CS373
OCR for License Plate Detection
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Introduction
This is the extension of the original task of license plate detection. I am testing an Optical Character Recognition (OCR) on the provided license plates in this assignment.

Executing extension
There is a file called '373extension.py'. By default when running the extension the input_filename will be numberplate1.png.

In order for the extension to run successfully a few dependencies are required to be installed:

- easyocr (can be installed through pip)
- matplotlib (can be installed through pip)

Extension
This implementation of OCR reads the number plate. In order for a semi-accurate read of the text on the number plate, the image has been cropped to just the bounding box of the license plate to make it easier for the algorithm to read through the text.

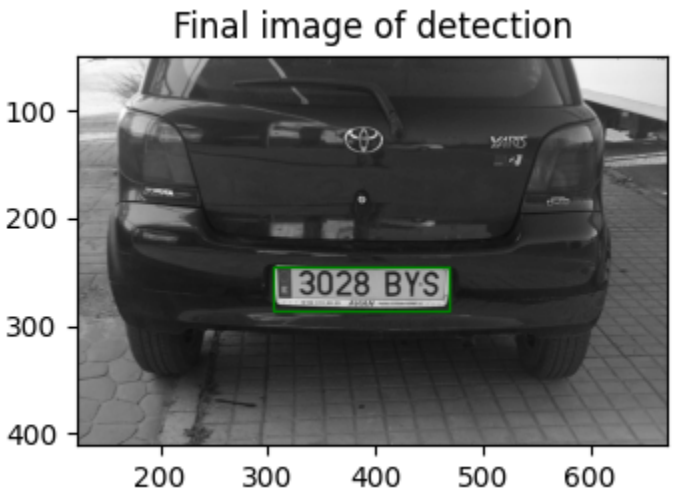

Figure 1: numberplate1_output.png

The bounding box is the green rectangle around the license plate, the cropped license plate image provides the details present inside the bounding box in order for the OCR to read the text accurately. This is seen below in Figure 2.

Figure 2: Cropped License Plate Image

Reflection

This extension provides OCR for license plate detection. By using easyocr on the cropped license plate images it provides a semi-accurate representation of the license plate text. However, the character recognition is not entirely accurate in the provided images due to some of them being high contrast and low resolution.

Results

Image	**Output**
numberplate1.png	 **The License Plate Number is: 3028 BYS]**
numberplate2.png	 **The License Plate Number is: ABC123**

numberplate3.png	 **The License Plate number is: OTO BLOG**
numberplate4.png	 **The License Plate number is: EHH DVID** **(inaccuracy due to low resolution)**
numberplate5.png	 **The License Plate number is: H3786 POJ** **(slight accuracy)**
numberplate6.png	 **The License Plate Number is: 4898 GXY**

Conclusion

By using the library easyocr it has enabled optical character recognition on each of the license plates. However, there are some issues with this implementation of OCR due to some of the provided images being low resolution and high contrast causing the recognition to be not entirely accurate.