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Vehicle Number Plate Detection System for Indian Vehicle using OCR

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Abstract: *Automatic Plate recognition is one of the techniques used for vehicle identification purposes and it will provide all details about particular vehicle owner This process usually comprises of three steps. First step is the vehicle plate localization, regardless of the vehicle-plate size and orientation. The second step is the segmentation of the characters and last step is the recognition of the characters from the vehicle plate. Thus, this project uncovers the fundamental idea of various algorithms required to accomplish character recognition from the vehicle plate. This feature of the algorithm mentioned above helped in achieving faster character recognition of the license plate. This process of character recognition consists of steps like Image processing, Defragmentation, Resizing and Character localization that are required to be performed on the image.*

Keywords: Updation, Online Training and Placement Management System, TPO, Databases, Students, Eligibility

I. INTRODUCTION

Number Plate recognition plays an important role in various applications such as traffic monitoring on road, automatic toll payment, parking lots access control, detection of stolen vehicles. To identify a car number plate is effective because of its uniqueness of the car. Real time number plate recognition plays an important role in automatic monitoring of traffic rules. The recognition of car number plate can be used for automatic car parking because each car has its own identification number. The camera is used to capture the image automatically and can be used for many applications such as automatic toll plaza and car parking.

II. SYSTEM ANALYSIS EXISTING SYSTEM

In previous we used that project in matlab with hardware connection. but now we use no hardware only software. We use only python code & some libraries. The drowsiness detection system is built using MATLAB and Viola Jones Algorithm. It is cost of License. Its very costly user has to buy each and every module and pay for it. Disadvantage is during cross compiling or converting Matlab to other language code is very difficult. Its very difficult or requires deep level Matlab knowledge to deal with all errors.

2.1 Disadvantages

- It is cost of License. Its very costly user has to buy each and every module and pay for it.
- Disadvantage is during cross compiling or converting Matlab to other language code is very difficult.
- Its very difficult or requires deep level Matlab knowledge to deal with all errors.

III. PROPOSED SYSTEM

Minimum image angle: 90 degree (looking straight at the license plate). Image should be captured in daylight. The efficiency of the proposed system can be measured only in terms of number plates successfully and correctly recognized which can only be measured upon implementation. In proposed system it can able to find owner details from captured image. Efficiency and Performance of new system may decline due to discard of OCR library but the memory requirements will decrease and also the effort for installing, configuring and running the system would decrease.

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3.1 Advantages

A. Higher Productivity

OCR software helps businesses to achieve higher productivity by facilitating quicker data retrieval when required.

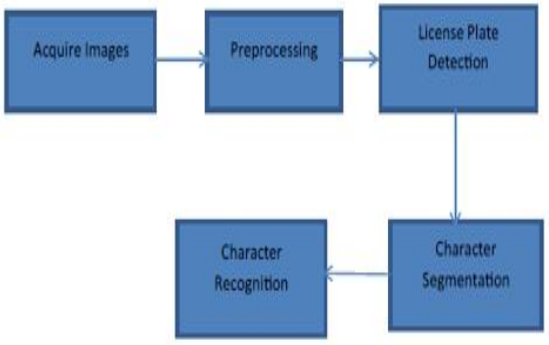
B. Cost Reduction

Opting for OCR will help businesses on cutting down on hiring professionals to carry out data extraction, which is one of the most important benefits of OCR data entry methods.

C. High Accuracy

One of the major challenges of data entry is inaccuracy. Automated data entry tools such as OCR data entry result in reduced errors and inaccuracies, resulting in efficient data entry.

IV. SYSTEM ARCHITECTURE



4.1 Modules Description

A. Data Pre-Processing

The entries are present in the dataset. The null values are removed using df = df.dropna() where df is the data frame. The categorical attributes (Date, High, Low, Close, Adj value) are converted into numeric using Label Encoder. The date attribute is splitted into new attributes like total which can be used as feature for the model.

B. Data Cleaning

The data can have many irrelevant and missing parts. To handle this part, data cleaning is done. It involves handling of missing data, noisy data etc.

C. Data Transformation

This step is taken in order to transform the data in appropriate forms suitable for mining process.

D. Data Reduction

Since data mining is a technique that is used to handle huge amount of data. While working with huge volume of data, analysis became harder in such cases.In order to get rid of this, we uses data reduction technique. It aims to increase the storage efficiency and reduce data storage and analysis costs.

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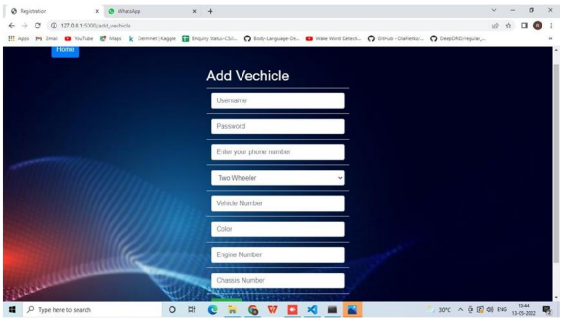
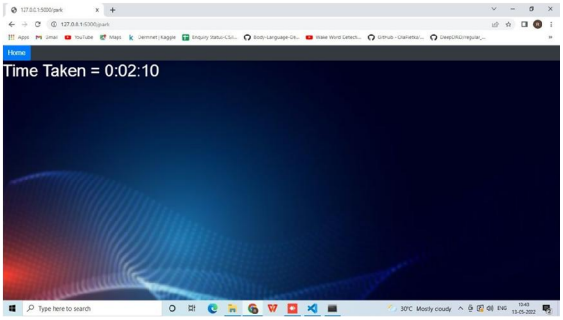
V. OUTPUT RESULTS

Home Page



Output



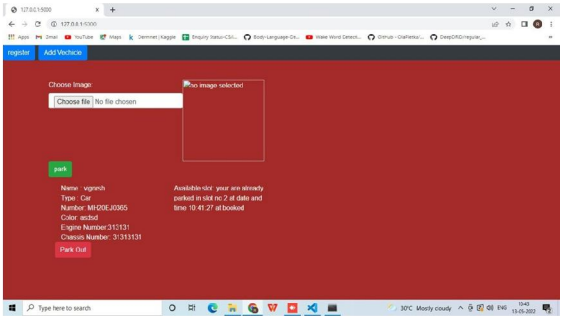
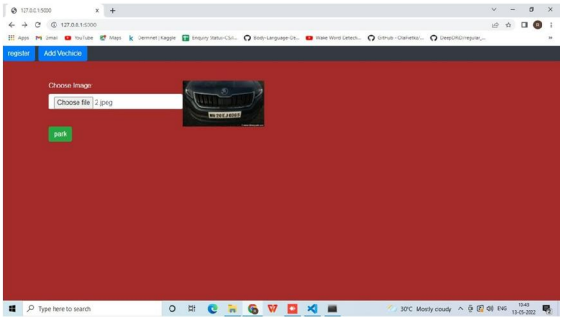


Photo Update



VI. CONCLUSION

In this work, we have presented technique to recognize number plate of vehicles. For this, we introduced Image capture, preprocessing, edge detection, segmentation, character resizing, feature extraction and finally recognized character of number plate using machine learning algorithms. Dataset creation consisted number of images which are collected real times, parking and etc.

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