Find the most popular status entry (awk, sort, cat, csvcut, head)

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To do this analysis efficiently, we'll use the command line language called `awk`, a tool that allows you to filter, extract and transform data files. awk is a very useful tool to put in your bag of tricks. But let's watch the following video lecture first!

```
bigdata@bash:          $ awk -F...
| head
s_id,0
91065_10154123560186086,6204
91065_10154123362896086,17987
91065_10154123319126086,2735
91065_10154123234321086,17227
91065_10154123219076086,16
91065_10154123180346086,
91065_10154123132896086,
91065_10154123136121086,
91065_10154123102181086,
bigdata@bash:          $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1"," total; total=0 }' fbrea
| sort -n -r  -t"," -k 2
91065_10154089837331086,66
bigdata@bash:          $
```

Find the most popular status entry

To start, let's look at a very simple awk program to output every line of our `facebook.csv` file, where we specify the delimiter of the file (comma) using the facebook.csv file, where we specify the delimiter of the file (comma) using the -F option:

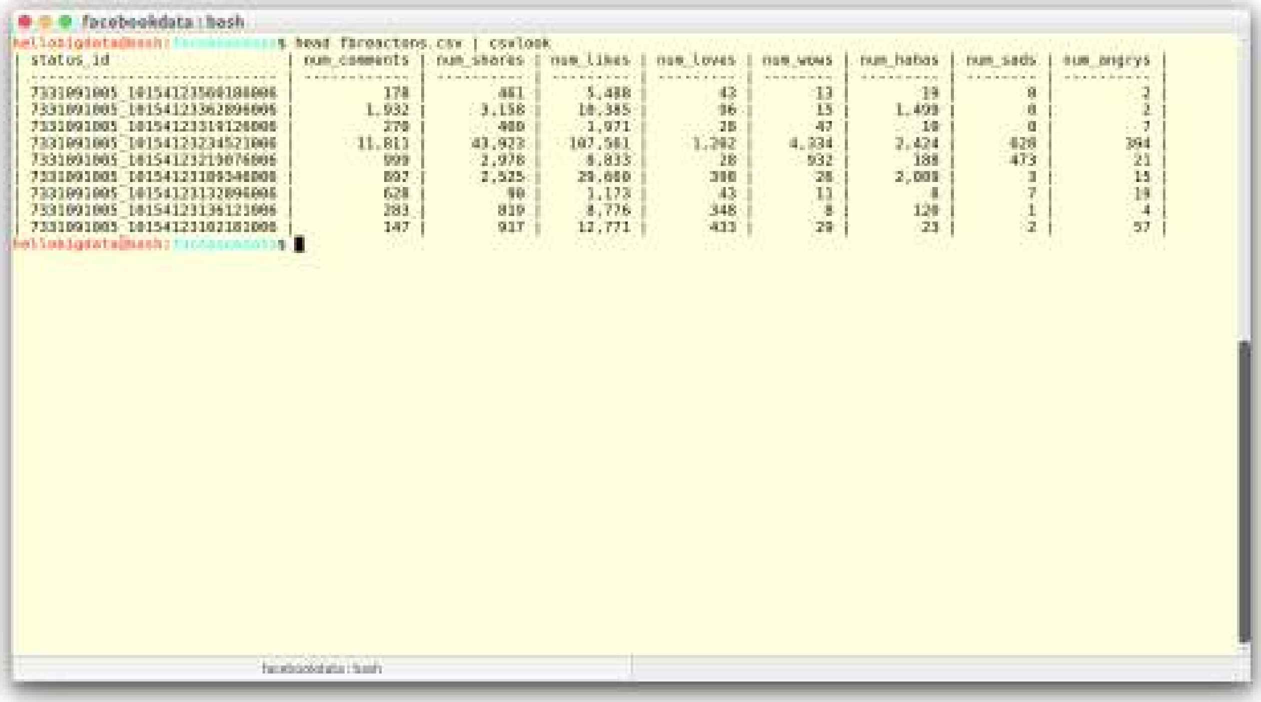
```
awk -F "," '{ print; }' facebookdata.csv
```

You should see the entire file being output to the screen. To only output the status ids (column 1), use the dollar sign (`$`) to denote columns as follows:

```
awk -F "," '{ print $1; }' facebookdata.csv | head
```

However, since the dataset has quoted (`"text"`) cells we will use `csvcut` to extract the columns, e.g., we want to extract the column `1,8-15` into a file called `fbreactions.csv`. The idea is to sum-up all the reactions (columns `8 + ... + 15`) on each FB status and then find the status which had the maximum number of reactions.

```
csvcut -c 2,8-15 facebookdata.csv > fbreactons.csv
```



```
hellobigdata@bash:[illegible]$ head fbreactons.csv | csvlook
| status_id                          | num_comments | num_shares | num_likes | num_loves | num_wows | num_hahas | num_sads | num_angrys |
| ---------------------------------- | ------------ | ---------- | --------- | --------- | -------- | --------- | -------- | ---------- |
| 7331091005_10154123560108006       |          178 |        461 |     5,488 |        43 |       13 |        19 |        0 |          2 |
| 7331091005_10154123362896006       |        1,932 |      3,158 |    10,385 |        96 |       15 |     1,499 |        0 |          2 |
| 7331091005_10154123319128006       |          270 |        400 |     1,971 |        28 |       47 |        10 |        0 |          7 |
| 7331091005_10154123234523006       |       11,813 |     43,923 |   107,581 |     1,202 |    4,334 |     2,424 |      628 |        394 |
| 7331091005_10154123219076006       |          999 |      2,978 |     8,833 |        28 |      932 |       188 |      473 |         21 |
| 7331091005_10154123109348006       |          897 |      2,525 |    29,080 |       398 |       28 |     2,008 |        3 |         15 |
| 7331091005_10154123132096006       |          628 |         90 |     1,173 |        43 |       11 |         8 |        7 |         18 |
| 7331091005_10154123136123006       |          283 |        819 |     8,776 |       348 |        8 |       120 |        1 |          4 |
| 7331091005_10154123102181006       |          147 |        917 |    12,771 |       433 |       29 |        23 |        2 |         57 |
hellobigdata@bash:[illegible]$
```

Extract all the reactions into a file fbreactions.csv

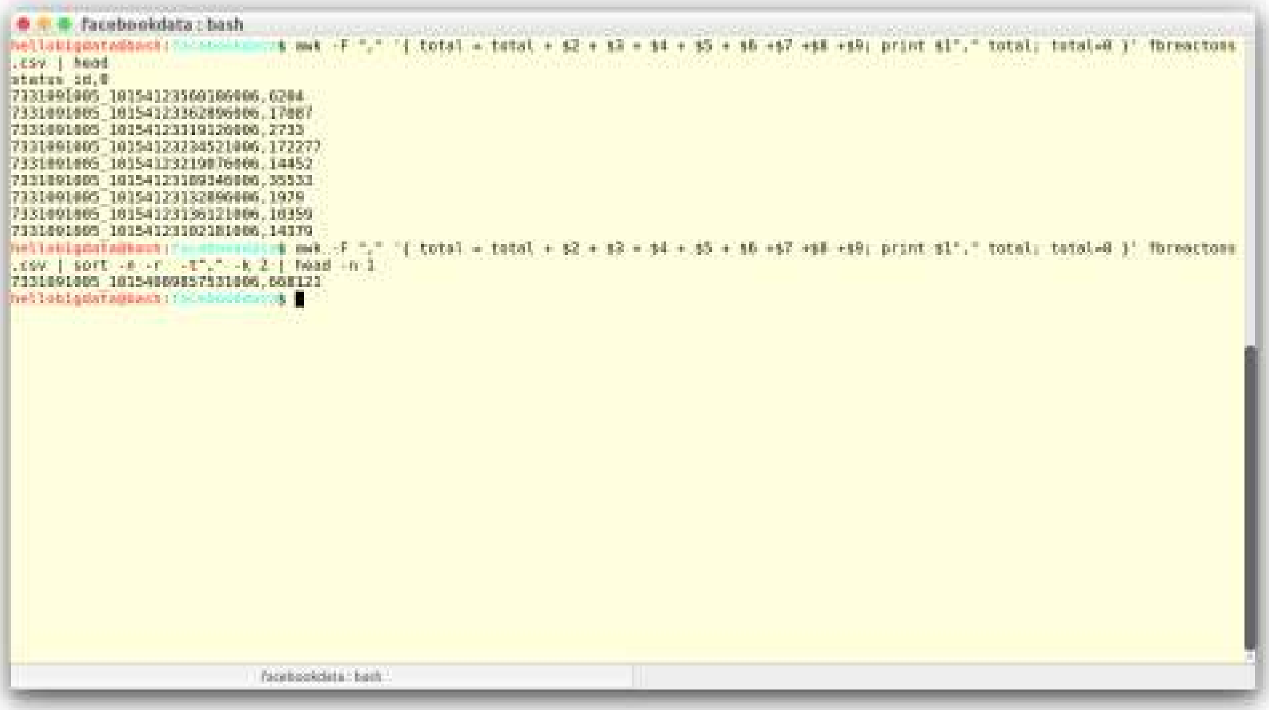
To calculate the total number of reactions on each entry (status), all we need to do is horizotally add up all the numbers from the columns #8-15 and we do this easily with awk, as follows:

```
awk -F "," '{ total = total + $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1"," total; total=0
awk -F "," '{ total = total + $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1"," total; total=0
fbreactons.csv | \
head
```

Let’s pay attention to the `awk` statetment, which not only sums up the columns side by side, but also on each line prints two output (`status id` and `total` number of reaction on that row). Finally, at the end of each iteration, it nulls the `total=0`.

To get the status with `max` reactions, next, we sort the status ids, based on the number of reactions (column 2) using the `sort -n -r -t"," -k 2` function, which tells the system to sort out the piped (`|`) output numerically (`-n`), on the column 2 (`-k 2`) wich is delimited by a commma (`,`):

```
awk -F "," '{ total = total + $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1"," total; total=0
fbreactons.csv | \
sort -n -r  -t"," -k 2 | \
head -n 1
```



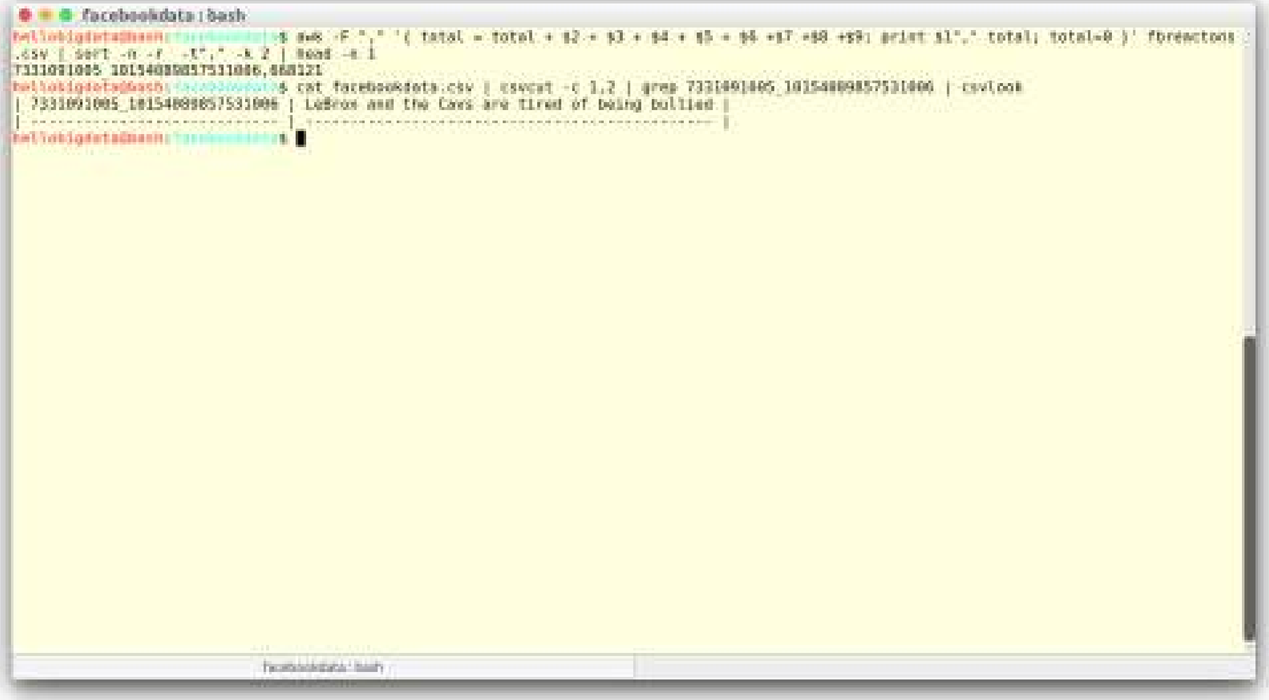
```
hellobigdata@bash:~/facebookdata$ awk -F "," '{ total = total + $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1"," total; total=0 }' fbreactons
.csv | head
status_id,0
7331091005_10154123560186006,6284
7331091005_10154123362896006,17087
7331091005_10154123319126006,2733
7331091005_10154123234521006,172277
7331091005_10154123219876006,14452
7331091005_10154123189346006,35533
7331091005_10154123132896006,1979
7331091005_10154123136121006,10359
7331091005_10154123102181006,14379
hellobigdata@bash:~/facebookdata$ awk -F "," '{ total = total + $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1"," total; total=0 }' fbreactons
.csv | sort -n -r  -t"," -k 2 | head -n 1
7331091005_10154089857531006,668121
hellobigdata@bash:~/facebookdata$ █
```

The final output, tells us that the status id: `7331091005_10154089857531006` had the maximum number of reaction of total `668121`.

If we now use `grep`, we can easily find the message which had the largest number of reactions.

```
cat facebookdata.csv | grep 7331091005_10154089857531006
```

Let's make it little more beautiful using `csvcut`:



```
hello@bigdata@bash:~/facebookdata$ awk -F "," '{ total = total + $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1"," total; total=0 }' fbreactons
.csv | sort -n -r  -t"," -k 2 | head -n 1
7331091005 10154089857531006,868121
hello@bigdata@bash:~/facebookdata$ cat facebookdata.csv | csvcut -c 1,2 | grep 7331091005_10154089857531006 | csvlook
| 7331091005_10154089857531006 | LeBron and the Cavs are tired of being bullied |
| ---------------------------- | ---------------------------------------------- |
hello@bigdata@bash:~/facebookdata$ 
```

FB Awk total find

However, we want to make it more interesting! let's efficently pipe all the steps shown above into a single command and find the message as follows:

```
cat facebookdata.csv | \
csvcut -c 2,8-15 | \
awk -F "," '{ total = total + $2 + $3 + $4 + $5 + $6 +$7 +$8 +$9; print $1","total; total=0 }
sort -n -r  -t"," -k 2 | \
head -n 1
```

Do you want to know more?

'awk' man page