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| **SEM-YEAR-BRANCH:- Sem IV – 2nd year - EXTC** | | | | |
| **Project Title: License Plate Detector** | | | | |
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| **Abstract** | In this project, we have learned about Automatic number-plate recognition using the Tesseract OCR i.e., Optical Character Recognition Engine (OCR Engine) to automatically recognize text in vehicle registration plates.  **Python-tesseract:**  Py-tesseract is an optical character recognition (OCR) tool for python. It’ll recognize and read the text embedded in images. Python-tesseract is a wrapper for Google’s Tesseract-OCR Engine. It is also used as an individual script, because it can read all image types like jpeg, png, gif, bmp, tiff, etc. Additionally, if used as a script, Python-tesseract will print the recognized text rather than writing it to a file. It has ability to recognize more than 100 languages.  **OpenCV:**  OpenCV is an open-source computer vision library. The library has more than 2500 optimized algorithms. These algorithms are often used to search and recognize faces, identify objects, recognize scenery and generate markers to overlay images using augmented reality, etc.  **Imutils:**  Imutils are a series of convenience functions to make basic image processing functions such as translation, rotation, resizing, skeletonization, and displaying Matplotlib images easier with OpenCV  We have performed different filters to the original input image i.e., rotation, size adjustment, gray conversion, bilateral conversion, edge detection, contouring, character segmentation, character recognition.  By performing all these filters, the number plate of our original image can be converted into string. |
| **Need of the Project** | Unlike other countries, India, with its one billion people population, has a unique set of needs for Automatic Number Plate Recognition .  The main use of this project is in highway monitoring, parking management, and neighbourhood law enforcement security. |
| **Dataset used** | <https://drive.google.com/drive/folders/1YdZ1dEhJRgxjHlNJEKnr7hSCWt-LFMFQ?usp=sharing>   * Libraries used are**: -** * Pandas * Numpy * cv2 * Matplotlib * Pytesseract * Imutils * Time * Sys |
| **Flow Chart** |  |
| **Result** | Rotated Image: Resized:    Gray: Edged:    Number plate detection:    Cropped:    Image to sting conversion: |
| **Conclusion** | Hence with the help of this project, we have finally understood the concept of image processing with the help of opencv and pytesseract and hence we also saw the application regarding with the project. |