In [2]:

```
# Read in the data.
import csv
file=open('hacker_news.csv')
hn=list(csv.reader(file))
print(hn[:5])
```

```
[['id', 'title', 'url', 'num_points', 'num_comments', 'author', 'created_a
t'], ['12224879', 'Interactive Dynamic Video', 'http://www.interactivedynami
cvideo.com/', '386', '52', 'ne0phyte', '8/4/2016 11:52'], ['10975351', 'How
to Use Open Source and Shut the Fuck Up at the Same Time', 'http://huenivers
e.com/2016/01/26/how-to-use-open-source-and-shut-the-fuck-up-at-the-same-tim
e/', '39', '10', 'josep2', '1/26/2016 19:30'], ['11964716', "Florida DJs May
Face Felony for April Fools' Water Joke", 'http://www.thewire.com/entertainm
ent/2013/04/florida-djs-april-fools-water-joke/63798/', '2', '1', 'vezycas
h', '6/23/2016 22:20'], ['11919867', 'Technology ventures: From Idea to Ente
rprise', 'https://www.amazon.com/Technology-Ventures-Enterprise-Thomas-Byer
s/dp/0073523429', '3', '1', 'hswarna', '6/17/2016 0:01']]
```

In [3]:

```
# Remove the headers.
headers=hn[0]
hn=hn[1:]
print(headers)
print(hn[:5])
```

```
['id', 'title', 'url', 'num_points', 'num_comments', 'author', 'created_at']
[['12224879', 'Interactive Dynamic Video', 'http://www.interactivedynamicvid
eo.com/', '386', '52', 'ne0phyte', '8/4/2016 11:52'], ['10975351', 'How to U
se Open Source and Shut the Fuck Up at the Same Time', 'http://hueniverse.co
m/2016/01/26/how-to-use-open-source-and-shut-the-fuck-up-at-the-same-time/',
'39', '10', 'josep2', '1/26/2016 19:30'], ['11964716', "Florida DJs May Face
Felony for April Fools' Water Joke", 'http://www.thewire.com/entertainment/2
013/04/florida-djs-april-fools-water-joke/63798/', '2', '1', 'vezycash', '6/
23/2016 22:20'], ['11919867', 'Technology ventures: From Idea to Enterpris
e', 'https://www.amazon.com/Technology-Ventures-Enterprise-Thomas-Byers/dp/0
073523429', '3', '1', 'hswarna', '6/17/2016 0:01'], ['10301696', 'Note by No
te: The Making of Steinway L1037 (2007)', 'http://www.nytimes.com/2007/11/0
7/movies/07stein.html?_r=0', '8', '2', 'walterbell', '9/30/2015 4:12']]
```

In [4]:

```
ask_posts=[]
show_posts=[]
other_posts=[]

for post in hn:
    title=post[1]
    if title.lower().startswith("ask hn"):
        ask_posts.append(post)
    elif title.lower().startswith("show hn"):
        show_posts.append(post)
    else:
        other_posts.append(post)

print(len(ask_posts))
print(len(show_posts))
print(len(other_posts))
```

```
1744
1162
17194
```

In [5]:

```
# Calculate the average number of comments `Ask HN` posts receive.
total_ask_comments=0

for post in ask_posts:
    total_ask_comments+=int(post[4])

avg_ask_comments=total_ask_comments/len(ask_posts)
print(avg_ask_comments)
```

```
14.038417431192661
```

In [ ]:

```
total_show_comments=0

for post in show_posts:
    total_show_comments+=int(post[4])

avg_show_comments=total_show_comments/len(show_posts)
print(avg_show_comments)
```

In [7]:

```
import datetime as dt

result_list=[]

for post in ask_posts:
    result_list.append([post[6], int(post[4])])

comments_by_hour={}
counts_by_hour={}
date_format="%m/%d/%Y %H:%M"

for each_row in result_list:
    date=each_row[0]
    comment=each_row[1]
    time=dt.datetime.strptime(date, date_format).strftime("%H")
    if time in counts_by_hour:
        comments_by_hour[time]+=comment
        counts_by_hour[time]+=1
    else:
        comments_by_hour[time]=comment
        counts_by_hour[time] =1

print(comments_by_hour)
```

Out[7]:

```
{'00': 447,
 '01': 683,
 '02': 1381,
 '03': 421,
 '04': 337,
 '05': 464,
 '06': 397,
 '07': 267,
 '08': 492,
 '09': 251,
 '10': 793,
 '11': 641,
 '12': 687,
 '13': 1253,
 '14': 1416,
 '15': 4477,
 '16': 1814,
 '17': 1146,
 '18': 1439,
 '19': 1188,
 '20': 1722,
 '21': 1745,
 '22': 479,
 '23': 543}
```

In [8]:

```
avg_by_hour=[]

for hr in comments_by_hour:
    avg_by_hour.append([hr, comments_by_hour[hr]/counts_by_hour[hr]])

print(avg_by_hour)
```

```
[['00', 8.127272727272727], ['02', 23.810344827586206], ['17', 11.46], ['1
0', 13.440677966101696], ['18', 13.20183486238532], ['04', 7.17021276595744
7], ['09', 5.5777777777777775], ['21', 16.009174311926607], ['05', 10.086956
52173913], ['15', 38.5948275862069], ['07', 7.852941176470588], ['06', 9.022
727272727273], ['01', 11.383333333333333], ['22', 6.746478873239437], ['08',
10.25], ['20', 21.525], ['13', 14.741176470588234], ['19', 10.8], ['23', 7.9
85294117647059], ['03', 7.796296296296297], ['14', 13.233644859813085], ['1
6', 16.796296296296298], ['12', 9.41095890410959], ['11', 11.05172413793103
4]]
```

In [9]:

```
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)
print(sorted_swap)
```

```
[[8.127272727272727, '00'], [23.810344827586206, '02'], [11.46, '17'], [13.4
40677966101696, '10'], [13.20183486238532, '18'], [7.170212765957447, '04'],
[5.5777777777777775, '09'], [16.009174311926607, '21'], [10.08695652173913,
'05'], [38.5948275862069, '15'], [7.852941176470588, '07'], [9.0227272727272
73, '06'], [11.383333333333333, '01'], [6.746478873239437, '22'], [10.25, '0
8'], [21.525, '20'], [14.741176470588234, '13'], [10.8, '19'], [7.9852941176
47059, '23'], [7.796296296296297, '03'], [13.233644859813085, '14'], [16.796
296296296298, '16'], [9.41095890410959, '12'], [11.051724137931034, '11']]
[[38.5948275862069, '15'], [23.810344827586206, '02'], [21.525, '20'], [16.7
96296296296298, '16'], [16.009174311926607, '21'], [14.741176470588234, '1
3'], [13.440677966101696, '10'], [13.233644859813085, '14'], [13.20183486238
532, '18'], [11.46, '17'], [11.383333333333333, '01'], [11.051724137931034,
'11'], [10.8, '19'], [10.25, '08'], [10.08695652173913, '05'], [9.4109589041
0959, '12'], [9.022727272727273, '06'], [8.127272727272727, '00'], [7.985294
117647059, '23'], [7.852941176470588, '07'], [7.796296296296297, '03'], [7.1
70212765957447, '04'], [6.746478873239437, '22'], [5.5777777777777775, '0
9']]
```

In [ ]:

```
print("Top 5 Hours for 'Ask HN' Comments")
for avg, hr in sorted_swap[:5]:
    print(
        "{}: {:.2f} average comments per post".format(
            dt.datetime.strptime(hr, "%H").strftime("%H:%M"),avg
        )
    )
```