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Traffic Police App

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Abstract **---** Fingerprints square measure made in details that square measure within the kind of discontinuities in ridges called trivialities and square measure distinctive for every person[5]. one amongst the foremost necessary tasks considering associate degree automatic fingerprint recognition system is that the trivialities biometric pattern extraction from the captured image of the fingerprint. The fingerprint marriage broker compares options by victimisation Digital Image process from input search purpose against all acceptable driving licences within the info to work out if a probable match exists. With this implementation, therell be no ought to carry documents on. one fingerprint and a picture are enough to acknowledge and verify the individual and also the vehicle. Mobile platforms like smart-phones and pill computers have earned the technological capability to perform tasks on the far side their meant functions. The steady increase of process power has enticed researches to try more and more difficult tasks on mobile devices with acceptable modifications over their stationary counterparts. during this work we have a tendency to describe main options of software system modules developed for humanoid smartphones that square measure employed by RTO officers for licence and vehicle documents verification. during this project we have a tendency to use biometric approach like fingerprints and vehicle variety plates for verification

Keywords- *Fingerprint authentication, Cygwin tool, Bozorth3, Biometric*

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I. INTRODUCTION

Fingerprints area unit wealthy in details that area unit within the style of discontinuities in ridges called trivia and area unit distinctive for every person[5]. One in every of the foremost necessary tasks considering associate degree automatic fingerprint recognition system is that the trivia biometric pattern extraction from the captured image of the fingerprint. The office system uses a trivia primarily based marriage broker to demonstrate a persons' identity[2]. Firstly, the trivia detection algorithmic program depends on binarization of every grayscale input image so as to find all trivia points. The fingerprint marriage broker compares options by mistreatment Digital Image process from input search purpose against all acceptable driving licenses within the information to see if a probable match exists. With this implementation, therell be no ought to carry documents on. Mo- gall platforms like smart-phones and pill computers have earned the technological capability to perform tasks on the far side their supposed functions. during this project we have a tendency to describe main options of code modules developed for golem sensible phones that area unit employed by RTO officers for license and vehicle documents verification. during this project we have a tendency to conjointly use multithreading for thumb recognition and automatic deduction of fine.

The traffic police use a manual method for supportive documents of an individual. However, individuals got to face several issues with the present procedure employed by the police for supportive documents of an individual. per the general public purpose of read there's no facility provided by RTO which is able to build the person document free. the most drawback with the prevailing system is that either individuals got to carry their documents or charge account credit however there's chance that the data may drift. In finger print recognition technique biometric identification is predicated on distinctive characteristics of the human fingerprint. A fingerprint image is browse from a fingerprint recognition device then options area unit extracted from the image mistreatment Bozorth3 algorithmic[2] program and also the concerning info is extracted from information. once the match is found police can get all the detail info regarding vehicle on his golem application. nowadays golem devices play a vital role in our day to day life since most of the tasks are often done on golem device. Since the individuals got to carry documents concerning the data of the vehicle, the police similarly as individuals got to face several issues. so the traffic police app not solely reduces the task of the police however conjointly makes the person document free.

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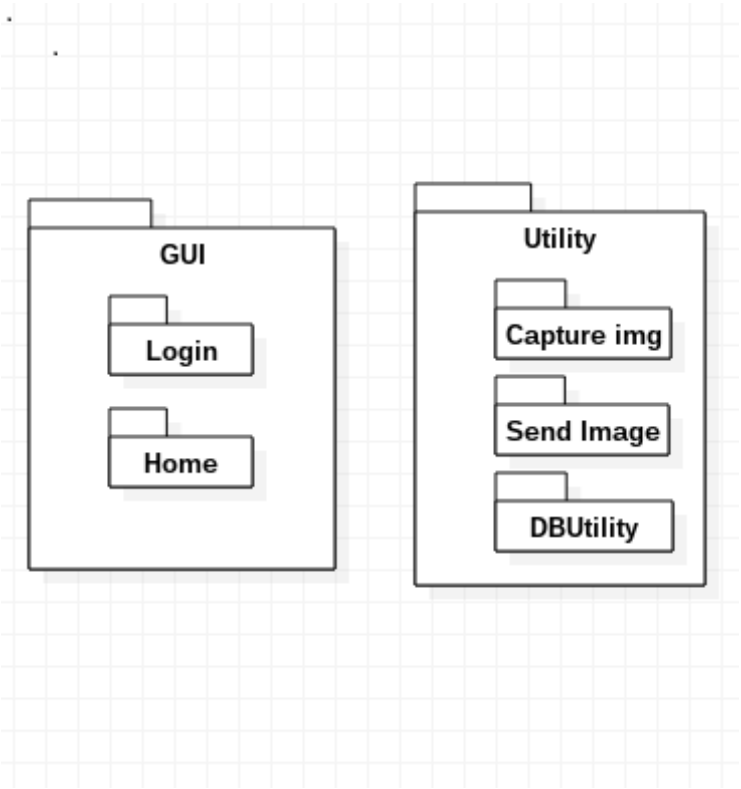
II.PROPOSED SYSTEM

In Proposed system consists the fingerprint recognition technique. The fingerprint recognition technique will help to identify whether the person is authorized to drive the vehicle or not. Also after getting caught the person will be fined. The fine will be deducted automatically from the person's bank account. As far as the security is concerned, the traffic police have whole control of the system and data is fetched from the secure RTO server. Thus by all means the system is secure and safe to use and also user friendly.



Advantages:-

1. Protect sensitive information.
2. Easy to use and handle.
3. This system will help in increasing the robustness and speed of the RTO system.
4. All Make digitalize documentation and no need to carry document.
5. Saving paper.
6. It will also increase efficiency in procedure related to vehicle burglary

III. SYSTEM ARCHITECTURE

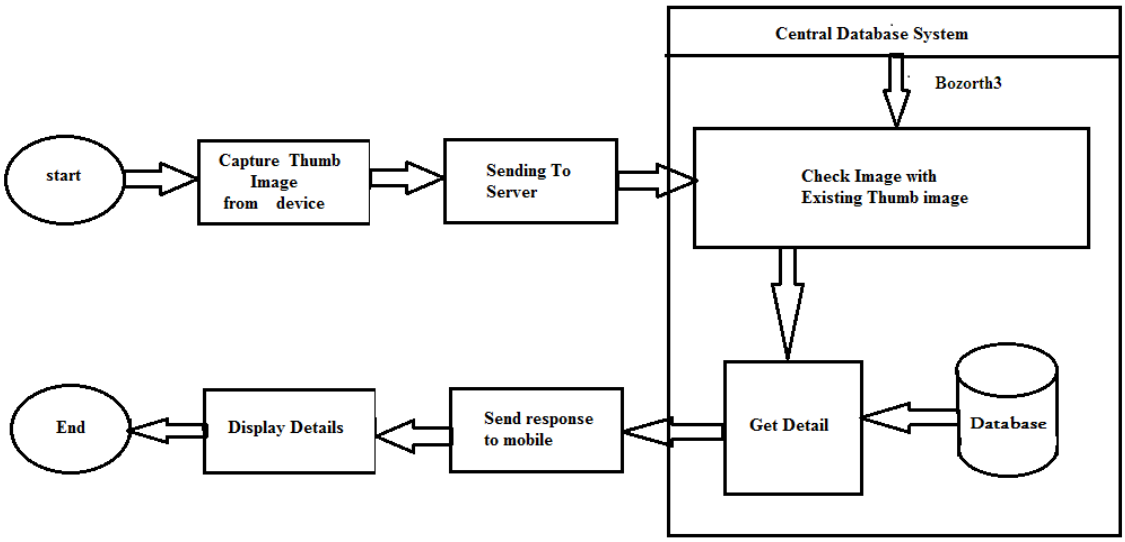


Figure 1. System Architecture

In this system working of RTO system making efficient, first fingerprint image is read from a fingerprint recognition device then features are extracted from the image using Bozorth3 algorithm and the regarding information is extracted from database. After the match is found police will get all the detail information about vehicle on his android application.

The fingerprint recognition technique will help to identify whether the person is authorized to drive the vehicle or not. Also after getting caught the person will be fined. The fine will be deducted automatically from the persons bank account. As far as the security is concerned, the traffic police have whole control of the system and data is fetched from the secure RTO server.Thus by all means the system is secure and safe to use and also user friendly.

IV.METHODOLOGY

User Module:

1. System activation after the user logs into the system .

2. The thumb impression of the driver will be captured and sent to the server

3. After getting details from the system, fine will be applied by the user System Module.

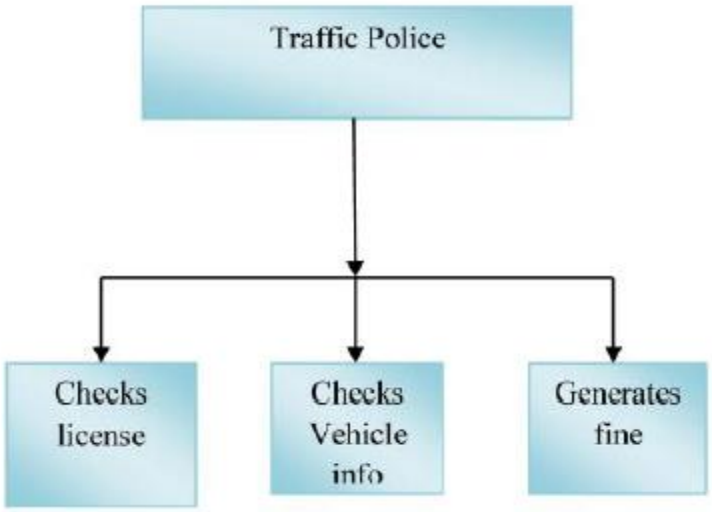
i) Calculation of Matchscore for the input image .

ii) Details to be sent to the user .

iii) Automatic Fine deduction from the drivers account.

Police Module:

This module mainly provide the information to the traffic police officer such information like checks licence , vehicle information, check updated document, generate fine by using simple android application.



V. BOZORTH3 MATCHING ALGORITHM

Fingerprint Matching Using the BOZORTH3 Algorithm. If two fingerprints are from same finger,use BOZORTH3 matching algorithm for computes a match score.This matcher uses only the location and orientation of the minutia points to match the fingerprints. It is rotation and translation invariant.

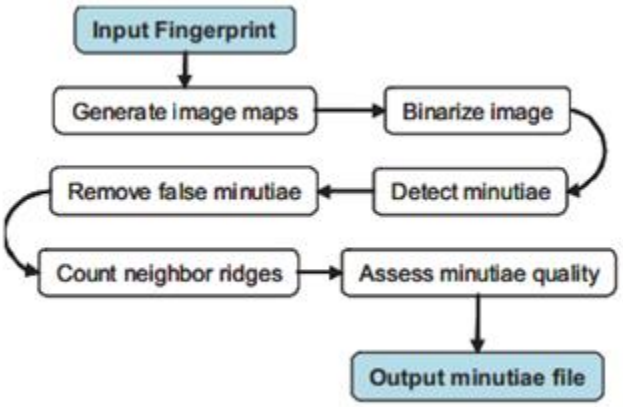
The algorithm can be described by the following three steps:

a) Construction of two IntraFingerprint Minutia Comparison Tables, one table for each of the two fingerprints;

b) Table for construction of an InterFingerprint Compatibility ; and

c) Use the InterFingerprint Compatibility Table for generate the matching score.

These steps are described in Figure. The first step is to compute relative measurements from each minutia in a fingerprint to all other minutia in the same fingerprint. These relative measurements are stored.



To provide the rotation and translation invariance used IntraFingerprint Minutia Comparison Table . The invariant measurements computed are the distance between two minutiae and angle between each minutia's orientation and the inter- vening line between both minutiae. For each of two fingerprints comparison table is constructed. The next step is to take the IntraFingerprint Minutia Comparison Tables from the two fingerprints and look for "compatible" entries between the two tables. Table en- tries are "compatible" if: a) the corresponding distances and b) the relative minutia angles are within a specified tolerance. An InterFingerprint Compatibility Table is generated, only including entries that are compatible. A compatibility table entry therefore incorporates two pairs of minutia, one pair from the template fingerprint and one pair from the test fingerprint. The entry into the compatibility table indi- cates that the minutiae pair of the template fingerprint corresponds to the minutiae pair of the test fingerprint. At the end of the second step, we have constructed a compatibility table that consists of a list of compatibility associations between two pairs of potentially cor- responding minutiae. These associations represent single links in a compatibility graph. The matching algorithm then traverses and links table entries into clusters, combining compatible clusters and accumulating a match score. The larger the num- ber of linked compatibility

associations, the higher the match score, and the more likely the two fingerprints originate from the same person.

VI. MATHEMATICAL MODEL

System Description:

Let S is the Whole System Consist of

S :{ s, e, X, Y, C }

where,

s : Start of Process.

e : End of Process.

X : Input of the program.

I :{ Login,Thumb scan image }

Login :{ username,password

Thumb scan image :{Thumb scan image1,Thumb scan image2 ,.....,Thumb Scan Image n }

Username : { Username1, Username2,.....,Username n }

Password : { Password1, Password2,.....,Password n }

Y : Output of the program.

Y : {Documents }

Documents : {Documents1,Documents2,.....,Documents n }

Constraints C : f{C1, C2 }

Where,

C1 : Image quality should be good during capturing of thumb scan from the device.

C2 : Client Machine and Server should always be connected.

VII.ADVANTAGES

i) The algorithm is easy to use and implement.

ii) Small storage space required for biometric template. Remove unwanted regions. Region of interest is extracted as per needed.

VIII.RESULT AND DISCUSSIONS

The traffic police use a manual process for verifying documents of a person. However, People have to face many problems with the current procedure used by the police for verifying documents of a person. According to the public point of view there is no facility provided by RTO which will make the person document free existing system is that either people have to carry their documents or smart card but there is possibility that the information might get lost.

In this work we describe main features of software modules developed for Android smartphones that are used by RTO officers for licence and vehicle documents verification. In this project we use biometric approach like fingerprints. A fingerprint image is read from a fingerprint recognition device then features are extracted from the image using Bozorth3 algorithm and the regarding information is extracted from database. After the match is found police will get all the detail information about vehicle on his android application. Thus the proposed traffic police app not only reduces the task of the police but also makes the person document free.

IX.CONCLUSION AND FUTURE SCOPE

The higher than implementation was an endeavor to grasp however Fingerprint Recognition is employed as a sort of biometric to acknowledge identities of mortals. It includes all the stages from trivia extraction from fingerprints to trivia matching that generates a match score. numerous customary techniques are employed in the intermediate stages of process. the normal fingerprint recognition system takes longer for recognition due to preprocessing and post process steps of pictures and therefore become impractical. we have a tendency to perform matching between mean fingerprint and alternative templates (FVC 2004 DB4 information, that has poor-quality fingerprints) to point out the aptitude of the system.

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