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ijircce@gmail.com



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Secure Notes- Fingerprint Secured Notes Application

Siddhesh Revankar, Ralston Dcruz, Ayush A. Singh, Ayush S. Singh, Kashif Shaikh

Department of Computer Engineering, Thakur Polytechnic, Mumbai, Maharashtra, India

ABSTRACT: Notepad has become a major necessity as it compels people to become more deliberate in organisation and presentation of their data. Due to rise in cybercrimes, securing the confidential data on digital platforms has become a necessity. For this reason, our Fingerprint secured notepad helps you store your sensitive data securely on your mobile device. The identification provided by biometric technologies is extremely accurate and hence guarantees secure access to sensitive information.

Fingerprint security system focuses on feature extraction and minutiae matching stage. There are many matching techniques used for fingerprint recognition systems such as minutiae based matching, pattern based matching, Correlation based matching, and image based matching. Two fingerprint recognition regimes have been developed based on minutiae matching, the first one is: Artificial Neural Network based on Minutiae Distance Vector (ANN-MDV), while the other one is: Artificial Neural Network based on Principle Component Analysis (ANN-PCA). It is observed that the recognition rate is increased and return better result. A comparative study between the 2-developed system is done based on average recognition time (ART), and the accuracy of the recognition system. The experimental results are done on FVC2002 database. These results show that the accuracy of ANN-MDV system is approximately equal to 91%, and the accuracy of ANN-PCA system is approximately equal to 98%. Therefore ANN-PCA is the best recognition system accuracy. Also the experimental results show that ART for ANN-MDV (equal to 0.251) is slightly better than ANN-PCA (equal to 0.275).

I. INTRODUCTION

a. Fingerprint Security:

Fingerprint is one of the popular and widely used biometric security systems. Biometric security systems use the physical or biological traits of human beings for recognition and authentication purposes. Since biological traits are much better in performances and are much more reliable as compared to passwords, pincodes, voice recognition, biometric security is becoming more and more popular and is here to stay.

The fingerprint system is a popular biometric system and actively researched area in biometric technologies. The fact that every person has a unique stamp of fingerprints helped the system to become "A much needed system". It is a low cost system as compared with others, e.g., iris and face recognition systems. It is also less intrusive of privacy as some people may not like their pictures be taken or speak into a microphone.

A fingerprint scanner is a type of technology that identifies and authenticates the fingerprints of an individual in order to grant or deny access to a computer system, application, any digital service or a physical facility. It is a type of biometric security technology that utilizes the combination of hardware and software techniques to identify the fingerprint scans of an individual.



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b. Secured Notes Application:

Notepad is a basic text editor. It is excellent for writing relatively short text documents that you want to save as plain text. However, that's not all you can do with it. If you have not used Notepad much, or ever, you may be surprised by how easy it is to work with. Regular notes are fine, or that the notes app on your phone does the trick. But did you ever stop to consider what would happen if those notes were lost or stolen? We tend to write down the most sensitive information without thinking too much about it. But there are some things you should keep away from prying eyes.

II. PROPOSED SYSTEM

A useful notes application is an essential component of any computer/smartphone. Different companies and people use different types of notepads. And there are slight variations in these applications, but they all perform the same function of editing and viewing a text file.

Features of Notepad are: Easy to use: A notepad is simple, handy, fast and accurate tool for storing a text file. This means that users can use this app in any situation where quick viewing and editing is needed. Offers speedy operations: Accuracy and speed are very crucial. It is reliable: The reliability of Notepad cannot be questioned since it is fingerprint secured. It can be used for any type of text files: With a notepad, you can view an edit any type of text file on your computers or smartphones. The use of Java helps to keep the information and restore it easily. Apart from this, it has security manager that defines the access of classes.

Partially the input fingerprint image maybe noisy and corrupted due to environmental factors or body condition of the user. So that it is very important to do some pre-processing steps on the input fingerprint image in order to improve the clarity of ridge structure and increase the performance of minutiae extraction algorithm. Therefore, the main purpose of pre-processing stage is to enhance and prepare the input fingerprint image for next stage.

III. LITERATURE REVIEW

Every day we need to make notes, compose document, and record vital pieces of information. In existing system multiple tabbed opening feature is not available. We cannot change background colour and foreground colour of text editor as per users' choice. Existing system is not user friendly because user cannot customize software. But there are some features in notepad like open file, save file, edit, font, cut, copy, paste, find, etc. It can be used by anyone for viewing and editing a text file. It is a user friendly application.

Fingerprint recognition is to distinguish between two human fingerprints. In order to match two fingerprints, several features of the print pattern are required including ridges and minutia points. Ridges contain three basic patterns which are arch, loop and whorl. Fingerprint recognition has become one of the most important and popular identification technique nowadays because of the accuracy of this technique is very high and the current fingerprint recognition system is sufficient for the identification and verification system that involve more than hundred users.

In Fingerprint Recognition System, there are three sub-domains, which are enrolment, verification and identification. Enrolment is the process which the user's fingerprint data will be collected via a specific sensor and store into database after some processing. In verification mode, a captured fingerprint will be compared to the template stored in the database to validate a person's identify. This is so call one-to-one comparison. The purpose of verification is to prevent different person using the same identify.

III. OBJECTIVE

The main objective was to study Java programming in android studio by developing a fingerprint secured notes application. A notes saving application is a computer/smartphone program that lets a user enter, change, store, and view notes, which is also secured by biometric security.

The main objective of creating notepad was to understand some basic notepad functions in Java. We were curious to learn how we could implement security features to a common notes application. The biometric fingerprint security was

the main subject of operation and then adding some new features to the notes application. This helped us to understand object oriented Java. It also helped us to understand the way of using fingerprint scanner in our mobile phones and its complexity.

V. LIMITATIONS

Despite the advances in note-taking apps, many students still prefer the familiar feel of taking notes on paper. Traditional paper-based notetaking also has the advantage of being less prone to technical failures than tablets and phones. According to many sources, handwritten note-taking is more helpful in the committing of material to memory than typing. Specific limitations of the note-taking apps that were reviewed can also impede adoption, specifically the difficulties with collaboration and transferring notes taken within these apps. Some of the features within the apps were also found to not be available without an internet connection. Students may also be discouraged from using these apps due to the overwhelming number of note-taking apps available and their varied functionality.

Limitations of Fingerprint Scanner:

- The system has inability to enrol some users.
- The accuracy and working of system is affected by skin conditions of people.
- The authentication system only recognizes traits that were entered and fail to recognize the user if their physical traits change even the slightest. Here are a few reasons why traits might change:
- A burnt or damaged finger
- Tattooed hands

VI. CONCLUSION

Most vital use of fingerprint biometric security is to secure the sensitive data that we cannot afford to get leaked. With taking notes digitally being more efficient than the traditional pen and paper, we need a way to make sure our digital data is highly secured. Thus the biometric fingerprint security is the most efficient solution to making sure our data is secured on our devices.

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