```
In [1]:  import time
         import os
         import json
         import sys
         import csv
         import pandas as pd
         from selenium import webdriver
         from selenium.webdriver.chrome.service import Service
         from selenium.webdriver.common.by import By
         from selenium.webdriver.chrome.options import Options
```

```
In [2]:  zipsTop500 = [
             94123, 19104, 77494,90011, 75034,60629,11211,
             77449,75070,79936,11368,77084,11385,90650,8701,91331,11208,78660,10467,9
             92335,37013,11236,92336,94565,11373,11226,77479,90250,90805,90280,60618,
             29483,77573,11207,92683,11220,77429,91710,10456,11214,11234,10314,92154,
             11206,11230,75217,92376,60632,93307,92592,92704,10458,93722,11746,33027,
             60647,11221,94112,93033,93727,95076,78613,92345,91744,79938,92126,91709,
             78666,99301,60804,11355,27610,91335,95823,78542,37042,30024,11223,75035,
             28269,10453,60625,76244,10468,47906,78577,94533,78641,94544,77083,75211,
             76063,91706,78245,90706,96706,92105,11204,77450,33311,33024, 94080,84015
             30349,93550,60634,93257,10462,95035,75228,89108,37211,93274,94587,63376,
             33012,92805,33411,94536,10466,90255,10452,10002,93306,80013,19120,97701,
             75002,84095,85364,27587,11218,85032,33025,22191,30040,94110,34953,11375,
             93065,97007,19124,80219,30041,78046,30127,60505,97229,92563,60085,91766,
             60641,30281,98012,95123,11215,32828,92114,7055,85204,85225,87114,60640,2
             85301,77036,20002,30022,95687,76179,89031,78596,93230,60620,77845,90631,
             11209,37075,75243,83646,7087,10472,78045,23462,33015,92407,30135,90026,1
             92703,89115,89121,94541,99654,90022,30331,95758,78251,32218,85308,20019,
             23322,94015,92562,7002,17603,77072,60628,92201,38401,29681,11201,10027,1
             84404,14850,29072,33463,7093,46307,32822,28078,2301,30062,20147,30188,91
             60651,78664,94806,20878,95020,44256,43026,85326,40475,92346,78745, 60657
             91977,92404,95127,44035,91770,11372,85008,89123,78574,78250,33313,19143,
             75043,42101,92707,11434,90660,32210,92627,92504,11210,77373,79928,95608,
             75150,60073,74012,80634,78249,93905,19134,75040,95014,92647,91702,78228,
             34711,95111,78504,7047,37167,48180,78254,10312,90004,91732,53215,32818,3
             2148,77521,75227,34744, 29445,95051,93312,92057,28314,95828,33458,72401,
             956,60609,2155,37129,90042,33414,32808,83709,29485,92570,33125,78501,100
             77375,72712,85122,6010,37128,78753,76137,95112,33064,96818,44060,43230,9
             22192,21122,21117,60016
         ]

         zipsShortList = zipsTop500[0:8]
```

```
In [3]:  company_names = [
             'ulla johnson',
             #'mark cross',
             #'le specs',
             #'jl audio',
             #'obey clothing',
             #'roc skin care',
             #'hurley'
         ]
```

```python
#searhBar = browser.find_element(By.CLASS_NAME, 'gLFyf')
url_base = 'https://www.google.com/search?q='
```

In [4]:
```python
chrome_options = Options()
chrome_options.add_argument("--headless") # Ensure GUI is off
chrome_options.add_argument("--no-sandbox")

browser = webdriver.Chrome(options=chrome_options) #Chrome() Safari
```

In [5]:
```python
resultsList = []

for zipcode in zipsTop500:
    for company in company_names:
        current_combo = str(company.replace(" ", '+'))+'+'+str(zipcode)
        #print(current_combo)

        browser.get(url_base+current_combo) #Get the link

        for i in range(0,2):
            browser.execute_script("window.scrollTo(0,document.body.scrollHe
            time.sleep(3)
            #print('scrolling...')
            try:
                more = browser.find_element(By.CLASS_NAME, 'RVQdVd')
                more.click()
                #print('load more click!')
            except:
                pass
                #print('pass', current_combo, ' - ', i)
        print("~done scrolling~")

        results = browser.find_elements(By.CLASS_NAME, 'yuRUbf')
        print(current_combo + ' - ', str(len(results)))
        for idx, blueLink in enumerate(results, 1):
            resultInfo = {}
            resultInfo['pageRank'] = idx
            resultInfo['zipcode'] = zipcode
            resultInfo['search_combo'] = current_combo
            resultInfo['company'] = company
            resultInfo['link'] = blueLink.find_element(By.TAG_NAME, 'a').get
            resultInfo['link_name'] = blueLink.find_element(By.TAG_NAME, 'a'
            try:
                resultInfo['link_website'] = blueLink.find_element(By.TAG_NA
            except:
                pass
            resultsList.append(resultInfo)

        browser.quit()
        browser = webdriver.Chrome(options=chrome_options)

        #browser.get('https://www.espn.com/')
        #browser.get('https://www.reddit.com/')
        #browser.get('https://en.wikipedia.org/wiki/Taylor_Swift')
```

```
        time.sleep(5)
```

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~done scrolling~
ulla+johnson+94123 —   30
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ulla+johnson+77494 —   54
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ulla+johnson+75070 —   22
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~done scrolling~
ulla+johnson+30062 —  14
~done scrolling~
ulla+johnson+20147 —  9
~done scrolling~
ulla+johnson+30188 —  14
~done scrolling~
ulla+johnson+91762 —  13
~done scrolling~
ulla+johnson+32765 —  9
~done scrolling~
ulla+johnson+77346 —  14
~done scrolling~
ulla+johnson+98682 —  14
~done scrolling~
ulla+johnson+92115 —  33
~done scrolling~
ulla+johnson+8753 —  44
~done scrolling~
ulla+johnson+93906 —  54
~done scrolling~
ulla+johnson+60651 —  53
~done scrolling~
ulla+johnson+78664 —  49
~done scrolling~
ulla+johnson+94806 —  14
~done scrolling~
ulla+johnson+20878 —  55
~done scrolling~
ulla+johnson+95020 —  54
~done scrolling~
ulla+johnson+44256 —  14
~done scrolling~
ulla+johnson+43026 —  49
~done scrolling~
ulla+johnson+85326 —  33
~done scrolling~
ulla+johnson+40475 —  53
~done scrolling~
ulla+johnson+92346 —  54
~done scrolling~
ulla+johnson+78745 —  43
~done scrolling~
ulla+johnson+60657 —  53
~done scrolling~
ulla+johnson+20906 —  50
~done scrolling~
ulla+johnson+10463 —  7
~done scrolling~
ulla+johnson+80015 —  32
~done scrolling~
ulla+johnson+6902 —  9
~done scrolling~
ulla+johnson+28277 —  51
```

```
~done scrolling~
ulla+johnson+19720 –  53
~done scrolling~
ulla+johnson+10024 –  49
```

```
---------------------------------------------------------------------
WebDriverException                           Traceback (most recent call last)
Cell In[5], line 8
      5 current_combo = str(company.replace(" ", '+'))+'+'+str(zipcode)
      6 #print(current_combo)
----> 8 browser.get(url_base+current_combo) #Get the link
     10 for i in range(0,2):
     11     browser.execute_script("window.scrollTo(0,document.body.scrollH
eight)")

File ~/seleniumTesting/venv/lib/python3.11/site-packages/selenium/webdrive
r/remote/webdriver.py:449, in WebDriver.get(self, url)
    447 def get(self, url: str) -> None:
    448     """Loads a web page in the current browser session."""
--> 449     self.execute(Command.GET, {"url": url})

File ~/seleniumTesting/venv/lib/python3.11/site-packages/selenium/webdrive
r/remote/webdriver.py:440, in WebDriver.execute(self, driver_command, param
s)
    438 response = self.command_executor.execute(driver_command, params)
    439 if response:
--> 440     self.error_handler.check_response(response)
    441     response["value"] = self._unwrap_value(response.get("value", No
ne))
    442     return response

File ~/seleniumTesting/venv/lib/python3.11/site-packages/selenium/webdrive
r/remote/errorhandler.py:245, in ErrorHandler.check_response(self, respons
e)
    243         alert_text = value["alert"].get("text")
    244     raise exception_class(message, screen, stacktrace, alert_text)
# type: ignore[call-arg]  # mypy is not smart enough here
--> 245 raise exception_class(message, screen, stacktrace)

WebDriverException: Message: disconnected: not connected to DevTools
  (failed to check if window was closed: disconnected: not connected to Dev
Tools)
  (Session info: headless chrome=111.0.5563.110)
Stacktrace:
0   chromedriver                        0x0000000102fb1428 chromedriver + 4
899880
1   chromedriver                        0x0000000102f2ea23 chromedriver + 4
364835
2   chromedriver                        0x0000000102b78bf6 chromedriver + 4
74102
3   chromedriver                        0x0000000102b603c4 chromedriver + 3
73700
4   chromedriver                        0x0000000102b60133 chromedriver + 3
73043
5   chromedriver                        0x0000000102b7a782 chromedriver + 4
81154
6   chromedriver                        0x0000000102bfd27e chromedriver + 1
016446
7   chromedriver                        0x0000000102be2333 chromedriver + 9
06035
8   chromedriver                        0x0000000102bac55f chromedriver + 6
```

```
85407
9    chromedriver                        0x0000000102bada7e chromedriver + 6
90814
10   chromedriver                        0x0000000102f7e79e chromedriver + 4
691870
11   chromedriver                        0x0000000102f83961 chromedriver + 4
712801
12   chromedriver                        0x0000000102f8a2ff chromedriver + 4
739839
13   chromedriver                        0x0000000102f8485a chromedriver + 4
716634
14   chromedriver                        0x0000000102f56fce chromedriver + 4
530126
15   chromedriver                        0x0000000102fa45c8 chromedriver + 4
847048
16   chromedriver                        0x0000000102fa4747 chromedriver + 4
847431
17   chromedriver                        0x0000000102fb987f chromedriver + 4
933759
18   libsystem_pthread.dylib             0x00007ff807aaf259 _pthread_start +
125
19   libsystem_pthread.dylib             0x00007ff807aaac7b thread_start + 1
5
```

In [11]:
```python
print(len(resultsList))
#count unique values in list column python TO SEE HOW MANY ZIPS IT GOT THROU

df = pd.DataFrame(resultsList)
df.to_csv("select7_allzips.csv", index = False)
```

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