In [1]:
```
from csv import reader
opened_files = open("./glo/hacker.csv", encoding="UTF-8")
read_file = reader(opened_files)
list_hack = list(read_file)
list_hack_header = list_hack[0]
list_hack = list_hack[1:]
```

In [2]:
```
list_hack_header
```

Out[2]:
```
['id', 'title', 'url', 'num_points', 'num_comments', 'author', 'created_at']
```

In [3]:
```
list_hack[2000][6]
```

Out[3]:
```
'9/22/2016 19:25'
```

In [4]:
```
hack_len = len(list_hack)
```

In [5]:
```
hack_len
```

Out[5]:
```
293119
```

In [6]:
```
ask_hn = []
show_hn = []
other_hn = []
for checks in list_hack:
    hn = checks[1]
    hn = hn.lower()
    if hn.startswith("ask hn"):
        ask_hn.append(hn)
    elif hn.startswith("show hn"):
        show_hn.append(hn)
    else:
        other_hn.append(hn)
```

In [7]:
```
ask_hn = {}
show_hn = {}
other_hn = {}
for checks in list_hack:
    hn = checks[1]
    hn = hn.lower()
    if hn.startswith("ask hn"):
        ask_hn[title] = 1
    elif hn.startswith("show hn"):
        show_hn[title] = 2
    else:
        other_hn[title] = 3
    print(other_hn)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_7916\2742737620.py in <module>
     10         show_hn[title] = 2
     11     else:
---> 12         other_hn[title] = 3
     13     print(other_hn)

NameError: name 'title' is not defined
```

In [ ]:
```

```

In [8]:
```
ask_hn_len = len(ask_hn)
```

In [9]:
```
show_hn_len = len(show_hn)
```

In [10]:
```
other_hn_len = len(other_hn)
```

In [11]:
```
ask_hn_dic = {}
show_hn_dic = {}
other_hn_dic = {}
for checks in list_hack:
    hn = checks[1]
    hn = hn.lower()
    time = checks[6]
    comment = checks[4]
    if hn.startswith("ask hn"):
        ask_hn_dic[hn] = int(comment)
    elif hn.startswith("show hn"):
        show_hn_dic[hn] = int(comment)
    else:
        other_hn_dic[hn] = int(comment)
```

In [12]:
```
ask_hn_dic
```

Out[12]:
```
{'ask hn: what tld do you use for local development?': 7,
 'ask hn: how do you pass on your work when you die?': 3,
 'ask hn: how a dns problem can be limited to a geographic region?': 0,
 'ask hn: why join a fund when you can be an angel?': 3,
 'ask hn: someone uses stock trading as passive income?': 2,
 'ask hn: how hard would it be to make a cheap, hackable phone?': 1,
 'ask hn: what is that one deciding factor that makes a website successful?':
22,
 'ask hn: is the world really short of software developers?': 3,
 'ask hn: geolocalized public api?': 0,
 'ask hn: how to sell and idea?': 13,
 "ask hn: doesn't matter what p. say about u, as long as  do you agree?": 0,
 'ask hn: what react charting lib. do you use?': 0,
 'ask hn: is cloud storage a solved problem?': 3,
 'ask hn: can a marketer become a tech entrepreneur and start a startup?': 2,
 'ask hn: why would government security and hacking be any good?': 2,
 'ask hn: are americans really ready to give up their cars?': 0,
 'ask hn: have you ever visited example.com?': 6,
 'ask hn: what are the best practises for using ssh keys?': 97,
```

In [13]:
```
sum_ask_hn = ask_hn_dic.values()   #how to sum dictionary values

total_ask_hn = sum(sum_ask_hn)

print(total_ask_hn)
```

```
93950
```

In [14]:
```
sum_show_hn = show_hn_dic.values()   #how to sum dictionary values

total_show_hn = sum(sum_show_hn)

print(total_show_hn)
```

```
47727
```

In [15]:
```
sum_other_hn = other_hn_dic.values()   #how to sum dictionary values

total_other_hn = sum(sum_other_hn)

print(total_other_hn)
```

```
1552281
```

In [16]:
```
avg_ask_hn = total_ask_hn / ask_hn_len
```

```
---------------------------------------------------------------------------
ZeroDivisionError                         Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_7916\219837189.py in <module>
----> 1 avg_ask_hn = total_ask_hn / ask_hn_len

ZeroDivisionError: division by zero
```

In [17]:
```
avg_ask_hn = round(avg_ask_hn, 2)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_7916\2313350721.py in <module>
----> 1 avg_ask_hn = round(avg_ask_hn, 2)

NameError: name 'avg_ask_hn' is not defined
```

In [18]:
```
avg_ask_hn
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_7916\428830221.py in <module>
----> 1 avg_ask_hn

NameError: name 'avg_ask_hn' is not defined
```

In [19]:
```
avg_show_hn = total_show_hn / show_hn_len
```

```
---------------------------------------------------------------------------
ZeroDivisionError                         Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_7916\4033298824.py in <module>
----> 1 avg_show_hn = total_show_hn / show_hn_len

ZeroDivisionError: division by zero
```

In [20]:
```
avg_show_hn = round(avg_show_hn, 2)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_7916\3420587993.py in <module>
----> 1 avg_show_hn = round(avg_show_hn, 2)

NameError: name 'avg_show_hn' is not defined
```

In [21]:
```
avg_show_hn
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_7916\701310643.py in <module>
----> 1 avg_show_hn

NameError: name 'avg_show_hn' is not defined
```

In [74]:
```
avg_other_hn = total_other_hn / other_hn_len
```

In [75]:
```
avg_other_hn = round(avg_other_hn, 2)
```

In [76]:
```
avg_other_hn
```

Out[76]:
```
5.67
```

In [83]:
```
import datetime as dt
date_1_str = "December 24, 1984"
date_1_dt = dt.datetime.strptime(date_1_str, "%B %d, %Y")
```

In [85]:
```
print(date_1_dt)
```

```
1984-12-24 00:00:00
```

In [126]:
```
ask_hn[0]
```

Out[126]:
```
'ask hn: what tld do you use for local development?'
```

In [259]:
```
ask_comment_time = {}
other_comment_time = {}
for checks in ask_hn:
    for check in list_hack:
        comments = check[4]
        times = check[6]
        title = check[1]
        if checks == title:
            ask_comment_time[time] = int(comments)
        else:
            ask_comment_time[time] = int(comments)
ask_comment_time
```

Out[259]:
```
{'09-06-15 5:50': 0}
```

In [260]:
```
ask_hn
```

Out[260]:
```
{'meet the new evernote team': 1}
```

In [141]:
```
list_hack[0][6]
```

Out[141]:
```
'9/26/2016 3:26'
```

In [103]:
```
a = [2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
b = [3, 6, 9, 12, 15, 23, 34, 55, 66, 66, 68, 70]
```

In [108]:
```
app = {}
abb = {}
for checks in a:
    for check in b:
        if checks == check:
            app[checks] = 1
        else:
            abb[check] = 2
```

In [109]:
```
app
```

Out[109]:
```
{6: 1, 12: 1}
```

In [110]:
```
abb
```

Out[110]:
```
{3: 2, 6: 2, 9: 2, 12: 2, 15: 2, 23: 2, 34: 2, 55: 2, 66: 2, 68: 2, 70: 2}
```

In [139]:
```
results_list = []
for checks in ask_hn:
    results_list.append([list_hack[6], list_hack[4]])
```

In [140]:
```
results_list
```

Out[140]:
```
[['12578954',
   "Macalifa  A new open-source music app for UWP that won't suck",
   'http://forums.windowscentral.com/windows-phone-apps/440523-macalifa-new-o
pen-source-music-app-uwp-wont-suck.html',
   '1',
   '0',
   'thecodrr',
   '9/26/2016 3:06'],
  ['12578979',
   'How the Data Vault Enables the Next-Gen Data Warehouse and Data Lake',
   'https://www.talend.com/blog/2016/05/12/talend-and-Â\x93the-data-vaultÂ\x9
4',
   '1',
   '0',
   'markgainor1',
   '9/26/2016 3:14']],
 [['12578954',
   "Macalifa  A new open-source music app for UWP that won't suck",
   'http://forums.windowscentral.com/windows-phone-apps/440523-macalifa-new-o
```

In [ ]:
```
ask_hn_dic = {}
show_hn_dic = {}
other_hn_dic = {}
for checks in list_hack:
    hn = checks[1]
    hn = hn.lower()
    time = checks[6]
    comment = checks[4]
    if hn.startswith("ask hn"):
        ask_hn_dic[hn] = int(comment)
    elif hn.startswith("show hn"):
        show_hn_dic[hn] = int(comment)
    else:
        other_hn_dic[hn] = int(comment)
```

In [258]:
```
ask_hn_dic
```

Out[258]:
```
{'9/26/2016 2:53': 7,
 '9/26/2016 1:17': 3,
 '9/25/2016 22:57': 0,
 '9/25/2016 22:48': 3,
 '9/25/2016 21:50': 2,
 '9/25/2016 19:30': 1,
 '9/25/2016 19:22': 22,
 '9/25/2016 17:55': 3,
 '9/25/2016 15:48': 0,
 '9/25/2016 15:35': 13,
 '9/25/2016 15:28': 0,
 '9/25/2016 14:43': 0,
 '9/25/2016 14:17': 3,
 '9/25/2016 13:08': 2,
 '9/25/2016 11:27': 2,
 '9/25/2016 10:51': 0,
 '9/25/2016 10:47': 6,
 '9/25/2016 9:04': 97,
 '9/25/2016 7:09': 4,
```

In [265]:
```
ask_hn_results = []
show_hn_results = []
other_hn_results = []
ask_hn_dictionary = {}
for checks in list_hack:
    title = checks[1]
    title = title.lower()
    comm = checks[4]
    time = checks[6]
    if "-" in time:
        date, tim = time.split()
        hr, mn = tim.split(":")
        month, day, year = date.split("-")
        hr = int(hr)
        mn = int(mn)
        month = int(month)
        day = int(day)
        year = int(year)
        dt_object =dt.datetime(year, month, day, hr, mn)
        dt_format = dt_object.strftime("%Y/%m/%d %H:%M")
    else:
        date, tim = time.split()
        hr, mn = tim.split(":")
        month, day, year = date.split("/")
        hr = int(hr)
        mn = int(mn)
        month = int(month)
        day = int(day)
        year = int(year)
        dt_object = dt.datetime(year, month, day, hr, mn)
        dt_format = dt_object.strftime("%Y/%m/%d %H:%M")
    if title.startswith("ask hn"):
        ask_hn_results.append([dt_format[11:13], comm])
    elif title.startswith("show hn"):
        show_hn_results.append([dt_format[11:13], comm])
    else:
        other_hn_results.append([dt_format[11:13], comm])
dt_format[11:13]
```

Out[265]:
```
'05'
```

In [ ]:
```
if title.startswith("ask hn"):
        ask_hn_results.append([dt_format, comm])
    elif title.startswith("show hn"):
        show_hn_results.append([dt_format, comm])
    else:
        other_hn_results.append([dt_format, comm])
```

In [279]:
```
count_hour
```

Out[279]:
```
{'02': 269,
 '01': 282,
 '22': 383,
 '21': 518,
 '19': 552,
 '17': 587,
 '15': 646,
 '14': 513,
 '13': 444,
 '11': 312,
 '10': 282,
 '09': 222,
 '07': 226,
 '03': 271,
 '23': 343,
 '20': 510,
 '16': 579,
 '08': 257,
 '00': 301,
 '18': 614,
 '12': 342,
 '04': 243,
 '06': 234,
 '05': 209}
```

In [278]:
```
dict_hn = {}
count_hour = {}
for checks in ask_hn_results:
    hour = checks[0]
    comment = checks[1]
    if hour in dict_hn:
        dict_hn[hour] += int(comment)
        count_hour[hour] += 1
    else:
        dict_hn[hour] = int(comment)
        count_hour[hour] = 1
dict_hn
```

Out[278]:
```
{'02': 2996,
 '01': 2089,
 '22': 3372,
 '21': 4500,
 '19': 3954,
 '17': 5547,
 '15': 18525,
 '14': 4972,
 '13': 7245,
 '11': 2797,
 '10': 3013,
 '09': 1477,
 '07': 1585,
 '03': 2154,
 '23': 2297,
 '20': 4462,
 '16': 4466,
 '08': 2362,
 '00': 2277,
 '18': 4877,
 '12': 4234,
 '04': 2360,
 '06': 1587,
 '05': 1838}
```

In [276]:
```
ask_hn_results
```

Out[276]:
```
[['02', '7'],
 ['01', '3'],
 ['22', '0'],
 ['22', '3'],
 ['21', '2'],
 ['19', '1'],
 ['19', '22'],
 ['17', '3'],
 ['15', '0'],
 ['15', '13'],
 ['15', '0'],
 ['14', '0'],
 ['14', '3'],
 ['13', '2'],
 ['11', '2'],
 ['10', '0'],
 ['10', '6'],
 ['09', '97'],
 ['07', '4'],
```

In [266]:
```
ask_hn_results
```

Out[266]:
```
[['02', '7'],
 ['01', '3'],
 ['22', '0'],
 ['22', '3'],
 ['21', '2'],
 ['19', '1'],
 ['19', '22'],
 ['17', '3'],
 ['15', '0'],
 ['15', '13'],
 ['15', '0'],
 ['14', '0'],
 ['14', '3'],
 ['13', '2'],
 ['11', '2'],
 ['10', '0'],
 ['10', '6'],
 ['09', '97'],
 ['07', '4'],
```

In [261]:
```
list_hack[0][6]
```

Out[261]:
```
'9/26/2016 3:26'
```

In [257]:
```
ask_hn_results
```

Out[257]:
```
[['2016/09/26 02:53', '7'],
 ['2016/09/26 01:17', '3'],
 ['2016/09/25 22:57', '0'],
 ['2016/09/25 22:48', '3'],
 ['2016/09/25 21:50', '2'],
 ['2016/09/25 19:30', '1'],
 ['2016/09/25 19:22', '22'],
 ['2016/09/25 17:55', '3'],
 ['2016/09/25 15:48', '0'],
 ['2016/09/25 15:35', '13'],
 ['2016/09/25 15:28', '0'],
 ['2016/09/25 14:43', '0'],
 ['2016/09/25 14:17', '3'],
 ['2016/09/25 13:08', '2'],
 ['2016/09/25 11:27', '2'],
 ['2016/09/25 10:51', '0'],
 ['2016/09/25 10:47', '6'],
 ['2016/09/25 09:04', '97'],
 ['2016/09/25 07:09', '4'],
```

In [256]:
```
ask_hn_result = {}
for checks in ask_hn_results:
    time_stamp = checks[0]
    time_stamp = str(time_stamp)
    time_stamp = time_stamp[11:13]
```

```
02
01
22
22
21
19
19
17
15
15
15
14
14
13
11
10
10
09
07
```

In [216]:
```
ask_hn_results[0][0:2]
```

Out[216]:
```
['2016/09/26 02:53', '7']
```

In [267]:
```
ask_dictionary = {}
for checks in ask_hn_results:
    time = checks[0]
    comment = checks[1]
    if time in ask_dictionary:
        ask_dictionary[time] += 1
    else:
        ask_dictionary[time] = 1
```

In [268]:
```
ask_dictionary
```

Out[268]:
```
{'': 9139}
```

In [200]:
```
list_hack[6][6]
```

Out[200]:
```
'9/26/2016 3:06'
```

In [194]:
```
import datetime as dt
```

In [187]:
```

```

In [188]:
```
ask_dictionary
```

Out[188]:
```
{'2': 1256,
 '1': 2832,
 '9': 319,
 '7': 331,
 '3': 430,
 '8': 345,
 '0': 465,
 '4': 293,
 '6': 330,
 '5': 385,
 ':': 1041,
 ' ': 1112}
```

In [186]:
```
ask_hn_results
```

Out[186]:
```
[['2', '7'],
 ['1', '3'],
 ['2', '0'],
 ['2', '3'],
 ['2', '2'],
 ['1', '1'],
 ['1', '22'],
 ['1', '3'],
 ['1', '0'],
 ['1', '13'],
 ['1', '0'],
 ['1', '0'],
 ['1', '3'],
 ['1', '2'],
 ['1', '2'],
 ['1', '0'],
 ['1', '6'],
 ['9', '97'],
 ['7', '4'],
```

In [ ]:
```

```

In [157]:
```
list_hack[293118]
```

Out[157]:
```
['10176903',
 'Toyota Establishes Research Centers with MIT and Stanford for AI Research',
 'http://newsroom.toyota.co.jp/en/detail/9233109/',
 '4',
 '0',
 'tim_sw',
 '09-06-15 5:50']
```

In [160]:
```
dico = {}
dico["name"] = "rilwan"
dico
```

Out[160]:
```
{'name': 'rilwan'}
```

In [191]:
```
list_hack[100][6]
```

Out[191]:
```
'9/25/2016 21:51'
```

In [ ]:
```
swap_avg_by_hour = []

for row in avg_by_hour:
    swap_avg_by_hour.append([row[1], row[0]])

print(swap_avg_by_hour)

sorted_swap = sorted(swap_avg_by_hour, reverse=True)

sorted_swap
```

In [281]:
```
import numpy as np
variable = np.array([2, 4, 6, 8])
```

```
print(variable)
```

In [ ]:
```

```