

02.geocoders.maps

August 20, 2024

```
[ ]: import re
import time
import folium
import numpy as np
import pandas as pd
from geopy.geocoders import ArcGIS
from geopy.geocoders import Nominatim
from geopy.exc import GeocoderTimedOut
from geopy.extra.rate_limiter import RateLimiter

import warnings
warnings.filterwarnings('ignore')
```

```
[ ]: df = pd.read_csv('Property_Location.csv')
```

```
[ ]: df["Location"] = df["Location"].str.replace(' ', '+')
df["Region"] = df["Region"].str.replace(' ', '+')
```

```
[ ]: print("Shape of Data :", df.shape)
df.head()
```

Shape of Data : (2580, 13)

```
[ ]:
      Property_Name \
0      Omkar Alta Monte
1  T Bhimjyani Neelkanth Woods
2      Legend 1 Pramila Nagar
3      Unnamed Property
4      Unnamed Property

      Location      Price  Rate_SqFt \
0  W+E+Highway+Malad+East+Mumbai    5 Crore    17241
1      Manpada+Thane+Mumbai    2.4 Crore    12631
2      Dahisar+West+Mumbai    95 Lac    15966
3  Vidyavihar+West+Vidyavihar+West+Central+Mumbai...    3.75 Crore    25862
4  176+Cst+Road+Kalina+Mumbai+400098+Santacruz+Ea...    3.5 Crore    39954

      Area_Tpye  Bedroom  Bathroom  Floor_No  Property_Age \
```

0	Super Built Up Area	3	4	14	0 to 1 Year
1	Super Built Up Area	3	3	8	1 to 5 Year
2	Super Built Up Area	1	2	3	10+ Year
3	Built Up Area	3	3	1	5 to 10 Year
4	Carpet Area	2	2	5	5 to 10 Year

	Availability	Area_SqFt	Region	Price_Lakh
0	Ready To Move	2900.0	Highway+Malad	500.0
1	Ready To Move	1900.0	Manpada+Thane	240.0
2	Ready To Move	595.0	Dahisar+Mumbai	95.0
3	Ready To Move	1450.0	Central+Mumbai	375.0
4	Ready To Move	876.0	Santacruz+Mumbai	350.0

```
[ ]: location = []
def Location_Locate():
    for i in range(0,len(df["Location"])):
        try:
            locator = Nominatim(user_agent="streamlitdemo")
            geocode = RateLimiter(locator.geocode, min_delay_seconds=1)
            location.append(geocode(df['Location'][i]))
        except:
            locator = Nominatim(user_agent="streamlitdemo")
            geocode = RateLimiter(locator.geocode, min_delay_seconds=1)
            location.append(geocode(df['Region'][i]))
        else:
            pass
Location_Locate()
```

RateLimiter caught an error, retrying (0/2 tries). Called with

(*('429+V+P+Road+Flat+No+8+9+Andheri+West+Mumbai',), **{}).

Traceback (most recent call last):

File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py", line 536, in _make_request

```
    response = conn.getresponse()
    ~~~~~
```

File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connection.py", line 464, in getresponse

```
    httplib_response = super().getresponse()
    ~~~~~
```

File "C:\Users\Omar Essam2\AppData\Local\Programs\Python\Python312\Lib\http\client.py", line 1428, in getresponse

```
    response.begin()
    ~~~~~
```

File "C:\Users\Omar Essam2\AppData\Local\Programs\Python\Python312\Lib\http\client.py", line 331, in begin

```
    version, status, reason = self._read_status()
    ~~~~~
```

```
File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\http\client.py", line 292, in
_read_status
```

```
    line = str(self.fp.readline(_MAXLINE + 1), "iso-8859-1")
    ~~~~~
```

```
File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\socket.py", line 708, in
readinto
```

```
    return self._sock.recv_into(b)
    ~~~~~
```

```
File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\ssl.py", line 1252, in
recv_into
```

```
    return self.read(nbytes, buffer)
    ~~~~~
```

```
File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\ssl.py", line 1104, in read
```

```
    return self._sslobj.read(len, buffer)
    ~~~~~
```

TimeoutError: The read operation timed out

The above exception was the direct cause of the following exception:

Traceback (most recent call last):

```
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 789, in urlopen
```

```
    response = self._make_request(
    ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 538, in _make_request
```

```
    self._raise_timeout(err=e, url=url, timeout_value=read_timeout)
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 369, in _raise_timeout
```

```
    raise ReadTimeoutError(
```

urllib3.exceptions.ReadTimeoutError:

HTTPConnectionPool(host='nominatim.openstreetmap.org', port=443): Read timed out. (read timeout=1)

The above exception was the direct cause of the following exception:

Traceback (most recent call last):

```
File "d:\virtual_env\mlmodel\Lib\site-packages\requests\adapters.py", line
667, in send
```

```
    resp = conn.urlopen(
    ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 873, in urlopen
```

```
    return self.urlopen(
```

```

~~~~~
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 873, in urlopen
    return self.urlopen(
~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 843, in urlopen
    retries = retries.increment(
~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\util\retry.py", line
519, in increment
    raise MaxRetryError(_pool, url, reason) from reason # type: ignore[arg-
type]
~~~~~

urllib3.exceptions.MaxRetryError:
HTTPConnectionPool(host='nominatim.openstreetmap.org', port=443): Max retries
exceeded with url: /search?q=429%2BV%2BP%2BRoad%2BFlat%2BNo%2B8%2B9%2BAndheri%2B
West%2BMumbai&format=json&limit=1 (Caused by
ReadTimeoutError("HTTPConnectionPool(host='nominatim.openstreetmap.org',
port=443): Read timed out. (read timeout=1)"))

During handling of the above exception, another exception occurred:

Traceback (most recent call last):
  File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\adapters.py", line 482,
in _request
    resp = self.session.get(url, timeout=timeout, headers=headers)
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  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
602, in get
    return self.request("GET", url, **kwargs)
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  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
589, in request
    resp = self.send(prepare, **send_kwargs)
~~~~~

  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
703, in send
    r = adapter.send(request, **kwargs)
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  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\adapters.py", line
700, in send
    raise ConnectionError(e, request=request)
requests.exceptions.ConnectionError:
HTTPConnectionPool(host='nominatim.openstreetmap.org', port=443): Max retries
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Traceback (most recent call last):

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File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\extra\rate_limiter.py",
line 136, in _retries_gen
    yield i # Run the function.
    ~~~~~
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File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\extra\rate_limiter.py",
line 274, in __call__
    res = self.func(*args, **kwargs)
    ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\geocoders\nominatim.py",
line 297, in geocode
    return self._call_geocoder(url, callback, timeout=timeout)
    ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\geocoders\base.py", line
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    ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\adapters.py", line 494,
in _request
    raise GeocoderUnavailable(message)
```

geopy.exc.GeocoderUnavailable:

```
HTTPSConnectionPool(host='nominatim.openstreetmap.org', port=443): Max retries
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West%2BMumbai&format=json&limit=1 (Caused by
ReadTimeoutError("HTTPSConnectionPool(host='nominatim.openstreetmap.org',
port=443): Read timed out. (read timeout=1))")
RateLimiter caught an error, retrying (1/2 tries). Called with
(*('429+V+P+Road+Flat+No+8+9+Andheri+West+Mumbai',), **{}).
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    httplib_response = super().getresponse()
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        response.begin()
File "C:\Users\Omar
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    version, status, reason = self._read_status()
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recv_into
    return self.read(nbytes, buffer)
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    return self._sslobj.read(len, buffer)
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TimeoutError: The read operation timed out

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Traceback (most recent call last):

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File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
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    raise ReadTimeoutError(
urllib3.exceptions.ReadTimeoutError:
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    File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\util\retry.py", line
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    raise MaxRetryError(_pool, url, reason) from reason # type: ignore[arg-
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ReadTimeoutError("HTTPSConnectionPool(host='nominatim.openstreetmap.org',
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During handling of the above exception, another exception occurred:

Traceback (most recent call last):
  File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\adapters.py", line 482,
in _request
    resp = self.session.get(url, timeout=timeout, headers=headers)
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  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
602, in get
    return self.request("GET", url, **kwargs)
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  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
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    resp = self.send(prepare, **send_kwargs)
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  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\adapters.py", line
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```

```

        raise ConnectionError(e, request=request)
requests.exceptions.ConnectionError:
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exceeded with url: /search?q=429%2BV%2BP%2BRoad%2BFlat%2BNo%2B8%2B9%2BAndheri%2B
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line 136, in _retries_gen
    yield i # Run the function.
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    ~~~~~

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West%2BMumbai&format=json&limit=1 (Caused by
ReadTimeoutError("HTTPSConnectionPool(host='nominatim.openstreetmap.org',
port=443): Read timed out. (read timeout=1)"))
RateLimiter swallowed an error after 2 retries. Called with
(*('429+V+P+Road+Flat+No+8+9+Andheri+West+Mumbai',), **{}).
Traceback (most recent call last):
  File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 536, in _make_request
    response = conn.getresponse()
    ~~~~~

  File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connection.py", line

```



```

464, in getresponse
    httplib_response = super().getresponse()
                        ~~~~~~

File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\http\client.py", line 1428,
in getresponse
    response.begin()
File "C:\Users\Omar
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    version, status, reason = self._read_status()
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    return self._sslobj.read(len, buffer)
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TimeoutError: The read operation timed out

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The above exception was the direct cause of the following exception:

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File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 789, in urlopen
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    raise ReadTimeoutError(
urllib3.exceptions.ReadTimeoutError:
HTTPSConnectionPool(host='nominatim.openstreetmap.org', port=443): Read timed

```

```
out. (read timeout=1)
```

The above exception was the direct cause of the following exception:

Traceback (most recent call last):

```
File "d:\virtual_env\mlmodel\Lib\site-packages\requests\adapters.py", line 667, in send
```

```
    resp = conn.urlopen(  
        ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py", line 873, in urlopen
```

```
    return self.urlopen(  
        ~~~~~
```

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File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py", line 873, in urlopen
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    return self.urlopen(  
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```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py", line 843, in urlopen
```

```
    retries = retries.increment(  
        ~~~~~
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File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\util\retry.py", line 519, in increment
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    raise MaxRetryError(_pool, url, reason) from reason # type: ignore[arg-  
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```

```
~~~~~
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```
urllib3.exceptions.MaxRetryError:
```

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During handling of the above exception, another exception occurred:

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```

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        ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line 602, in get
```

```
    return self.request("GET", url, **kwargs)  
        ~~~~~
```

```
File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line 589, in request
```

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    resp = self.send(prepare, **send_kwargs)  
        ~~~~~
```

```

File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
703, in send
    r = adapter.send(request, **kwargs)
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\requests\adapters.py", line
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port=443): Read timed out. (read timeout=1)"))
RateLimiter caught an error, retrying (0/2 tries). Called with
(*('Mira+Road+East+Mira+Road+East+Mira+Road+And+Beyond+Mumbai',), **{}).

```

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in getresponse
    response.begin()
File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\http\client.py", line 331, in
begin
    version, status, reason = self._read_status()
    ~~~~~

File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\http\client.py", line 292, in
_read_status
    line = str(self.fp.readline(_MAXLINE + 1), "iso-8859-1")
    ~~~~~

File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\socket.py", line 708, in
readinto
    return self._sock.recv_into(b)
    ~~~~~

File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\ssl.py", line 1252, in
recv_into
    return self.read(nbytes, buffer)
    ~~~~~

File "C:\Users\Omar
Essam2\AppData\Local\Programs\Python\Python312\Lib\ssl.py", line 1104, in read
    return self._sslobj.read(len, buffer)
    ~~~~~

TimeoutError: The read operation timed out
```

The above exception was the direct cause of the following exception:

Traceback (most recent call last):

```
File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 789, in urlopen
    response = self._make_request(
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 538, in _make_request
```

```

        self._raise_timeout(err=e, url=url, timeout_value=read_timeout)
    File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 369, in _raise_timeout
    raise ReadTimeoutError(
urllib3.exceptions.ReadTimeoutError:
HTTPSConnectionPool(host='nominatim.openstreetmap.org', port=443): Read timed
out. (read timeout=1)

```

The above exception was the direct cause of the following exception:

```

Traceback (most recent call last):
  File "d:\virtual_env\mlmodel\Lib\site-packages\requests\adapters.py", line
667, in send
    resp = conn.urlopen(
            ~~~~~~

    File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 873, in urlopen
    return self.urlopen(
            ~~~~~~

    File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 873, in urlopen
    return self.urlopen(
            ~~~~~~

    File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\connectionpool.py",
line 843, in urlopen
    retries = retries.increment(
            ~~~~~~

    File "d:\virtual_env\mlmodel\Lib\site-packages\urllib3\util\retry.py", line
519, in increment
    raise MaxRetryError(_pool, url, reason) from reason # type: ignore[arg-
type]
    ~~~~~~
urllib3.exceptions.MaxRetryError:
HTTPSConnectionPool(host='nominatim.openstreetmap.org', port=443): Max retries
exceeded with url: /search?q=Mira%2BRoad%2BEast%2BMira%2BRoad%2BEast%2BMira%2BRo
ad%2BAnd%2BBeyond%2BMumbai&format=json&limit=1 (Caused by
ReadTimeoutError("HTTPSConnectionPool(host='nominatim.openstreetmap.org',
port=443): Read timed out. (read timeout=1)"))

```

During handling of the above exception, another exception occurred:

```

Traceback (most recent call last):
  File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\adapters.py", line 482,
in _request
    resp = self.session.get(url, timeout=timeout, headers=headers)
            ~~~~~~

    File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
602, in get

```

```

        return self.request("GET", url, **kwargs)
        ~~~~~
File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
589, in request
    resp = self.send(prepare, **send_kwargs)
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\requests\sessions.py", line
703, in send
    r = adapter.send(request, **kwargs)
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\requests\adapters.py", line
700, in send
    raise ConnectionError(e, request=request)
requests.exceptions.ConnectionError:
HTTPSConnectionPool(host='nominatim.openstreetmap.org', port=443): Max retries
exceeded with url: /search?q=Mira%2BRoad%2BEast%2BMira%2BRoad%2BEast%2BMira%2BRoad%2BAnd%2BBeyond%2BMumbai&format=json&limit=1 (Caused by
ReadTimeoutError("HTTPSConnectionPool(host='nominatim.openstreetmap.org',
port=443): Read timed out. (read timeout=1)"))

```

During handling of the above exception, another exception occurred:

Traceback (most recent call last):

```

File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\extra\rate_limiter.py",
line 136, in _retries_gen
    yield i # Run the function.
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\extra\rate_limiter.py",
line 274, in __call__
    res = self.func(*args, **kwargs)
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\geocoders\nominatim.py",
line 297, in geocode
    return self._call_geocoder(url, callback, timeout=timeout)
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\geocoders\base.py", line
368, in _call_geocoder
    result = self.adapter.get_json(url, timeout=timeout, headers=req_headers)
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\adapters.py", line 472,
in get_json
    resp = self._request(url, timeout=timeout, headers=headers)
    ~~~~~

File "d:\virtual_env\mlmodel\Lib\site-packages\geopy\adapters.py", line 494,
in _request
    raise GeocoderUnavailable(message)
geopy.exc.GeocoderUnavailable:
HTTPSConnectionPool(host='nominatim.openstreetmap.org', port=443): Max retries

```

exceeded with url: /search?q=Mira%2BRoad%2BEast%2BMira%2BRoad%2BEast%2BMira%2BRoad%2BAnd%2BBeyond%2BMumbai&format=json&limit=1 (Caused by ReadTimeoutError("HTTPSConnectionPool(host='nominatim.openstreetmap.org', port=443): Read timed out. (read timeout=1)"))

```
[ ]: Latitude = []
Longitude = []
for i in range(0,len(location)):
    if(location[i]):
        Latitude.append(location[i].latitude)
        Longitude.append(location[i].longitude)
    else:
        Latitude.append(np.nan)
        Longitude.append(np.nan)
print("Total Latitude : ", len(Latitude))
```

Total Latitude : 2580

Adding Latitude and Longitude to the dataframe

```
[ ]: df['Latitude'] = Latitude
df['Longitude'] = Longitude
```

```
[ ]: df["Location"] = df["Location"].str.replace('+', ' ')
df["Region"] = df["Region"].str.replace('+', ' ')
```

```
[ ]: df.head()
```

```
[ ]:
      Property_Name \
0      Omkar Alta Monte
1  T Bhimjyani Neelkanth Woods
2      Legend 1 Pramila Nagar
3      Unnamed Property
4      Unnamed Property

      Location      Price  Rate_SqFt \
0  W E Highway Malad East Mumbai    5 Crore    17241
1      Manpada Thane Mumbai    2.4 Crore    12631
2      Dahisar West Mumbai    95 Lac    15966
3  Vidyavihar West Vidyavihar West Central Mumbai...  3.75 Crore    25862
4  176 Cst Road Kalina Mumbai 400098 Santacruz Ea...  3.5 Crore    39954

      Area_Tpye  Bedroom  Bathroom  Floor_No  Property_Age \
0  Super Built Up Area      3        4        14  0 to 1 Year
1  Super Built Up Area      3        3         8  1 to 5 Year
2  Super Built Up Area      1        2         3    10+ Year
3      Built Up Area      3        3         1  5 to 10 Year
4      Carpet Area      2        2         5  5 to 10 Year
```

	Availability	Area_SqFt	Region	Price_Lakh	Latitude	\
0	Ready To Move	2900.0	Highway Malad	500.0	NaN	
1	Ready To Move	1900.0	Manpada Thane	240.0	19.235319	
2	Ready To Move	595.0	Dahisar Mumbai	95.0	19.064823	
3	Ready To Move	1450.0	Central Mumbai	375.0	NaN	
4	Ready To Move	876.0	Santacruz Mumbai	350.0	NaN	

	Longitude
0	NaN
1	72.975950
2	72.837362
3	NaN
4	NaN

```
[ ]: df.isna().sum()
```

```
[ ]: Property_Name      0
      Location          0
      Price             0
      Rate_SqFt         0
      Area_Tpye         0
      Bedroom           0
      Bathroom          0
      Floor_No          0
      Property_Age      0
      Availability      0
      Area_SqFt         0
      Region            0
      Price_Lakh        0
      Latitude          1567
      Longitude         1567
      dtype: int64
```

```
[ ]: df.dropna(inplace=True)
      df.reset_index(drop=True, inplace=True)
```

```
[ ]: df.shape
```

```
[ ]: (1013, 15)
```

```
[ ]: df.to_csv('Map_Location.csv', index=False)
```

```
[ ]: df2 = pd.read_csv('Map_Location.csv')
      df2
```

	Property_Name	Location	\
0	T Bhimjyani Neelkanth Woods	Manpada Thane Mumbai	
1	Legend 1 Pramila Nagar	Dahisar West Mumbai	

2	Varun Garden	Manpada Thane Mumbai
3	Green Court	702 Andheri West Mumbai
4	Balaji Galaxy	502 Kalamboli Navi Mumbai Mumbai
...
1008	Unnamed Property	Koparkhairane Navi Mumbai Mumbai
1009	Balaji Mayuresh Delta	Ulwe Navi Mumbai Mumbai
1010	Balaji Mayuresh Delta	Ulwe Navi Mumbai Mumbai
1011	Balaji Mayuresh Delta	Ulwe Navi Mumbai Mumbai
1012	Gurukrupa Tulsi Heights	Ulwe Navi Mumbai Mumbai

	Price	Rate_SqFt		Area_Tpye	Bedroom	Bathroom	Floor_No	\
0	2.4 Crore	12631	Super	Built Up Area	3	3	8	
1	95 Lac	15966	Super	Built Up Area	1	2	3	
2	2.2 Crore	14666	Super	Built Up Area	3	3	7	
3	2.75 Crore	34810		Built Up Area	2	2	7	
4	70 Lac	11111		Carpet Area	2	2	5	
...	
1008	85 Lac	20481		Carpet Area	1	1	4	
1009	1.78 Crore	9569		Built Up Area	3	3	8	
1010	1.37 Crore	10579		Built Up Area	2	2	6	
1011	1.71 Crore	9243		Built Up Area	3	3	6	
1012	95 Lac	8636		Built Up Area	2	2	4	

	Property_Age	Availability	Area_SqFt		Region	\
0	1 to 5 Year	Ready To Move	1900.0		Manpada Thane	
1	10+ Year	Ready To Move	595.0		Dahisar Mumbai	
2	5 to 10 Year	Ready To Move	1500.0		Manpada Thane	
3	5 to 10 Year	Ready To Move	1200.0		Andheri Mumbai	
4	10+ Year	Ready To Move	630.0		Kalamboli Navi-Mumbai	
...	
1008	10+ Year	Ready To Move	415.0	Koparkhairane	Navi-Mumbai	
1009	1 to 5 Year	Ready To Move	1860.0		Ulwe Navi-Mumbai	
1010	1 to 5 Year	Ready To Move	1295.0		Ulwe Navi-Mumbai	
1011	1 to 5 Year	Ready To Move	1850.0		Ulwe Navi-Mumbai	
1012	0 to 1 Year	Ready To Move	1100.0		Ulwe Navi-Mumbai	

	Price_Lakh	Latitude	Longitude
0	240.0	19.235319	72.975950
1	95.0	19.064823	72.837362
2	220.0	19.235319	72.975950
3	275.0	19.117249	72.833968
4	70.0	19.023506	73.110609
...
1008	85.0	19.100837	72.998541
1009	178.0	18.976861	73.020131
1010	137.0	18.976861	73.020131
1011	171.0	18.976861	73.020131

```
1012          95.0  18.976861  73.020131
```

```
[1013 rows x 15 columns]
```

```
[ ]: lat = list(df2['Latitude'])
lon = list(df2['Longitude'])
name = list(df2['Property_Name'])
add = list(df2['Location'])
price = list(df2['Price'])
age = list(df2['Property_Age'])
avail = list(df2['Availability'])
rate = list(df2['Rate_SqFt'])

gmap = folium.Map(location=[19.25029770723734, 73.13414632644128],
↳zoom_start=10)
fg = folium.FeatureGroup(name="My Map").add_to(gmap)
```

```
[ ]: for lat,lon,name,add,price,age,avail,rate in
↳zip(lat,lon,name,add,price,age,avail,rate):
    html = f"""<p style="color:green" > Property Name : {name}<p/>
        <p style="color:green" > Address : {add}<p/>
        <p style="color:red" > Price : {price}<p/>
        <p style="color:red" > Rate SqFt : {rate}<p/>
        <p style="color:blue" > Property Age : {age}<p/>
        <p style="color:blue" > Availability : {avail}<p/>
        """
    iframe = folium.IFrame(html, width=250, height=270)
    popup = folium.Popup(iframe, max_width=300)
    marker = folium.Marker([lat,lon], popup=(popup)).add_to(gmap)
    gmap.add_child(marker)

gmap.add_child(fg)
gmap.save("mumbai_property.html")
```

```
[ ]: gmap.add_child(fg)
```

```
[ ]: <folium.folium.Map at 0x230a0a49580>
```

1 The End !!