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Implementation Of Biometric Vaccine Covid-19

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Abstract: Immunization against COVID-19 has been an integral part for government health services in India. In developing countries, current vaccination status of COVID-19 is recorded in a paper, which is ineffective in many ways: information which may go missing, process of looking up data is tedious. The main objective of proposed work is to use biometric traits (fingerprint) of a person to store their vaccination schedule details, thereby automating the vaccination schedule for the user. Biometrics traits are used since fingerprint of user have great potential to accurately record immunizations and helps greatly in efficiently searching the data. The proposed method aims at developing an application which provides to alerts on a regular basis to parents and Accredited Social Health Activist (ASHA) workers based on the stored vaccination schedule information

Index Terms- Arduino, Finger Print Device, Processor(Core 2 Duo)

I. INTRODUCTION

A centralized system to monitor vaccination coverage of each child by providing relevant notifications to health care centers, thereby increasing the coverage of vaccinations.

The size of the fingerprint does not have any influence in fingerprint recognition system. The major concern of a fingerprint is with the image quality, we will be using machine learning algorithm to increase the accuracy of fingerprint up to 98%.

Fingerprint enrollment is done after the first vaccination cycle where images are collected. The features are extracted and saved as templates in database.

During each vaccination phase, the fingerprint data stored in the database is updated if there is a visible growth in the ridge distance.

To identify the person who have taken two doses so that it can help authority to validate the use of public resource.

II. LITERATURE SURVEY

Title: Fingerprint enhancement by directional Fourier filtering

Author name: Sherlock, Barry G., D. M. Monro, and K. Millard.

Description: A child is considered fully vaccinated only if vaccinated with one dose of Bacillus Calmette-Guérin (BCG) and measles vaccine,three doses of pentavalent and oral polio vaccine with the right dosage and boosters at the right age and interval[1]

Title: A taxonomy for texture description and identification

Author name: Rao, A. Ravishankar

Description: Efforts to increase vaccination coverage in the country needs to focus on educating the commons about the vaccination schedule and strengthening supervision by implementing a better Monitoring system to ensure that every child is vaccinated at right age and interval. Achieving high vaccination rates has been one the greatest challenges in developing countries. Periodic estimation of vaccination coverage is done to monitor the progress in achieving these targets. About 16 percent of children who received one dose of BCG and 13 percent of children who received first dose of DPT did not complete the full course of vaccination

Title: FVC2004: Third fingerprint verification competition

Author name: Maio, Dario.

Description: The vaccination analysis of infant includes 108,057 children in which the estimated proportions of fully vaccinated, under- vaccinated, and non-vaccinated children were 57%, 31%, and 12%, respectively.

Title: A systematic approach for feature extraction in fingerprint images

Author name: Chikkerur, Sharat, Chaohang Wu, and VenuGovindaraju

Description: Children may behave differently during the enrolment process as compared to adults. This is simply due to the lack of understanding of the process and also because of their children specific attitude. This can be classified as less cooperative while keeping in mind the main objective to obtain fingerprint images of respectable quality. Fingers of children grow at the same rate as the rest of the body. The time period between the enrolment process and the sample fingerprint image collected during the vaccination to be compared could be long enough to prohibit smooth matching. It is not known, to what extent this growth effect becomes relevant for the matching process and whether algorithms will take this effect into account.

III. PROBLEM DEFINITION

Technology of identification and verification on unique physiological and behavioural characteristics includes following biometric traits fingerprints, palm geometry, iris, dental root morphology. Commercial applications also started using biometric application in which finger print is widely used. Fingerprint authentication involves identification of unique pattern which is used for recognition.

IV. ARCHITECTURE DIAGRAM

Admin Login:

When admin will install the software, in case he wants to register user with vaccine admin need to login.

User Registration: user if already taken first dose than it will show due date for next dose. If not than it will ask to fill form and save. Once Save it will mark fingerprint as first dose complete.

User Verification: This software will install in public places user should have put the fingerprint if he has taken both dose than door will be open automatically.

Open Door: If verification is success than open the door.

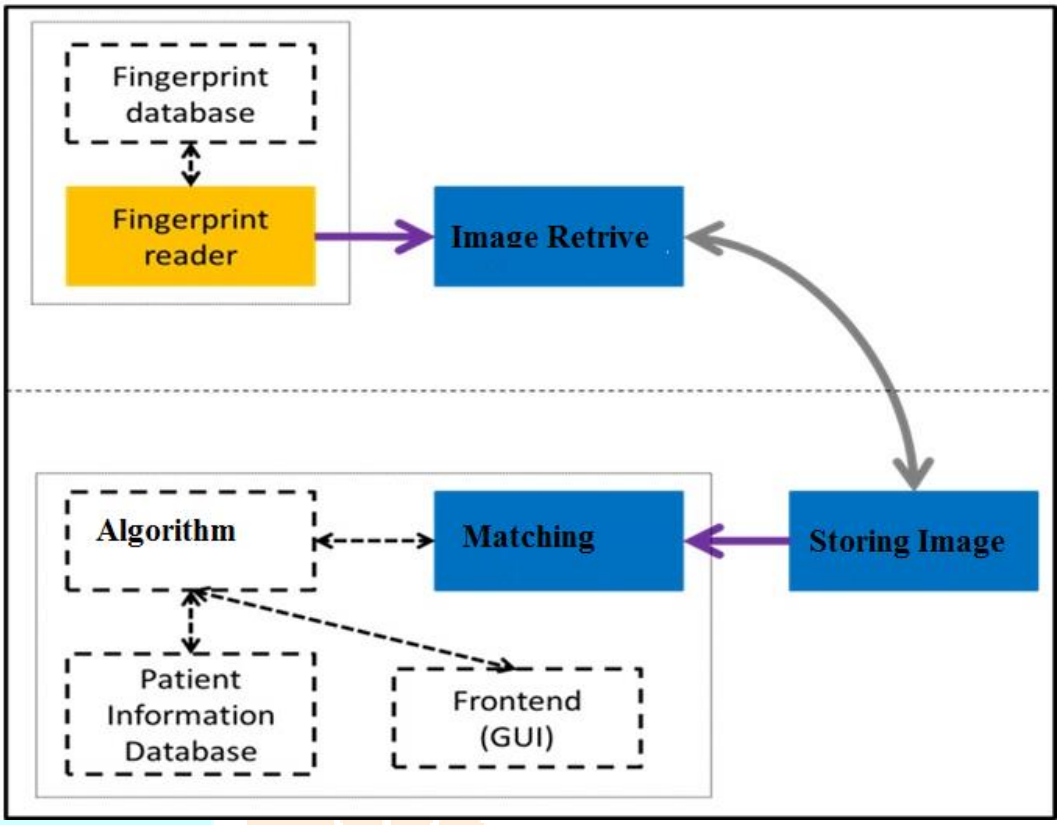


Fig 1. Architecture Diagram

V. MODULE DESCRIPTION

Fingerprint Identification Process

At first, since the fingerprint

Next, **extract the features** and prepare feature set

Then**, pre-select and match** the features with n number of templates

If a match, identify person's ID and store in database

Fingerprint Enrolment Process

At first, capture the fingerprints

Next, extract the features and prepare feature set

Then, create a template and store the data in the database

Fingerprint Verification Process

At first, acquire the fingerprint

Next, abstract the features and prepare the feature set

Then, check whether the feature set match with one template

If a match, then claim the particular user ID is true and store in the database

Feature Extraction

It collects important features of fingerprints from pre-processed input

Acquisition of Images from Sensor

It senses the biometric information like a fingerprint for registration and recognition

Pre-processing

It eliminates undesirable and noisy data for more clarity on ridge structure

It uses image pre-processing and enhancement approaches

Feature Extraction

It collects important features of fingerprints from pre-processed input

Matching

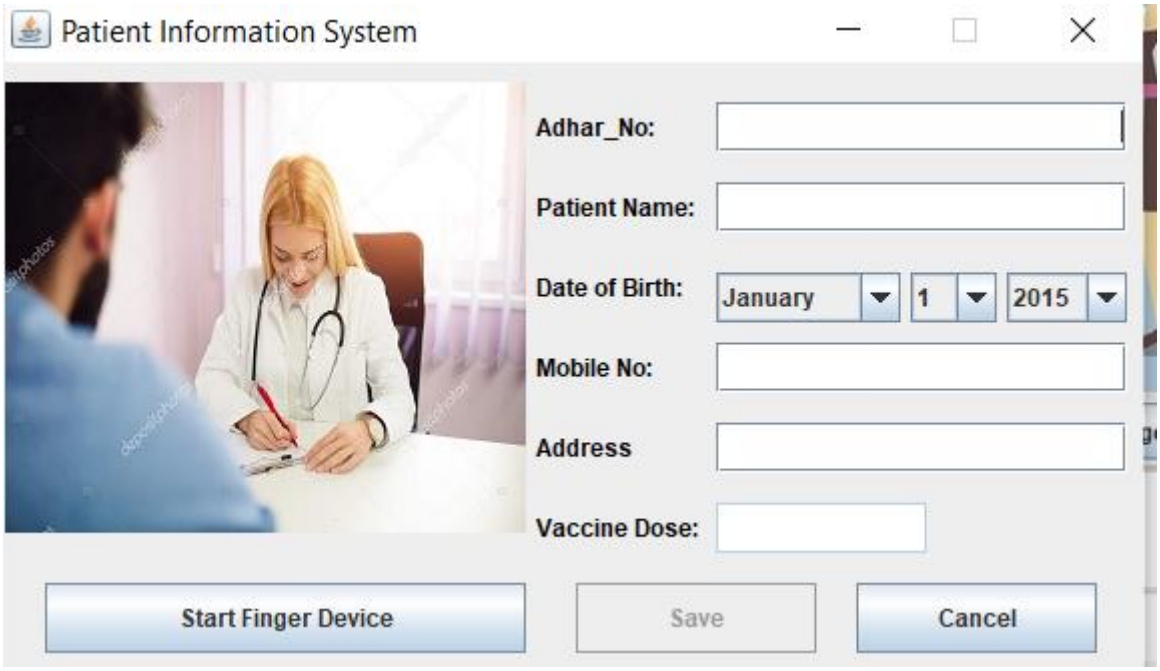
It matches the collected unique features with stored data (template) in the database

VI. RESULT

Admin Login:

Options:

Registration:



VII. CONCLUSION

We have implemented a Biometric Vaccine for Covid-19 project and it will be a beneficial and easy to use project which can help to detect unvaccinated people.

VIII. REFERENCE

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