iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** V **Month of publication:** May 2023

DOI: https://doi.org/10.22214/ijraset.2023.53317

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue V May 2023- Available at www.ijraset.com

Smart Way for Prescribing Medication

Girish Patil[1], Kartik Nillawar[2], Mohit Khatri[3], Sachin Shetkar[4], Snehal Shinde[5]
[1, 2, 3, 4]*Students,* [5]*Asst. Professor, Department of Information Technology Smt. Kashibai Navale College of Engineering, Pune, Maharashtra, India*

Abstract: ***This research addresses the implementation of digital signature technique for electronic prescription to prevent cybercrime problem such as robbery, modification and unauthorized access. In this research, RSA 2048-bit algorithm will be implemented in Java programming and android based system. Secure Electronic Prescription (SEP) application design is intended to combine given services, such as confidentiality, authentication, and non-repudiation. Cryptography is used to ensure the prescription file and QR-Code for detailed information on the prescription that have been given only for the pharmacist. The QR-Code will be encrypted using an asymmetric algorithm based on NIST Standard. In the application, there are two schemes, namely the protection schemes and verification scheme. This research uses black-box testing, and white-box testing to test input values, code and output without testing the process and design that occurs in the system. We demonstrate the implementation of cryptography in Secure Electronic Prescription (SEP). The implementation of digital signature in this research can prevent archive thievery which is shown on implementation and is proven on the test***
Keywords: Android, Digital prescription, QR-Code, Visual Studio

I. INTRODUCTION

An electronic prescription is a digital version of a paper prescription. During your consultation, your healthcare provider can send your electronic prescription to you as an SMS or email. All medicines can be prescribed using an electronic prescription. The message with a link to your electronic prescription is stored on your digital device, so you can access it whenever you're ready - saving you time, streamlining the process and improving medicine safety**.** The advent of the electronic-age and the internet brought about the use of computer-aided medical support such as, e-health, e-health record and e-prescription. With this information now available electronically, it makes it easier for eavesdroppers, hackers and other malicious attackers to access the confidential information. Connecting personal health information to the internet exposes this information to more hostile attacks compared to the paper-based medical records. Electronic prescribing is simply an electronic way to generate and transmit prescriptions and prescription related information using electronic media between a prescriber and dispensing pharmacy. Creating a versatile digital health platform is necessary for allowing a patient to choose with whom they share their goals, plan their optimal treatment schedule, and customize the amount of interaction necessary for an environment of ideal compliance. Users of such a platform could involve doctors, pharmacists, patient caregivers or family, or anyone agreed by the patient. It is important that patients control which individuals have access to their medical data. Our work in progress develops a smart phone application to act as a personal assistant for many patients in their quest for an ideal medication treatment experience. A goal is to create an application that can help patients to better manage their as needed medications.

II. LITERATURE SURVEY

Table 2.1: Literature Survey

Sr No.	Title of The Paper	Method	Results
1.	MohamadAli Sadikin,SeptiaUlfa Sunaringtyas. Implementing Digital Signature for the Secure Electronic Prescription Using QR-Code Based on Android Smartphone 2022	The QR-Code will be encrypted using an asymmetric algorithm based on NIST Standard	Black-box testing, and white box testing conducted to test software in terms of functional test input values, output and code
2.	Wee Pheng Goh, Xiaohui Tao, Ji Zhan. Exploring the Use of a Network Model in Drug Prescription Support for Dental Clinics 2021	Applying Model for personalised prescription support	This paper presents the use of a network model in the data-mining of bio-medical data within a three-tier framework, allowing easy updating of the knowledge

©IJRASET: All Rights are Reserved

			base and effective presentation of results to the user.
3.	Sraa Hassan, Habiba Tarek, Mai Hazem, Shaza Bahnacy Medical Prescription Recognition using Machine Learning 2022	Application that can actively recognise medical prescription images or scan them for subsequent conversion to digital text, accomplished by deploying deep learning techniques such as CNN, RNN, and LSTM for image recognition	The classification accuracy of 95% is obtained.
4.	Joseph Miles: Med Conformity: Enhance Adherence with Prescription Opioids 2020	Level of prescribing Communication with patient During Follow ups	Adherence awareness spread globally for prescription opioids.
5.	Insafh Ullah, Noor Ul Amin : A Lightweight and Secured Certificate-Based Proxy Signcryption (CB-PS) Scheme for E-Prescription Systems 2020	CP-BS techniques including seven algorithm and security analysis.	A security analysis, including formal security verification, is performed using the widely recognized AVISPA tool, and in the findings our proposed scheme shows significant immunity against adversary attacks

III. METHODOLOGY

A. Existing Methodology

Digital Prescription apps are present with no user friendly experience and no playful android view.
Provides no security.

B. System Architecture

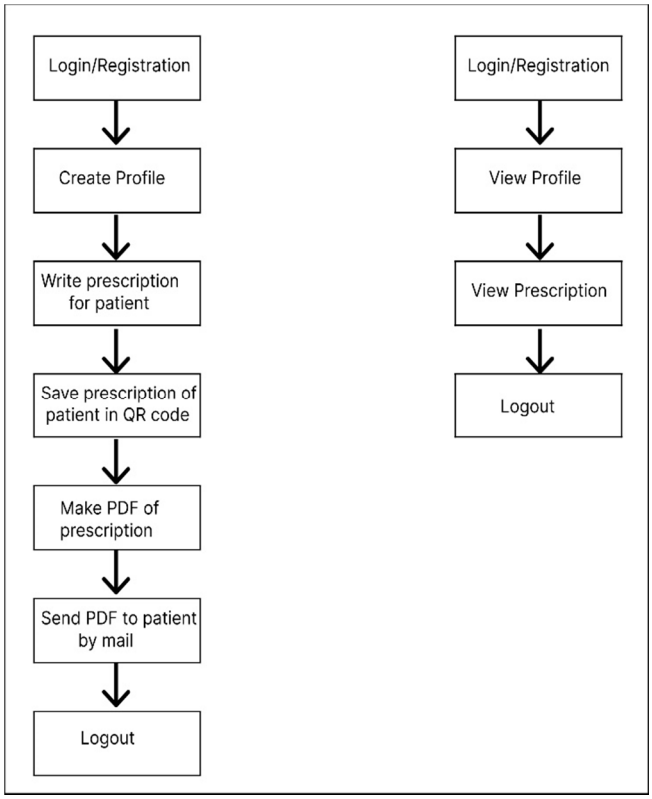


Figure 3.1 : System Architecture

C. Workflow of Application

Our app revolutionizes prescription management in the healthcare industry by providing a comprehensive digital solution for doctors and patients. It utilizes Java programming as the core codebase to develop robust and scalable functionalities.

Using Java programming, we have created a user-friendly interface for doctors, allowing them to securely log in and access the app's features. The app leverages Java's versatility and object-oriented nature to handle complex data structures and user interactions effectively.

Doctors can input patient information, medical history, and medication details through the app's intuitive interface. Java's rich libraries and frameworks enable efficient data processing, ensuring accurate and reliable prescription creation.

To facilitate seamless information exchange, the app generates a unique QR code for each prescription using Java programming. The QR code contains encoded medication details and dosage instructions, providing a convenient way to share prescription information digitally. Java's extensive support for image processing and encoding helps ensure the QR code's accuracy and reliability.

Additionally, the app automatically generates a PDF version of the prescription using Java's PDF libraries. Java's robust PDF generation capabilities enable the creation of professional and standardized prescription documents. These PDFs are securely stored within the app, allowing doctors to easily access and review past prescriptions.

Using Java programming, the app implements secure email delivery of the prescription PDFs to patients. Java's network libraries and email APIs enable seamless integration with email servers, ensuring the confidentiality and privacy of patient information during transmission.

On the patient side, Java programming enables the implementation of secure authentication protocols for logging in to the app. Java's cryptography libraries ensure secure storage and retrieval of patient data within the app, maintaining patient privacy.

With its use of Java programming, our app provides a reliable, scalable, and efficient solution for prescription management in the healthcare industry. The app's codebase leverages the power and flexibility of Java to deliver a seamless user experience for doctors and patients, while ensuring data security and privacy.

IV. RESULT

Below image shows the home page where there are five options : Prescription, Patient History, Prescription History, Generate QR code, Profile, Scan



Figure 4.1

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue V May 2023- Available at www.ijraset.com

Below is the image which shows by clicking on the first option 4.2. which shows the prescription given to the patient

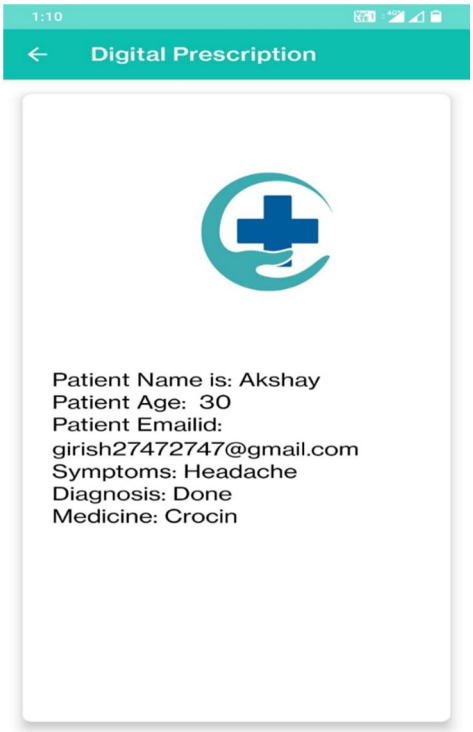


Figure 4.2

Doctor's Profile is shown in figure 4.3



Figure 4.3

By clicking on the generate QR code the Figure 4.4 image is displayed on the screen.



Figure 4.4

V. CONCLUSION

In this paper Although healthcare systems have been improved but a lot of systems still use the process of scanning the prescriptions manually and convert them into e-prescriptions. We've made this possible by letting the doctor prescribe through an android application either on a tablet/smartphone. Another accomplishment made in our system is the usage of IoT healthcare devices which are authenticated and stream and fetch the healthcare data through proper licensed and secure channels. The performance of system has been improved with the usage of these IoT devices in terms of response-times as well as automation. This provides an easier way to the users to interact with the system smartly. We evaluated our system which provides a direction to the automation and possibilities inside the healthcare industry via the use of multiple IoT devicess .E-prescription systems involve the computer-based electronic generation, transmission, and filling of a medical prescription that allows health practitioners (doctors, physicians, pharmacists, or nurses) to electronically transmit prescriptions to patient

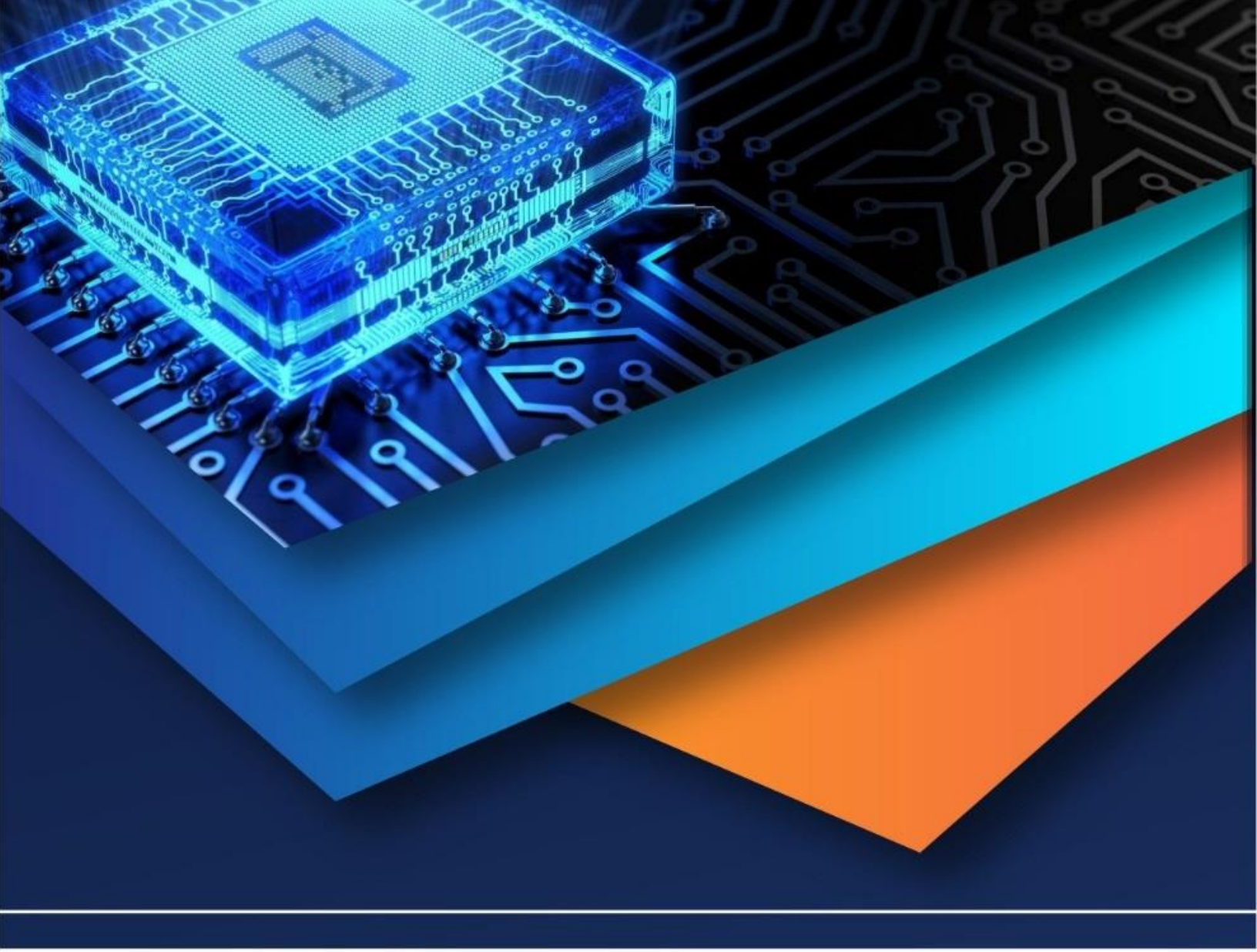
VI. ACKNOWLEDGEMENT

We are very thankful to all the teachers who have provided us valuable guidance towards the completion of this project work on "Smart Way for Prescribing Medication". We express our sincere gratitude towards cooperative department who has provided us with valuable assistance and requirements for the project work .We are very grateful and want to express our thanks to Prof. Snehal Shinde for guiding us in right manner, correcting our doubts by giving her time whenever we required, and providing her knowledge and experience in making this project work. We are also thankful to the HOD of our Information Technology department Dr. M. L. Bangare for his moral support and motivation which has encouraged us in making this project work. We are also thankful to our Principal Prof. Dr. A.V.Deshpande, who provided his constant support and motivation that made a significant contribution to the success of this project.

REFERENCES

[1] Cheng Xueqi, Jin Xiaolong, Wang Yuanzhuo, Guo Jiafeng, Zhang Tieying, Li Guojie. "A review of big data systems and analytical techniques". Journal of Software, 2014, pp. 1889-1908.
[2] Xu Jiayue, Lu Caiwu, Huang Yusen. "Comparative Research on the Application Field of Artificial Intelligence Based on Knowledge Graph at Home and Abroad". Journal of Central China Normal University (Natural Science Edition), 2020, pp. 301-312.
[3] Unknow, The third batch of decisions by the State Council on the cancellation of administrative licensing matters by the Central Committee of the Central Committee[J], The communique of the State Council of the People's Republic of China'2017(5):95-101.

[4] SHAO R, Wang M-Y, The problems and countermeasures of the online prescription drugs reimbursement in China : Based on the US Pharmacy Benefits Management model[J], Chinese Journal of Health Policy , 2016, 9(4):31-36.
[5] MO R, Reflections on Online Prescription Drug Sales in the "Internet Plus" Era[J], Capital Medecine Magazine, 2015,(14):16-18. [6] Fan R,Policy Obstacles and Exploration Paths of Electronic Prescriptions[J], CHINA HOSPITAL CEO, 2016,08:74-77
[6] R.D Garcia, e-prescription model using smart-contracts, 2021, [online] Available: https://github.prescription.
[7] E Lau, Decoding the hype: Blockchain in healthcare-a software architecture for the provision of a patient summary to overcome interoperability issues, 2018.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)