**Code for third party API, in this case UniProt**

Generic website - <https://www.uniprot.org/help/api>

The code in section (**A**) below relates to retrieving entries by query (<https://www.uniprot.org/help/api_queries>)

(**A**)

To initiate a search for a specific accession number in UniProt:-

(i)

<https://www.uniprot.org/uniprot/?query=Q64303>

To initiate a search for a specific accession number in UniProt and give parameters for cellular location and family:-

(ii)

https://www.uniprot.org/uniprot/?query=accession:Q9BQI6&sort=score&columns=domain,domains,comment(DOMAIN),comment(SUBCELLULAR LOCATION),feature(INTRAMEMBRANE),feature(TOPOLOGICAL DOMAIN),feature(TRANSMEMBRANE),length&format=html

*Importantly, the final format of html can be modified to txt, tab and other delimiters.*

(**B**)

To obtain the UniProt information, we can use Pandas:-

*### Import relevant modules***import** pandas **as** pd  
  
*### Select the specific accession number to search from*url = **'https://www.uniprot.org/uniprot/?query=Q64303'***### Define a variable, here denoted as dfs (dataframes)*dfs = pd.read\_html(url)  
  
*### Print the results. Here we can select specific data frames which relate to tables from the website.*print(dfs[0:3])

This has been uploaded as SingleAccessionSearch.py

This format however does not work for query with specific fields. e.g. case (ii) above. The UniProt website has some on how do this and it (<https://www.uniprot.org/help/api_idmapping>)

import urllib,urllib2

url = 'https://www.uniprot.org/uploadlists/'

params = {

'from':'ACC',

'to':'P\_REFSEQ\_AC',

'format':'tab',

'query':'P13368 P20806 Q9UM73 P97793 Q17192'

}

data = urllib.urlencode(params)

request = urllib2.Request(url, data)

contact = "" # Please set a contact email address here to help us debug in case of problems (see https://www.uniprot.org/help/privacy).

request.add\_header('User-Agent', 'Python %s' % contact)

response = urllib2.urlopen(request)

page = response.read(200000)

I am currently working on this as urllib and urllib2 have changed and it is a little bit more tricky!

Please check the following python scripts:-

ParameterAccessionSearch.py

ParameterAccessionSearch2.py