MEDICAL CERTIFICATION GENERATION AND VERIFICATION

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ABSTRACT

In the medical field, the creation and verification of health certificates are very crucial for users which involve insurance, taxes, filing litigation, compensation, etc. The creation and use of health certificates are problematic and risky basically from relying on not transparent and not auditable paper processes that heavily affect users' experience. This article proposes the mobile application which works as a good record authenticity for health certificate. Utilizing Flutter, CodeIgniter4 and MySQL as the technologies, the application is designed to be a user-friendly and safe platform that can be used to simplify the processes. Medical certification process being the main target, the app is intended to make the process more efficient and reliable by eliminating mistakes which are performed manually and thus providing instant verification. Further consider, the value of physicians who do not possess the medical certificate is also included. Therefore, the app is a tool for medical personnel and individuals to obtain accurate and reliable health certificate data which corresponds to changing user requirements.

Keywords: Flutter, Codeigniter4, Mobile Application, Medical Certification, Health Certificate.

I. INTRODUCTION

At present lots of big problems are faced in the generation and verification of medical certificate because of the inefficient or problematic old method for generating and verifying a medical certificate. The reason could be experienced professionals have to rely upon the manual and paper based method creating medical document. The present paper introduces the medical certificate generation and verification mobile application working on the Flutter, CodeIgniter4 and MySQL platforms in a general way. The primary aim of this application is to build a user-friendly and secure platform for generating and checking Certificates Medical error and to replace completely the ineffective and error-some process of generation and verification of medical certificates. As per World Health Organization, around forty percent of doctors in India have no formal training. A medical certificate is the write-up given by a qualified medical doctor which confirms a person’s medical condition. This certificate is used as a proof of injury or sickness for many purposes that include an insurance claim, legal process, work and school leaves, or compensation. Healthcare workers perform the medical report issuance responsibility.

II. PROPOSED SYSTEM

The proposed system mainly emphasise on authentication process by using CodeIgniter4 for backend, Flutter for frontend development and MySQL for database, it also includes user authentication by using OTP. The mobile application for medical certification generation and verification is able to generate encrypted unique id for each medical certificates which gives strength to verify the medical documents and also prevents from unauthorized and duplication of certificates. In addition, professionals of healthcare are required to register through mobile application using a valid registration id provided by the government. Verification of the registration id is conducted during the registration process, if the registration id of healthcare professionals is invalid, then the healthcare professionals is unable to register. Using encrypted unique id and verification of doctor’s id during the registration process will add an extra layer of security which prevents from unauthorized access. The combination of all the technologies mentioned above are taken which provides a secure and user-friendly and transparent platform for medical certification generation and verification.
Iterative Waterfall Model

In the proposed system, the development strategy is chosen to be iterative waterfall model, which is a software development methodology which combines the principles of waterfall model and iterative development. Classical waterfall model is an idealistic model. Iterative waterfall made necessary changes to the classical waterfall model so that it becomes applicable to practical software development project. The main change was in the form of providing feedback path from every phase to its preceding phases. The feedback path allows for correction of errors committed during a phase as and when these are detected in a later phase. Iterative waterfall model starts from the feasibility stage which includes technical, economical, operational and requirements are gathered from the user followed by the design phase in which developer create a design to fulfil the requirement of the user. After that application has been tested, deployed and verified to ensure its function correctly, and made available for use by the user. In this approach, the process of development is separated into different stages which involves: requirements, design, implementation, testing, deployment, and maintenance and also enabling some degree of flexibility and adaptation during the development process. This can help in addressing changes and improvements as the project progresses.

Flutter

Flutter is an open-source framework, used by developers to build mobile applications for multiple platforms like Android, iOS, etc., from a single codebase. Flutter employs dart programming language introduced by Google as well as provides a large set of customizable widgets to implement a highly responsive UI. The most important benefit of utilizing flutter is its quick development cycle that significantly speeds up the process of iterating on a design. IT is the creation of Google.

CodeIgniter4

CodeIgniter4 is open source PHP framework which is used for building application rapidly. CodeIgniter4 based on Model-View-Controller(MVC) pattern, in which Model represents data structure, View is information that is being presented to user. The controller act as a bridge between model and view. Frameworks runs according to their own set of conventions, standard and file structure to enhance the management of project flow and files. CodeIgniter4 framework provides a built-in security features like Cross-Site Request Forgery(CSRF) protection, encryption, XSS filtering, etc. which helps developer to build a secure application. In CodeIgniter4 different type of libraries available which helps to complete the important task such as session management, form validation, database manipulation, etc. CodeIgniter4 plays a vital role in this project by handling the backend development including API development, database interaction, logic implementation, etc.

IV. WORKFLOW

Data Flow Diagram
FLOWCHART

Fig 2: Flowchart

V. RESULT

User Interface

Fig 3(A): Splash Screen

Fig 3(B): Option Screen

Fig 3(C): Doctor Login Screen
Fig. 3(D): Doctor Dashboard

Fig. 3(E): Medical Certificate Screen

Fig. 3(F): Patient Login Screen

Fig. 3(G): Patient Dashboard

Fig. 3(H): Issued Screen

Fig. 3(I): Download Certificate

Fig 3(J): Guest Dashboard

Fig 3(K): Verify Screen
VI. CONCLUSION

Mobile application development for the digitization, management, and authentication of health records involves a major action towards improving the effectiveness, the convenience, and the security of healthcare documentation systems. Through the use of robust technologies such as Flutter, CodeIgniter4 and MySQL, the application gives the users a strong and friendly platform where they can efficiently request and verify the medical certificates for themselves. By adapting the functionalities to fulfil the needs of doctor, patient, and guest, the mobile application simplifies the process of generation, verification and management of medical certificates.

This mobile application provides the ability to generate, authenticate and download the certificates directly by the mobile application improves the accessibility and also ensuring the integrity of healthcare documentation In addition, the implementation of security elements including encrypted and stand-alone identifiers in conjunction with OTP verification adds to the reliability and trustworthiness of the application ensuring confidential health information storage while protecting user privacy.

The mobile application we have developed is a high level breakthrough in health technology and has addressed the main problems associated with health certificate management and verification, which is a convenient and secure solution that healthcare professionals and patients will certainly enjoy. In addition to this, healthcare evolution will continue to require advanced technology solutions and innovations which will affect the quality of medical treatment and patient experience.

VII. REFERENCES


