SMART VISITANTS ACCESS AND DATA COLLECTION USING OCR

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ABSTRACT:

In the era of digital world, paper and pen are so primitive to store data and in the other hand, providing manual access to visitants in many places require large human resources and data verification reduce the latency of the access to that particular place. The project comprises of data collection part, data identification and providing access to the visitant. Initially data is collected for a new visitant based on the identity card provided by the law enforcement of India and the data is stored in the website using a XML servers. If a registered visitant arrives, the visitant will present the identity card to the camera. The camera will be mapped to the website. The website consist of SQL database to store the data. The visitor's access is also providing using algorithm of OCR and various preprocessing methods.

KEYWORDS: Face detection, Face recognition, open CV, Optical Character Recognition (OCR)

I.INTRODUCTION

The main scope of our project is to provide both planned and unplanned guests while they are visiting your facility will help greatly in reducing risks and providing enhanced security. A visitor management system is efficient enough to provide security in the entire premise. By using a solution that allows your visitors to pre-register their visit and enter all the relevant details at the time of pre-registration, you can quickly process their details pertaining to the visit. This ensures quick check-in process when the visitor arrives at the security gate. It also maintains records of all the materials visitor is carrying and his ID-proof for security purpose. Staying abreast with the visitor database is important to mark frequent visitors.

To avoid entry of the same user details every time and save time, visitor management keeps database of past visitors. This helps creation of visitor pass quickly, as the security person is simply required to retrieve the visitor information from the past records, eliminate the need of reentering the data in the process. To enhance visitor management security, visitor dashboard shows current status of all the visitors. Another major benefit of having automated visitor management system is that admin or security can generate reports in different formats. They can generate reports of visitor punch details, pre-registered visitors, visitor access denied, enrollment status etc.

OBJECTIVE OF THE STUDY

The purpose of this paper is to use high end optical character recognition which includes Tesseract, Open computer vision 3.0, matlab for cross correlation to provide the visitant easier access to the particular place using national I'd provided by law enforcement of India. Most of the data entries are takes place by the manual process.

II.PROBLEM STATEMENT AND PRELIMINARIES

Many advanced technologies have been discovered in order to reduce the manual data entry, but still they are fail to overcome such issues. The following steps are followed for the manual entry process they are: receiving the document, understanding the meaning, preparing for data entry, entering the data and finally checking for the accuracy. This leads to increase the time and it's inevitably prone to error. Globally as much as 90% of data extraction and data entry still occurs manually. In 2019, only 55 billion of the world's 550 billion invoices were exchanged on a paperless basis. The remaining 90% would required at least some level of manual processing. In order to avoid these entries we design a smart visitant's access and data collection using OCR, the proposed system providing more flexibility of managing their records and securing homes or workplaces and for operating gates without physical interactions of the owner.
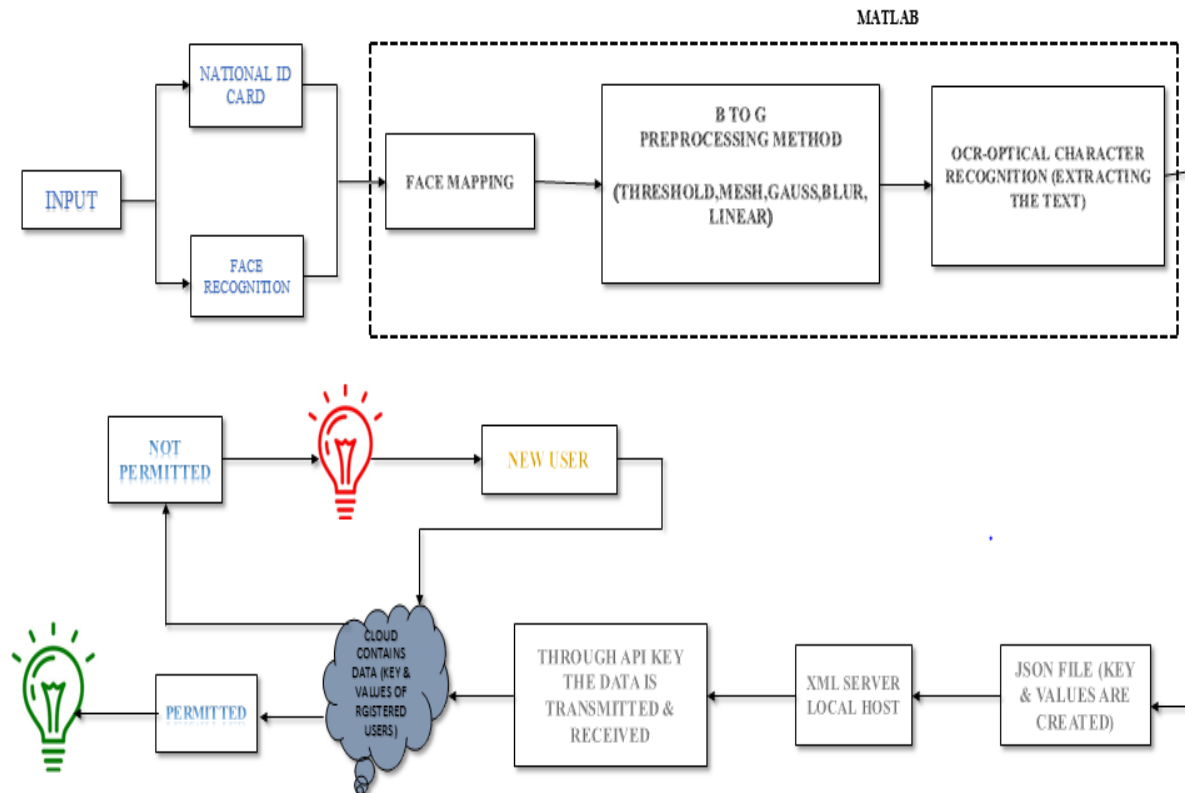
Fig 1 Block Diagram of Proposed System

PROGRAM ANALYSIS FOR IMPLEMENTING PROGRAM

Here we are using sypder python software to implement a program in order to store and access the data of the visitors and the hardware Raspberry pi is used. The Raspberry pi is a low cost, credit- card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. It is capable little device that enables people of all ages to explore computing, and to learn to program in languages. An SD card inserted into the slot on the board acts as the hard drive for the Raspberry pi. It is powered by USB and the video output can be hooked up to a traditional RCA TV set, a more modern monitor ,or even a TV using the HDMI port widely uses such as for weather monitoring because of its low cost, modularity and open design .

Fig 2 Raspberry pi

SQL DATABASE:

Database normalization is the process of restructuring a relational database in accordance with a series of so-called normal forms in order to reduce data redundancy and improve data integrity. Normalization entails organizing the columns (attributes) and tables (relations) of a database to ensure that their dependencies are properly enforced by database integrity constraints. It is accomplished by applying some formal rules either by a process of synthesis (creating a new database design) or decomposition (improving an existing database design)."

Fig 3 SQL Database

OPTICAL CHARACTER RECOGNITION (OCR):

OCR enables to convert previously prints text material into information .OCR requires a scanner and software .The basic process of OCR involves examining the test a document and translating the character into code that can be used for data processing .It is also referred to as text recognition OC R is using a scanner to process the physical form of a document .OCR software converts the document into two color or black and white version. The application of OCR is for automatic data entry, extraction processing and recognizing text such license plates with a camera or software.

Fig 4 Optical Character Recognition (OCR)

ADVANTAGES OF SMART VISITANTS ACCESS

The main advantage of our project is to avoid a manual data entry and to store the digital record of visitor data for future use and to manage multi gates from single centralized software itself and it improves massive customer service.

III. STUDY RESULT

The below figure shows the complete of software design of smart visitants access and data collection, where it gives access to the visitors and also store their data's for the future references
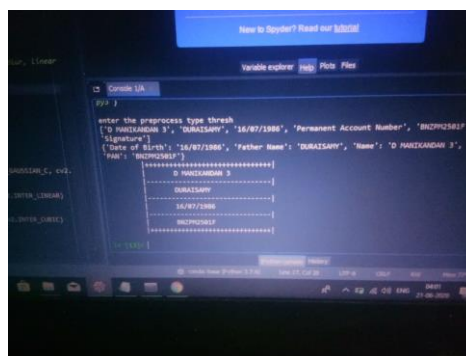

Fig 5: Showing information while ID card is accessed through camera

IV.CONCLUSION

The Smart Visitants Access and Data Collection has been designed in order to avoid the manual data entry and to provide access to the visitant. By implementing this system in the registration areas, a fast registration is possible, which would decrease the time and also reduces manpower by the smart entry of the stranger.

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