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Secured Netbanking Using Minutiae Methodm

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ABSTRACT

The main objective of this project is to avoid hacking process in an on-line banking sector by using finger print recognition technique. Minutiae is the most effective method in which the finger prints are extracted in the form of points and it can be viewed in the two dimensional plane. These finger prints are stored in the data base and then each user is provided with the unique id as OTP using random number generation algorithm. The unique id is sent to the user's personnel e-mail id. During the net banking process the user id is encrypted and decrypted using triple DES and MD5 algorithms. In which each key has 56 bit and it can encrypt and decrypt each block which has 64 bit of data. After the key pair generation the given finger print is verified then the most secured transaction can be made. These transactions are maintained in log and updated immediately by the administrator

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Key words: OTP- One TimePassword , DES – Data Encryption Standard , MD5 – Message digest.

INTRODUCTION

Pattern recognition is used to make inferences based on data. There are two divisions in pattern recognition they are classification and regression. The collected classification problems are labled with discrete class lables. The regression problem data labels are typically continuous values, not categorical.It is said that each thief has his own patterns. When we see a human being, we perceive a member of the same class of pattern. The body pattern of human beings has not changed since millions of years. But pattern of computers and other machines continuously change.Because of the fixed pattern of human bodies, the work of medical doctors is easier compared to the work of engineers who deal with machines whose patterns continuously change.

FINGERPRINT RECOGNITION

A fingerprint recognition can be used to provide the biometric security using the thumb impression, which is obtained from the finger print reader. The finger print is characterized by ridges and valleys. They often run in parallel sometimes they overlap and terminate. The finger print recognition is loop, delta, and whorl. The patterns of an individual's fingertips are unique to that individual. Finger print recognition is done by classifying and determining identity by matching key points of ridge endings and bifurcations. Fingerprints will be unique for the identical twins. The commercially available fingerprint recognition technology devices for desktop and laptop access are now widely available. Fingerprint systems can also be used in identification mode. Fingerprints are the ridge and furrow patterns on the tip of the finger and have been used extensively for personal identification of people.

MINUTIAE METHOD

Minutia refers to flow of ridges in the finger print that can be discontinuous. Minutiae are essentially terminations and bifurcations of the ridge lines that constitute a fingerprint pattern although several types of minutiae can be considered, usually only a coarse classification is adopted to deal with the practical difficulty in automatically discerning the different types with high accuracy. At a very fine level ,intra ridge details can be detected. It

detects the position and shape of the finger spores in an effective manner. However, extracting pores is feasible only on high resolution fingerprint images (e.g. 1000 DPI) of good quality fingerprint image. This is the most popular and widely used technique for the fingerprint comparison in bio metric researches..

ALGORITHMS

MD 5(Message-Digest)

The MD5 Message-Digest Algorithm is a widely used cryptographic hash function that produces a 128-bit that is16-byte hash value. An MD5 hash is created by taking a string of an any length and encoding it into a 128-bit fingerprint. Encoding the obtained string using the MD5 algorithm will always result in the same 128-bit hash output.

Triple DES (Data Encryption Standard)

The DES encryption algorithm that encrypts data three times using 64-bit keys, instead of one, for an overall key length of 192 bits in which the first encryption is again encrypted with second key, and the resulting cipher text is again encrypted using the third key

5 METHODOLOGY

5.1 Finger Print Enrollment:

Fingerprint enrollment is a process of registering user's bio-metric data for verification purposes. The quality of the fingerprint enrollment is essential for the performance of the matching algorithm. The number of false rejects is very much dependent on the quality of the enrolled fingerprint template.

Fig 5.1 Online banking webpage

Fig 5.2 finger print Enrollment