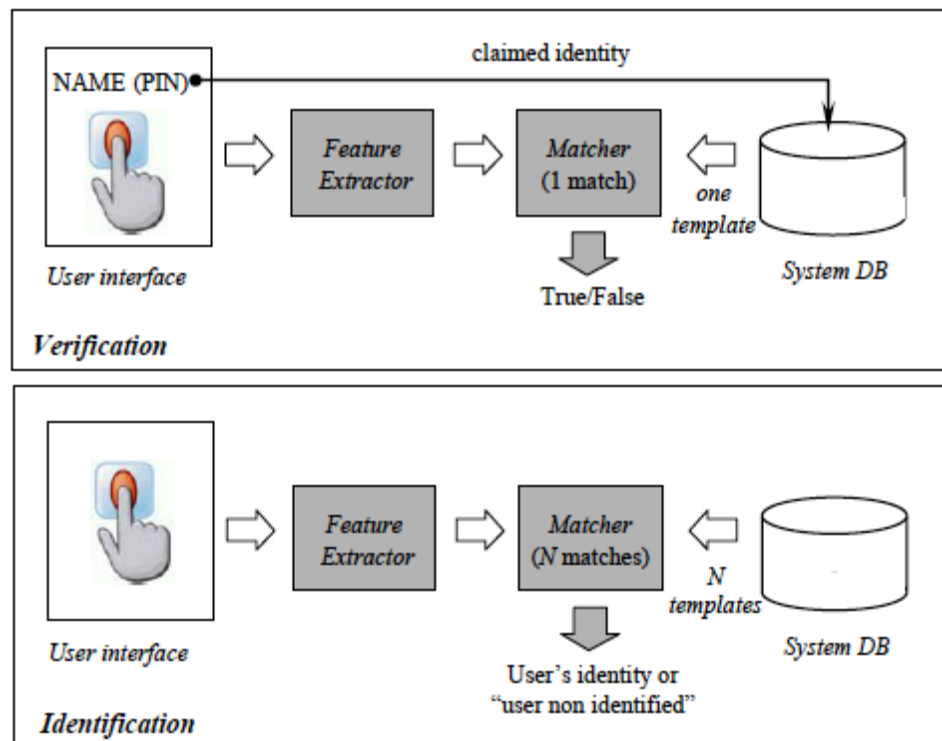


A SECURE BIO-METRIC FINGERPRINT RECOGNITION

FINGERPRINT RECOGNITION PROCESS

The fingerprint recognition problem can be grouped into two sub-domains: one is fingerprint verification and the other is fingerprint identification



With the increase in security concerns worldwide and for increase in efficiency of existing systems, it becomes vital to owe a procedure that can overcome situations like fraud, fake identity etc. A wide variety of systems require reliable personal recognition schemes to either confirm or determine the identity of an individual requesting their services. The purpose of such schemes is to ensure that the rendered services are accessed only by a legitimate user, and not anyone else. Examples of such applications include secure access to buildings, computer systems, laptops, cellular phones and ATMs. In the absence of robust personal recognition schemes, these systems are vulnerable to the wiles of an impostor. Due to this, Biometrics nowadays has acquired its own importance. Biometric recognition, or simply biometrics, refers to the automatic recognition of individuals based on their physiological and/or behavioural

characteristics. By using biometrics it is possible to confirm or establish an individual's identity based on "who she is", rather than by "what she possesses" (e.g., an ID card) or "what she remembers" (e.g., a password). In this dissertation, fingerprint as a biometric is chosen to ensure the recognition process. Human fingerprints are rich in details called minutiae, which can be used as identification marks for fingerprint verification. The goal of this project is to develop a complete system for fingerprint verification through extracting and matching minutiae. To achieve good minutiae extraction in fingerprints with varying quality, pre-processing in form of edge detection and binarization is first applied on fingerprints before they are evaluated. Many methods have been combined to build a minutia extractor and a minutia matcher.

CLASSIFICATION OF BIOMETRICS:

