

## **ABSTRACT**

*Vehicle as a tool that humans use to move from one place to another has variegated shapes and sizes. In its application, requires a vehicle storage area or garage when the vehicle is after or before they are used by their owners. For security reasons and the convenience, then made an automatic garage door from the garage where automated can only be open to vehicles permitted only.*

*Every vehicle using a plate containing the number of the police as an identity that would distinguish one vehicle to another. A plate of the vehicle can be used as a parameter for making an automatic garage. So in this final project, the authors designed a system of automatic doors in a private garage by car number plate reading. Car license plate readings performed by the camera as a sensor. Car license plate will be captured by the camera in the form of an image and a process of image processing to get the license plate characters. Car license plate number obtained will be compared through the template matching process with a predetermined reference data. If the license plate obtained in accordance with the reference data, the microcontroller Arduino Uno will set the conditions contactor. Microcontroller will determine the direction and magnitude of the rotation angle of the DC motor. When the DC motor rotates the garage door opens so that the car can go into the garage.*

*Expectations and objectives to be achieved in the construction of private garage automatically based on vehicle number plate recognition to provide the convenience for users, especially on the security side of the vehicle garage.*

*Keyword: image processing, character recognition, mikrokontroller, arduino uno, template matching*