A Minor Project Synopsis on

**License Plate Recognition System**

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**Introduction**

Automatic number-plate recognition is a technology that uses [optical character recognition](https://en.wikipedia.org/wiki/Optical_character_recognition) on images to read [vehicle registration plates](https://en.wikipedia.org/wiki/Vehicle_registration_plate) to create [vehicle location data](https://en.wikipedia.org/wiki/Vehicle_location_data). It can use existing [closed-circuit television](https://en.wikipedia.org/wiki/Closed-circuit_television), [road-rule enforcement cameras](https://en.wikipedia.org/wiki/Road-rule_enforcement_camera), or cameras specifically designed for the task. ANPR is used by police forces around the world for law enforcement purposes, including to check if a [vehicle is registered](https://en.wikipedia.org/wiki/Vehicle_registration) or [licensed](https://en.wikipedia.org/wiki/Vehicle_licence). It is also used for [electronic toll collection](https://en.wikipedia.org/wiki/Electronic_toll_collection) on [pay-per-use roads](https://en.wikipedia.org/wiki/Road_pricing) and as a method of cataloguing the movements of traffic, for example by highways agencies.

Automatic number-plate recognition can be used to store the images captured by the cameras as well as the text from the license plate, with some configurable to store a photograph of the driver. Systems commonly use [infrared](https://en.wikipedia.org/wiki/Infrared) lighting to allow the camera to take the picture at any time of day or night. ANPR technology must take into account plate variations from place to place.

Privacy issues have caused concerns about ANPR, such as government tracking citizens' movements, misidentification, high error rates, and increased government spending. Critics have described it as a form of [mass surveillance](https://en.wikipedia.org/wiki/Mass_surveillance).

**Motivation**

Recent innovations have contributed to the adoption of ANPR for perimeter security and [access control](https://en.wikipedia.org/wiki/Access_control) applications at government facilities. Within the US, "homeland security" efforts to protect against alleged "acts of terrorism" have resulted in adoption of ANPR for sensitive facilities such as embassies, schools, airports, maritime ports, military and federal buildings, law enforcement and government facilities, and transportation centres. ANPR is marketed as able to be implemented through networks of IP based surveillance cameras that perform "double duty" alongside facial recognition, object tracking, and recording systems for the purpose of monitoring suspicious or anomalous behaviour, improving access control, and matching against watch lists. ANPR systems are most commonly installed at points of significant sensitivity, ingress or egress. Major US agencies such as the Department of Homeland Security, the Department of Justice, the Department of Transportation and the Department of Defence have purchased ANPR for perimeter security applications. Large networks of ANPR systems are being installed by cities such as Boston, London and New York City to provide citywide protection against acts of terrorism, and to provide support for public gatherings and public spaces.

**Problem Statement**

Our objective in this project is to make a License plate recognition system which will scan the license plate of an approaching car and save it in a database. We will then compare the new entries with existing entries to see if the driver is a repeat offender.

**Methodology/Planning of work:**

1. Plan out the requirements of the required model.

2. Set up Python workspace on Windows operating system.

3. Install the required libraries to process the model.

1. Run a simulation of the program to test it.
2. Use the camera to capture images.
3. Program the camera to recognize a License plate.
4. Program the camera to save the image in a database.
5. Report Writing.
6. Publishing paper related to the work.

**Facilities required for proposed work:**

**Software-**

1. Windows Operating System
2. Github
3. Python version 3.7
4. OpenCV Library
5. OS Library
6. Pillow Library
7. Tkinter Library

**Hardware-**

1. Laptop with 16 GB RAM and intel i5 core