**Resolving IDs**

**Suggestions:**

1. It makes sense to save already resolved IDs in a dictionary and only query DB for those entities which are not in the dictionary yet. After resolving the entities you can save each instance with replaced subject and object in the same JSON format.

2. Around 2-10% of the instances will have unresolved entities in each set. They will produce <class 'IndexError'> error, just skip these instances.

3. There are might be problems with encoding when writing the resolved instances to a file. Running ‘export PYTHONIOENCODING=utf8’in the terminal can help to resolve these issues sometimes.

4. How to register an API key for querying the database:

<https://developers.google.com/knowledge-graph/>

Create the key in the Credentials folder

Enable it for the Knowledge Graph Search API in the Library folder

**Example of query using browser:**

<https://kgsearch.googleapis.com/v1/entities:search?ids=/m/0dl567&key=AIzaSyD0D6uGu2ady4Xv7WKjHQCwWBK2eP8LMEw&limit=1&indent=True>

**Example of query using python2:**

import urllib

api\_key = **YOUR KEY**

service\_url = 'https://kgsearch.googleapis.com/v1/entities:search'

entity = “/m/0dl567”

def IMD\_resolver(entity, api\_key, service\_url):

params = {

'ids': entity,

'limit': 1,

'indent': True,

'key': api\_key,

}

url = service\_url + '?' + urllib.urlencode(params)

try:

resource = urllib.urlopen(url)

response = json.loads(resource.read().decode('utf-8'))

entity\_name = response['itemListElement'][0]['result']['name']

print(entity\_name)

return entity\_name

except: # catch \*all\* exceptions

print('Error while resolving MID:')

print(sys.exc\_info()[0])

print(entity)

return 'False'

**Example of query using python3:**

import urllib

api\_key = **YOUR KEY**

service\_url = 'https://kgsearch.googleapis.com/v1/entities:search'

entity = “/m/0dl567”

def IMD\_resolver(entity, api\_key, service\_url):

params = {

'ids': entity,

'limit': 1,

'indent': True,

'key': api\_key,

}

url = service\_url + '?' + urllib.parse.urlencode(params)

try:

resource = urllib.request.urlopen(url)

response = json.loads(resource.read().decode('utf-8'))

entity\_name = response['itemListElement'][0]['result']['name']

#print(entity\_name)

return entity\_name

except: # catch \*all\* exceptions

print('Error while resolving MID:')

print(sys.exc\_info()[0])

print(entity)

return 'False'