```
pip install Pillow
```

```
Requirement already satisfied: Pillow in /usr/local/lib/python3.7/dist-packages (7.1.2)
```

```
from PIL import Image
import os
import requests
from io import BytesIO
```

```
#!/usr/bin/env python

from PIL import Image

def get_exif(filename):
    image = Image.open(filename)
    image.verify()
    return image._getexif()

exif = get_exif(r'EP-00-00012_0119_0004.JPG')
print(exif)
```

```
{37378: (350, 100), 36867: '2000:01:01 11:51:58', 37380: (0, 10), 37381: (297, 100), 373
```

```
from PIL.ExifTags import TAGS

def get_labeled_exif(exif):
    labeled = {}
    for (key, val) in exif.items():
        labeled[TAGS.get(key)] = val

    return labeled

exif = get_exif(r'EP-00-00012_0119_0004.JPG')
labeled = get_labeled_exif(exif)
print(labeled)
```

```
{'ApertureValue': (350, 100), 'DateTimeOriginal': '2000:01:01 11:51:58', 'ExposureBiasVa
```

```
from PIL.ExifTags import GPSTAGS

def get_geotagging(exif):
    if not exif:
        raise ValueError("No EXIF metadata found")

    geotagging = {}
    for (idx, tag) in TAGS.items():
```

```
            if tag == 'GPSInfo':
                if idx not in exif:
                    raise ValueError("No EXIF geotagging found")

                for (key, val) in GPSTAGS.items():
                    if key in exif[idx]:
                        geotagging[val] = exif[idx][key]

        return geotagging

    exif = get_exif(r'EP-00-00012_0119_0004.JPG')
    geotags = get_geotagging(exif)
    print(geotags)
```

```
{'GPSVersionID': b'\x02\x03\x00\x00', 'GPSLatitudeRef': 'N', 'GPSLatitude': ((46, 1), (3
```

```
    def get_decimal_from_dms(dms, ref):

        degrees = dms[0][0] / dms[0][1]
        minutes = dms[1][0] / dms[1][1] / 60.0
        seconds = dms[2][0] / dms[2][1] / 3600.0

        if ref in ['S', 'W']:
            degrees = -degrees
            minutes = -minutes
            seconds = -seconds

        return round(degrees + minutes + seconds, 5)

    def get_coordinates(geotags):
        lat = get_decimal_from_dms(geotags['GPSLatitude'], geotags['GPSLatitudeRef'])

        lon = get_decimal_from_dms(geotags['GPSLongitude'], geotags['GPSLongitudeRef'])

        return (lat,lon)


    exif = get_exif(r'EP-00-00012_0119_0004.JPG')
    geotags = get_geotagging(exif)
    print(get_coordinates(geotags))
```

```
     (46.57783, 6.59152)
```

```
    import sys
    from PIL import Image

    for filename in sys.argv[1:]:
        print(filename)

        image = Image.open(r'EP-00-00012_0119_0004.JPG')
```

```
image_clean = Image.new(image.mode, image.size)
image_clean.putdata(list(image.getdata()))
image_clean.save('clean_' + r'EP-00-00012_0119_0004.JPG')
```

```
 -f
 /root/.local/share/jupyter/runtime/kernel-5956e7f6-46af-4b97-8b59-221bb3ead63b.json
```

✓ 10s completed at 22:50