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# Smart Way of Prescribing Medication

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**Abstract:** *This research deals with Implementation of digital signature technology for e-prescription to avoid cybercrime problems such as Theft, modification, unauthorized access, etc. In this research, 2048-bit RSA algorithm will be implemented in Java programming and Android based system. The design of the Secure Electronic Prescription (SEP) application is to combine given services such as confidentiality, authentication and non-repudiation. The Secure Electronic Prescription (SEP)application is intended to combine specific services such as confidentiality, authentication and non-repudiation. prescription details issued to pharmacists only are used to secure encrypted prescriptions and QR codes. There are two schemes in the application namely protection schemes and authentication scheme. This study uses black-box and white-box testing to test input values, code, and outputs without testing the processes and designs occurring in the system. Demonstrate implementation of encryption in Secure Electronic Prescription (SEP). The implementation of a digital signatures in this study can prevent archive theft, which is shown in the implementation and proven in the test.*

**Keywords:** Secure Electronic Prescription

## I. INTRODUCTION

An electronic prescription is the digital version of a paper prescription. During a appointment, a healthcare provider may send an electronic prescription to her text her message or email. All medicines can be prescribed electronically. A message containing a link to your electronic prescription will be stored on your digital device, allowing you to access at any time. Save time, simplify processes and improve drug safety

The electronic prescription system is a mechanism that has long been in place in many countries around the world. In this study, for accuracy, we reviewed e-prescription system requirements, standards, and features and accurate implementation.

E-Prescription's ability to view all previous patient prescription records with a single click is one of its key benefits. Prescribers are informed by systemic warnings regarding allergies, possible drug interactions, pregnancy and other conditions that would make the use of a particular drug inappropriate for treatment.

Objective is to make the system paperless. We present our system for protecting patient privacy data, describe how we implemented it in python. To provide security to database. Improved Patient Safety and Quality of Patient Care. To give QR code development of bar code authentication

## II. LITERATURE SURVEY

Implementing Digital Signature for the Secure Electronic Prescription Using QR-Code Based on Android Smartphone [1], 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.

Med Conformity: Enhance Adherence with Prescription Opioids [2] definesA person dies in America approximately every 16 minutes from opioid overdose. It is estimated that one in four patients receiving long-term opioid therapy in a primary care setting struggles with opioid addiction.

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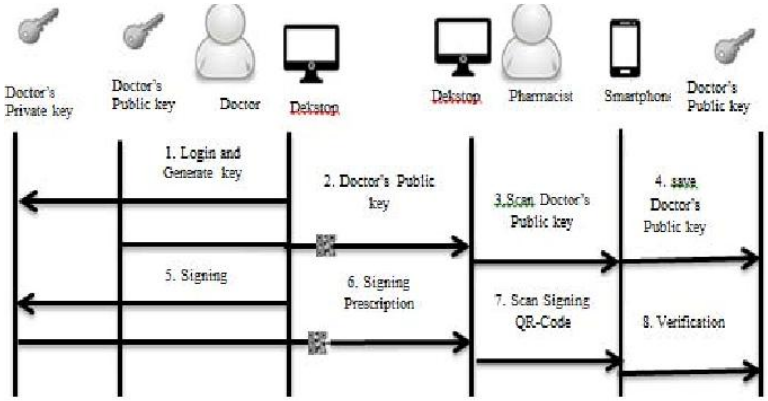


**Figure 1:** Courtesy[1]

Medication non- adherence causes unfavorable healthcare outcomes and raises healthcare costs through increased service utilization. Developing a digital health application to run on a smartphone is an inexpensive solution for addressing medication non-adherence. Objective data captured on a digital device can facilitate better communication between patients and their providers.

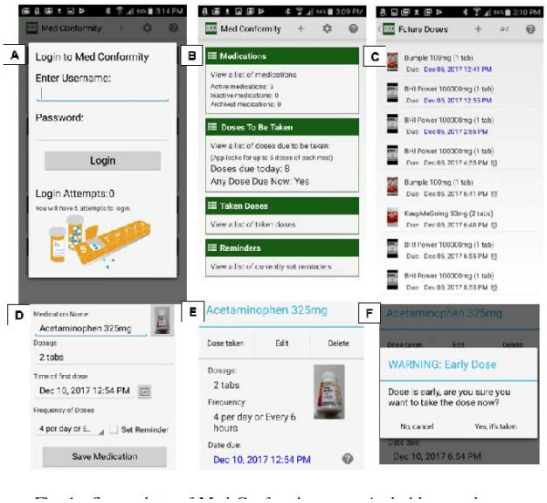


**Figure 2:** Courtesy[2]

A Lightweight and Secured Certificate-Based Proxy Signcryption (CB-PS) Scheme for E-Prescription Systems [3] states that The classification of "local climate zones" (LCZs) emerged in urban climatology to standardize description of urban climate research sites. One of the goals of classification was to get beyond urban-rural dichotomy which enabled to study urban air temperature field in more detail.

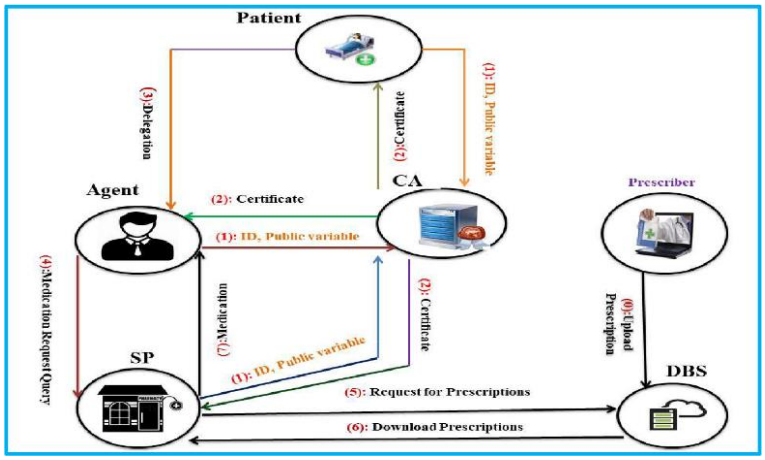


**Figure 3:** Courtesy[3]

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Based on empirical and modelling work LCZ have proven effective in examining interurban air temperature differences, however a robust examination of intra-urban land surface temperatures using the LCZ framework remains elusive. In this study a GIS-based method is used for LCZ delimitation in Prague and Brno (Czech Republic), while land surface temperatures (LSTs) derived from LANDSAT and ASTER satellite data are employed for exploring the extent to which LCZ classes discriminate with respect to LSTs. Results indicate that LCZs demonstrate the features typical of LST variability, and thus typical surface temperatures differ significantly among most LCZs. ANOVA and subsequent multiple comparison tests demonstrated that significant temperature differences between the various LCZs prevail in both cities.

Exploring the Use of a Network Model in Drug Prescription Support for Dental Clinics [4] defines with more patients taking multiple medications and the increasing digital availability of diagnostic data such as treatment notes and x-ray images, the importance of decision support systems to help dentists in their treatment planning cannot be over emphasized. Based on the hypothesis that a higher similarity ratio between drugs in a drug-pair indicates that the combination of the drug-pair has a higher chance of an adverse interaction, this paper describes an efficient approach in extracting feature vectors from the drugs in a drug-pair to compute the similarity ratio between them. The feature vectors are obtained through a network model where the information of the drugs are represented as nodes and the relationships between them represented as edges.

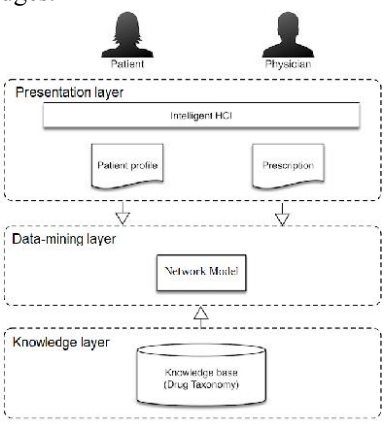


**Figure 4:** Courtesy[4]

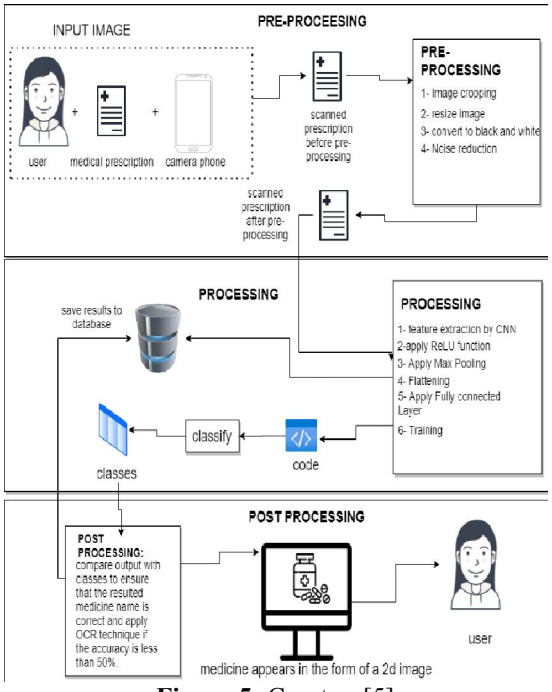


**Figure 5:** Courtesy[5]

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Medical Prescription Recognition using Machine Learning [5] conveys that admittedly, because of how busy doctors are nowadays, they tend to scribble unreadable prescribed medicines which leads to the problem of misinterpreting medicine names. Patients are sometimes curious to know information about their prescribed medicines before purchasing them. Recently, developers have been searching for a method to address this problem efficiently but, no technique leads to full recognition of medicine names due to the bad handwriting of doctors and its variety so that leads us to machine learning where the system will learn various types of handwritings for the same medicine to be able to recognize new handwritings. This paper proposed a system that presents a solution for both the pharmacist and the patient through a mobile application that recognizes handwritten medicine names and returns a readable digital text of the medicine and its dose. The System identifies the medicines' names and the doses for the collected data set with some, pre-processing techniques like image subtraction, noise reduction, and image resizing.

## III. PROPOSED METHODOLOGY

### 3.1 Limitations

The systems proposed by surveyed papers have certain limitations.

- Chatbots but no proper GUI and not user friendly.
- Security issues- Drug related medicine prescription can be tampered.
- Digital prescription apps are generally single domain.

### 3.2 Proposed System

- Chatbots but with proper GUI and user friendly and added functionality.
- Security issues will be solved like Drug related medicine prescription cannot be tampered.
- QR-Code System for saving patients health history
- Prescription will be mailed to the patient..

## IV. CONCLUSION

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.

Although healthcare systems have been improved but a lot of systems still use the process of scanning prescriptions manually and converting them into e-prescriptions. We've made this possible by letting the doctor prescribe through an android application either on a tablet/smartphone.

## REFERENCES

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