OCR SPACE License Plate Detection

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Github Repository: https://github.com/neryay/OCR_SPACE_License_Plate_Detection

About this Project

This project can detect and classify images of license plates using OCR Space API, which then stores said license plates data in a local SQL database.

Built With

This project contains code which was written in Python 3.7, using the JetBrains PyCharm IDE.
Additionally,
The modules which were used in this project are as following:

- requests
- re
- os
- datetime
- sqlite3

Quick Modules Summary

- requests – this module is used to interact with REST APIs, such as OCR Space API. (more)
- re – re stands for Regular Expression, which are used to analyze and parse text data. (more)
- os – os stands for Operating System, this module allows us to perform various actions within the operating system, such as opening and editing files. (more)
- datetime – this module allows it's user to get the time and date with divers functionality. (more)
- sqlite3 – this module allows to store and get data in and from an SQL database.

The Project itself

In order to make this project as modular as possible, I have divided its functionality to several files.

Modules

- ocr_space_api_engine.py - first, I have written the file which is responsible to interact with the given API.
  This file uses the module "requests", and it implements one function **get_text_file(filename)**. The function gets as a parameter a file's name; this represents a local image.
  The function contains the API key which is essential to make a post request.
  Also, the API provides two types of analyzation engine, I have used the second type which is better for Latin characters' analyzation (such as English), as well it is better for numbers analyzation. (more information about the OCR engines).

Ultimately, the functions parses the JSON which you get from the API in order to get the numbers off of the license image.

- licensePlate_string_parser.py – this file classifies and determines the type of the license plate according to the given requirements.
  The core function is **license_plate_classification(license_plate)**, it gets a license plate, then examines it using string functionality and returns two values, the name of the table the license plate belongs to and said license plate.
- DB_Utils.py – this file interacts with the database using the module sqlite3. Its functionality creates a database, and tables within this database. Also, it updates the tables with the license plates and the timestamps.
- license_plate_classifier.py – this file contains one function, **run()**, which executes the OCR API engine, and then uses the DB Utils in order to store the data in the database.
- main.py – executes the function run() within the module license_plate_classifier.py.