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Project 2 Write-up

Section 1: Pillow

The Process Imaging Library (PIL) is a python library that processes, displays, and enhances images. A more commonly used fork of this library is pillow. With this library, a python script can be made to process images. One example of what this library does is that it can convert file types. Maybe there's a situation with uploading multiple images to a website and that website only accepts images in JPG format. Assume that the client computer only has PNG image files; obviously these images can't be uploaded because of its file type. Instead of manually changing the file type, a python script using this library could do this automatically in companion with the internal python library OS. Another example could be that an image may be too large. This library could automatically resize the image to half its size. There are also image enhancement features that PIL can do. It can blur an image, change an image color, rotate an image, etc.

Required: Run `pip install pillow` to run the program.

Pillow Documentation: https://pillow.readthedocs.io/en/stable/

<u>Section 2:</u> Covid

Covid is a python library that retrieves worldwide statistics from COVID-19 (Coronavirus Disease 2019) from two API's. The default API is from Johns Hopkins University. The other API is Worldometers.info.

There could be a possibility where somebody may want to create a personal dashboard, so they can use this class to import all of the information needed from an API. The dashboard could update its information automatically. Another way covid could be used would be for graphing a time-lapse. Data scientists may use this to track the rate of spread, deaths, and recoveries.

When using this library different functions can be used to retrieve different sources of data. The function covid.source would retrieve the name of the source API. If the default source is being used, it would return "johns_hopkins" To get the API to retrieve JSON data of infected countries, one would use the function covid.list_countries(). To get the status of all countries including confirmed, active, deaths, recovered, latitude, longitude etc, the function covid.get_data() would be called. Say if someone wanted to get data for a specific country, the function covid.get_status_by_country_name("country") would be used. Where the desired country would replace "country".

Required: Run `pip install covid` to run the program.

Covid Documentation: https://ahmednafies.github.io/covid/

Section 3: Arrow

The Arrow is a python library that deals with dates or timestamps and converts them to a humanly readable format. It will update and show the date time whether it is DD/MM/YYYY or MM/DD/YYYY. It is actually flexible as long as the key is followed in the documentation. The .shift() method allows a non-technical time phrase. For example: `2020-04-01T16:21:10.745802-04:00` would be 5 seconds before `2020-04-01T16:21:15.745802-04:00` This would convert to "5 seconds ago". An example that this library can be used for is a world clock for a global business for example: a company that is located in three areas: India, New Jersey, and California. This could print out a few sentences like: On the west coast it is 03:58:15 PM or On the east coast it is 06:58:15 PM to let the user know what the time difference is. Another scenario for this library would be a flight tracker application. This could show connecting flights and show how long the flight would take and what time the flight would reach its destination. E.G. 6 hour flight to Las Vegas. Leaving at 6:00 AM Arriving at 10:00 AM

Required: Run `pip install arrow` to run the program.

Arrow Documentation: https://arrow.readthedocs.io/en/latest/