doctors to access complete and comprehensive patient information.

System Flow Diagram:



In the above diagram, first swipe the smart card. After that fill the login details like username and password. Select the module as per own requirements. If we want to update any detail then update it in data updation step and logout from account.

The proposed system has been explained as follows:

Step 1: Start

Scan QR code based smart card.

Step 2: Login

Fill the login details.

Step 3: Module selection

Select the module as per requirement.

Step 4: Data updation

Update the details in selected module.

Step 5: Database updation

Database will be updated as per the updation that have been done in previous step.

Step 6: Logout.

Benefits of this system:

Typing a URL is time consuming and consumers make errors while typing. As compared to this scanning a QR code is much faster and error-free process for people. QR -codes can be easily scanned with any smartphone and it will show the respective information. QR -code in students id card is a secure way to access student 's information like payment details.

V. CONCLUSION

It is essential to keep up-to-date with latest technologies in education.by viewing all of the analysis the QR based smart identity card having features like it can store students personal information, students account details, payment and attendance details. QR code contain details information of student which can be scanned in a single second using the smartphone. Payment system can be easily update in each transaction and transactions are more secure with the help of QR code. QR -based smart id card is error-free, inexpensive and also reduces human stress.

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