BIOMETRIC MECHANISM FOR ENHANCED SECURITY OF ONLINE TRANSACTION ON ANDROID SYSTEM

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INTRODUCTION

- Secured e-banking on the mobile is the latest issue for all mobile users.
- The use of biometrics has virtually eliminated the possibility of someone gaining access to a third party cell phone directly.
- Biometrically secured mobile payment system is safe and very easy to use.
- No need to remember passwords and secret codes.
- It is important that the biometric identification templates are not certainly stored on the phone but are gathered at run time.
- This is required to prevent the loss of personal information through the theft of the cell phone.
Biometric Authentication

- Biometrics identify people by measuring
  - some aspect of individual anatomy or physiology (e.g. hand geometry or fingerprint)
  - some deeply ingrained skill, or other behavioural characteristic (e.g. handwritten signature)
  - something that is a combination of the two (e.g. voice)

- A biometric system is essentially a pattern recognition system that operates as follows:
  - Acquire biometric data from an individual
  - Extract a feature set from the acquired data
  - Compare this feature set against the template set in the database.

- Biometric authentication technologies such as face, finger, hand, iris, and speaker recognition are commercially available today and are already in use.
BIOMETRIC AUTHENTICATION

- Depending on the context, a biometric system may operate in
  - verification mode: the system validates a person’s identity by comparing the captured biometric data with his/her own biometric template(s) stored in system’s database. It conducts a one-to-one comparison.
  - identification mode: the system recognizes an individual by searching the templates of all the users in the database for a match. It conducts a one-to-many comparison.

- In order to be used for recognizing a person, the human trait needs to be unique and not subject to change.
FINGERPRINTS

- Fingerprints uses the pattern of friction ridges and valleys on an individual’s fingertips.
- These patterns are considered unique to a specific individual.
- A user does not need to type password, instead, only a touch to a fingerprint device provides almost instant access.
- In the proposed system the designed application need not have mobile with scanner.
- A digital image captured by its 3 pixel camera can be used for authentication of an individual.
- The collected raw fingerprint image is pre processed, and the features are extracted and stored.
FINGERPRINTS (CONTD.)

- Pre-processing is an important step prior to fingerprint feature extraction.
- Process of pre-processing encompasses segmentation, enhancement, and core point detection.
- The captured fingerprint image which is in RGB format is first converted to gray scale.
- This gray scale image is input to the normalization process.
- Finger print segmentation is done to eliminate the undesired background and reduce the size of the input data.
- Contour technique is used to find the region of interest, and then the Core point detection method is applied.
PROPOSED SYSTEM

- A payment application is installed onto an android device, to take authentication finger print at run time.
- The finger print template is captured by the phone and is encrypted using the RSA algorithm.
- The fingerprint template is sent it to the host server (i.e. Bank) and compared against a stored template on a database server.
- If it is matches then only login will be successful and user can do the transaction.
PROPOSED SYSTEM

Biometric Mechanism for enhanced Security of Online Transaction
Proposed System

Biometric Mechanism for enhanced Security of Online Transaction
CONCLUSION

- The design approach for Biometric Mechanism for enhanced Security of Online Transaction on Android system has been proposed.
- Run time fingerprints are captured for mobile transaction; it is not stored already in the mobile device so it provides more security and cannot get stolen by third party.
- Authentication request and reply are in the encrypted form. This makes the system secure against man in the middle attack.
REFERENCES

Thank You