Operation Analytics and Investigating Metric Spike

(Advanced SQL)

Project Description:

This project is about operation analytics and investigating metric spike. Operation analytics is type of business analytics. It focuses on improving existing operations. There are two case studies, first one is job data case study and second is investigating metric spike. With the help of this, the company will find the areas on which it should improve.

I will do analysis using various advanced SQL queries. I am going to find various information like number of jobs reviewed, percentage share of each language, etc.

> Approach:

First, I will do schema queries. Schema queries are the queries which create database also insert data in database. After creating database, I will do one by one analysis of given question.

I will focus on to evaluating data and getting more accurate information from the raw data.

> Tech-Stack Used:

MySQL 8.0

> Insights:

During this project I worked on different commands of SQL. Also, project helps me to gain more knowledge about SQL doing the hands-on. I learned about the date functions also windows function of SQL. I used date function, OVER function, etc. to get results.

> Result:

1. Case Study 1 (Job Data):

A. Number of jobs reviewed: Amount of jobs reviewed over time:

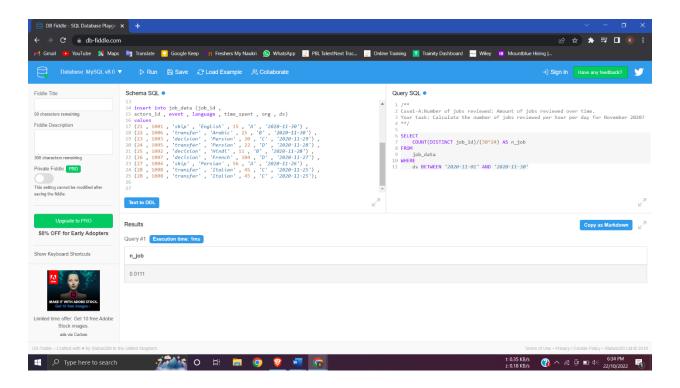
SQL Command:

```
SELECT
COUNT(DISTINCT job_id)/(30*24) AS n_job
FROM
job_data
WHERE
ds BETWEEN '2020-11-01' AND '2020-11-30';
```

Output:

```
n_job

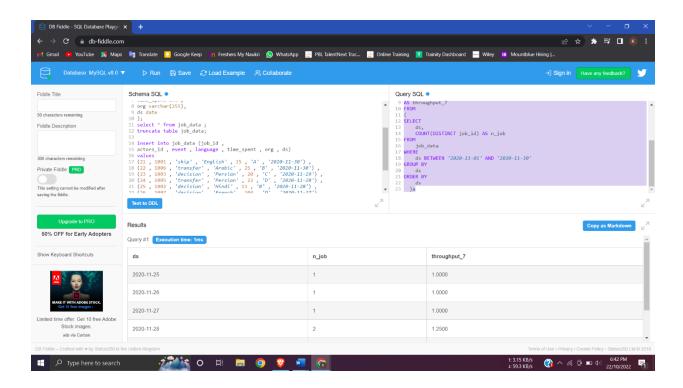
0.0111
```



B. Throughput: It is the no. of events happening per second:

```
SELECT
                 ds,
                 n_job,
                 AVG(n_job) OVER(ORDER BY ds ROWS BETWEEN 6 PRECEDING
AND CURRENT ROW)
           AS throughput_7
           FROM
     (
           SELECT
                 COUNT(DISTINCT job_id) AS n_job
           FROM
                 job_data
           WHERE
                 ds BETWEEN '2020-11-01' AND '2020-11-30'
           GROUP BY
                 ds
           ORDER BY
                 ds
      )a
```

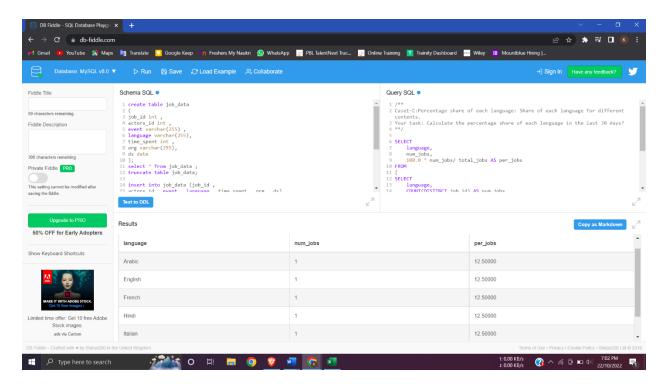
| ds | n_job | throughput_7 |
|------------|-------|--------------|
| 25/11/2020 | 1 | 1.0000 |
| 26/11/2020 | 1 | 1.0000 |
| 27/11/2020 | 1 | 1.0000 |
| 28/11/2020 | 2 | 1.2500 |
| 29/11/2020 | 1 | 1.2000 |
| 30/11/2020 | 2 | 1.3333 |



C. Percentage share of each language: Share of each language for different contents:

```
SELECT
language,
num_jobs,
100.0 * num_jobs/ total_jobs AS per_jobs
FROM
(
SELECT
language,
COUNT(DISTINCT job_id) AS num_jobs
FROM
job_data
GROUP BY
language
) a
CROSS JOIN
SELECT
COUNT(DISTINCT job_id) AS total_jobs
FROM job_data
) b
```

| language | num_jobs | per_jobs |
|----------|----------|----------|
| Arabic | 1 | 12.50000 |
| English | 1 | 12.50000 |
| French | 1 | 12.50000 |
| Hindi | 1 | 12.50000 |
| Italian | 1 | 12.50000 |
| Persian | 3 | 37.50000 |

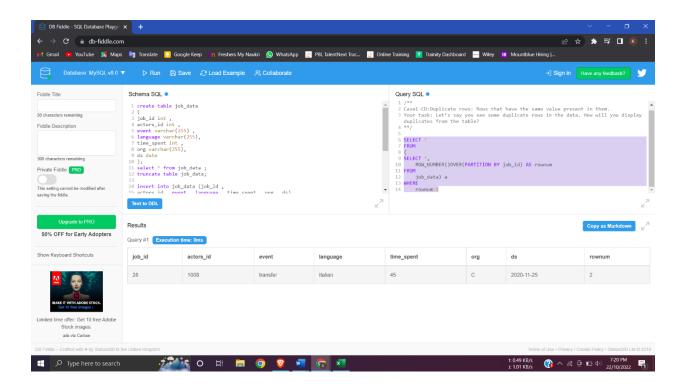


D. Duplicate rows: Rows that have the same value present in them:

job_data) a WHERE rownum>1

Output:

| job_id | actors_id | event | language | time_spent | org | ds | rownum |
|--------|-----------|----------|----------|------------|-----|------------|--------|
| 28 | 1008 | transfer | Italian | 45 | C | 25/11/2020 | 2 |

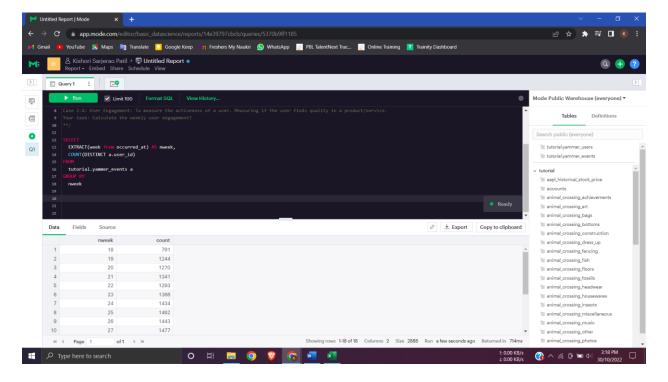


2. Case Study 2 (Investigating metric spike):

A. User Engagement: To measure the activeness of a user. Measuring if the user finds quality in a product/service:

```
SELECT
EXTRACT(week from occurred_at) AS nweek,
COUNT(DISTINCT a.user_id)
FROM
tutorial.yammer_events a
GROUP BY
nweek;
```

| nweek | count |
|-------|-------|
| 18 | 791 |
| 19 | 1244 |
| 20 | 1270 |
| 21 | 1341 |
| 22 | 1293 |
| 23 | 1366 |
| 24 | 1434 |
| 25 | 1462 |
| 26 | 1443 |
| 27 | 1477 |
| 28 | 1556 |
| 29 | 1556 |
| 30 | 1593 |
| 31 | 1685 |
| 32 | 1483 |
| 33 | 1438 |
| 34 | 1412 |
| 35 | 1442 |



B. User Growth: Amount of users growing over time for a product:

SQL Command:

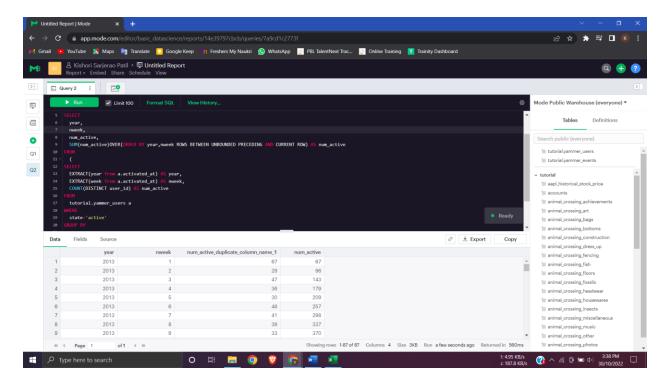
```
SELECT
year,
nweek,
num_active,
 SUM(num_active)OVER(ORDER BY year,nweek ROWS BETWEEN UNBOUNDED
PRECEDING AND CURRENT ROW) AS num_active
FROM
(
SELECT
EXTRACT(year from a.activated_at) AS year,
EXTRACT(week from a.activated_at) AS nweek,
COUNT(DISTINCT user_id) AS num_active
FROM
 tutorial.yammer_users a
WHERE
state='active'
GROUP BY
year,
nweek
ORDER BY
year,
nweek
 ) a
```

Output:

| year | nweek | num_active_duplicate_column_name_1 | num_active |
|------|-------|------------------------------------|------------|
| 2013 | 1 | 67 | 67 |
| 2013 | 2 | 29 | 96 |
| 2013 | 3 | 47 | 143 |
| 2013 | 4 | 36 | 179 |
| 2013 | 5 | 30 | 209 |
| 2013 | 6 | 48 | 257 |
| 2013 | 7 | 41 | 298 |
| 2013 | 8 | 39 | 337 |
| 2013 | 9 | 33 | 370 |
| 2013 | 10 | 43 | 413 |
| 2013 | 11 | 33 | 446 |
| 2013 | 12 | 32 | 478 |
| 2013 | 13 | 33 | 511 |
| 2013 | 14 | 40 | 551 |

| 2013 | 15 | 35 | 586 |
|------|----|-----|------|
| 2013 | 16 | 42 | 628 |
| 2013 | 17 | 48 | 676 |
| 2013 | 18 | 48 | 724 |
| 2013 | 19 | 45 | 769 |
| 2013 | 20 | 55 | 824 |
| 2013 | 21 | 41 | 865 |
| 2013 | 22 | 49 | 914 |
| 2013 | 23 | 51 | 965 |
| 2013 | 24 | 51 | 1016 |
| 2013 | 25 | 46 | 1062 |
| 2013 | 26 | 57 | 1119 |
| 2013 | 27 | 57 | 1176 |
| 2013 | 28 | 52 | 1228 |
| 2013 | 29 | 71 | 1299 |
| 2013 | 30 | 66 | 1365 |
| 2013 | 31 | 69 | 1434 |
| 2013 | 32 | 66 | 1500 |
| 2013 | 33 | 73 | 1573 |
| 2013 | 34 | 70 | 1643 |
| 2013 | 35 | 80 | 1723 |
| 2013 | 36 | 65 | 1788 |
| 2013 | 37 | 71 | 1859 |
| 2013 | 38 | 84 | 1943 |
| 2013 | 39 | 92 | 2035 |
| 2013 | 40 | 81 | 2116 |
| 2013 | 41 | 88 | 2204 |
| 2013 | 42 | 74 | 2278 |
| 2013 | 43 | 97 | 2375 |
| 2013 | 44 | 92 | 2467 |
| 2013 | 45 | 97 | 2564 |
| 2013 | 46 | 94 | 2658 |
| 2013 | 47 | 82 | 2740 |
| 2013 | 48 | 103 | 2843 |
| 2013 | 49 | 96 | 2939 |
| 2013 | 50 | 117 | 3056 |
| 2013 | 51 | 123 | 3179 |
| 2013 | 52 | 104 | 3283 |
| 2014 | 1 | 91 | 3374 |
| 2014 | 2 | 122 | 3496 |

| 2014 | 3 | 112 | 3608 |
|------|----|-----|------|
| 2014 | 4 | 113 | 3721 |
| 2014 | 5 | 130 | 3851 |
| 2014 | 6 | 132 | 3983 |
| 2014 | 7 | 135 | 4118 |
| 2014 | 8 | 127 | 4245 |
| 2014 | 9 | 127 | 4372 |
| 2014 | 10 | 135 | 4507 |
| 2014 | 11 | 152 | 4659 |
| 2014 | 12 | 132 | 4791 |
| 2014 | 13 | 151 | 4942 |
| 2014 | 14 | 161 | 5103 |
| 2014 | 15 | 166 | 5269 |
| 2014 | 16 | 165 | 5434 |
| 2014 | 17 | 176 | 5610 |
| 2014 | 18 | 172 | 5782 |
| 2014 | 19 | 160 | 5942 |
| 2014 | 20 | 186 | 6128 |
| 2014 | 21 | 177 | 6305 |
| 2014 | 22 | 186 | 6491 |
| 2014 | 23 | 197 | 6688 |
| 2014 | 24 | 198 | 6886 |
| 2014 | 25 | 222 | 7108 |
| 2014 | 26 | 210 | 7318 |
| 2014 | 27 | 199 | 7517 |
| 2014 | 28 | 223 | 7740 |
| 2014 | 29 | 215 | 7955 |
| 2014 | 30 | 228 | 8183 |
| 2014 | 31 | 234 | 8417 |
| 2014 | 32 | 189 | 8606 |
| 2014 | 33 | 250 | 8856 |
| 2014 | 34 | 259 | 9115 |
| 2014 | 35 | 266 | 9381 |

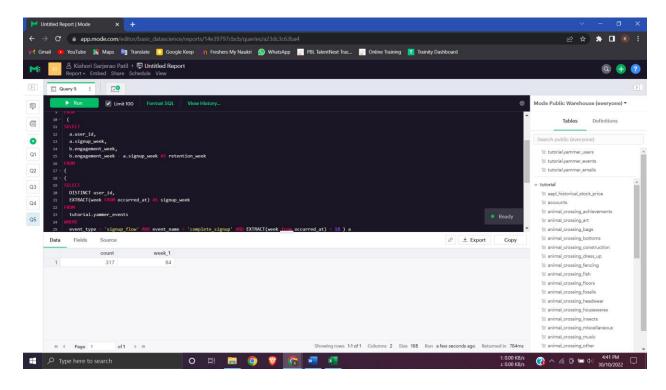


C. Weekly Retention: Users getting retained weekly after signing-up for a product:

```
SELECT
      COUNT(user_id),
      SUM(CASE WHEN retention_week = 1 THEN 1 ELSE 0 END) as week_1
FROM
SELECT
      a.user_id,
      a.signup_week,
      b.engagement_week,
      b.engagement_week - a.signup_week AS retention_week
FROM
SELECT
      DISTINCT user_id,
      EXTRACT(week FROM occurred_at) AS signup_week
FROM
      tutorial.yammer_events
WHERE
      event_type = 'signup_flow' AND event_name = 'complete_signup' AND
EXTRACT(week from occurred_at) = 18) a
LEFT JOIN
(
```

```
SELECT
DISTINCT user_id,
EXTRACT(week FROM occurred_at) AS engagement_week
FROM
tutorial.yammer_events
WHERE
event_type = 'engagement'
) b
ON
a.user_id = b.user_id
)
ORDER BY
a.user_id
) a
```

| count | week_1 |
|-------|--------|
| 317 | 64 |



D. Weekly Engagement: To measure the activeness of a user. Measuring if the user finds quality in a product/service weekly:

SQL Command:

SELECT

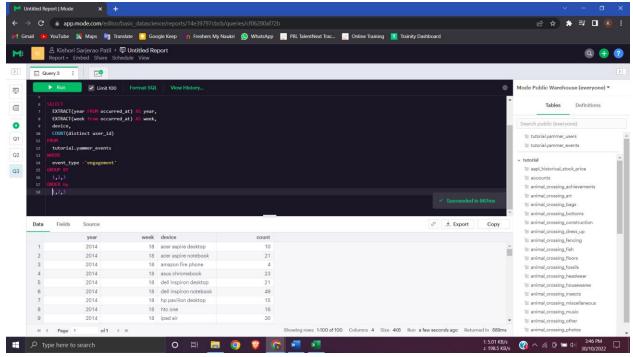
EXTRACT(year FROM occurred_at) AS year,
EXTRACT(week from occurred_at) AS week,
device,
COUNT(distinct user_id)
FROM
tutorial.yammer_events
WHERE
event_type ='engagement'
GROUP BY
1,2,3
ORDER by
1,2,3

Output:

| year | week | device | count |
|------|------|-----------------------|-------|
| 2014 | 18 | acer aspire desktop | 10 |
| 2014 | 18 | acer aspire notebook | 21 |
| 2014 | 18 | amazon fire phone | 4 |
| 2014 | 18 | asus chromebook | 23 |
| 2014 | 18 | dell inspiron desktop | 21 |
| | | dell inspiron | |
| 2014 | 18 | notebook | 49 |
| 2014 | 18 | hp pavilion desktop | 15 |
| 2014 | 18 | htc one | 16 |
| 2014 | 18 | ipad air | 30 |
| 2014 | 18 | ipad mini | 21 |
| 2014 | 18 | iphone 4s | 21 |
| 2014 | 18 | iphone 5 | 70 |
| 2014 | 18 | iphone 5s | 45 |
| 2014 | 18 | kindle fire | 6 |
| 2014 | 18 | lenovo thinkpad | 90 |
| 2014 | 18 | macbook air | 57 |
| 2014 | 18 | macbook pro | 154 |
| 2014 | 18 | mac mini | 8 |
| 2014 | 18 | nexus 10 | 16 |
| 2014 | 18 | nexus 5 | 43 |
| 2014 | 18 | nexus 7 | 20 |
| 2014 | 18 | nokia lumia 635 | 19 |
| | | samsumg galaxy | |
| 2014 | 18 | tablet | 8 |
| 2014 | 18 | samsung galaxy note | 7 |
| 2014 | 18 | samsung galaxy s4 | 56 |

| 2014 18 windows surface 1 2014 19 acer aspire desktop 2 2014 19 acer aspire notebook 3 2014 19 acer aspire notebook 4 2014 19 acer aspire notebook 4 2014 19 dell inspiron desktop 5 dell inspiron 3 3 2014 19 pavilion desktop 3 2014 19 hp pavilion desktop 3 2014 19 ipad air 5 2014 19 ipad air 5 2014 19 ipad mini 2 2014 19 iphone 4s 4 2014 19 iphone 5s 7 2014 19 iphone 5s 7 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 nexus 5 7 2014 19 |
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| 2014 19 acer aspire notebook 3 2014 19 amazon fire phone 2014 19 asus chromebook 4 2014 19 dell inspiron desktop 5 dell inspiron dell inspiron 3 2014 19 hp pavilion desktop 3 2014 19 hp one 1 2014 19 ipad air 5 2014 19 ipad mini 2 2014 19 iphone 4s 4 2014 19 iphone 5 11 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 5 7 2014 19 nexus 5 7 2014 19 nokia lumia 635 3< |
| 2014 19 amazon fire phone 2014 19 asus chromebook 4 2014 19 dell inspiron desktop 5 dell inspiron dell inspiron 3 2014 19 notebook 7 2014 19 hp pavilion desktop 3 2014 19 hp cone 1 2014 19 ipad air 5 2014 19 ipad mini 2 2014 19 iphone 4s 4 2014 19 iphone 5s 7 2014 19 iphone 5s 7 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 < |
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| dell inspiron 19 notebook 7 2014 19 hp pavilion desktop 3 2014 19 htc one 1 2014 19 ipad air 5 2014 19 ipad mini 2 2014 19 iphone 4s 4 2014 19 iphone 5s 7 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 samsung galaxy samsung samsung samsung galaxy samsung samsun |
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| 2014 19 htc one 1 2014 19 ipad air 5 2014 19 iphone 4s 4 2014 19 iphone 5 11 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nokia lumia 635 3 samsumg galaxy 1 2 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 htc one 1 2014 19 ipad air 5 2014 19 ipad mini 2 2014 19 iphone 4s 4 2014 19 iphone 5 11 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nokia lumia 635 3 samsumg galaxy 1 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 ipad mini 2 2014 19 iphone 4s 4 2014 19 iphone 5 11 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2 2 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 iphone 4s 4 2014 19 iphone 5 11 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nokia lumia 635 3 samsumg galaxy 2 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 iphone 5 11 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 iphone 5s 7 2014 19 kindle fire 2 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 kindle fire 2 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 lenovo thinkpad 15 2014 19 macbook air 11 2014 19 mac book pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 macbook air 11 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 macbook pro 24 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2 2 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 mac mini 1 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 nexus 10 3 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 tablet 1 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 nexus 5 7 2014 19 nexus 7 2 2014 19 nokia lumia 635 3 samsumg galaxy 2 2014 19 tablet 1 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
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| 2014 19 nokia lumia 635 3 samsumg galaxy 2014 19 tablet 1 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
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| 2014 19 tablet 1 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 samsung galaxy note 1 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 samsung galaxy s4 8 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 19 windows surface 1 2014 20 acer aspire desktop 2 |
| 2014 20 acer aspire desktop 2 |
| |
| 2014 20 acer aspire notebook 4 |
| <u> </u> |
| 2014 20 amazon fire phone 1 |
| 2014 20 asus chromebook 2 |
| 2014 20 dell inspiron desktop 3 |
| dell inspiron 2014 20 notebook 8 |
| 2014 20 hp pavilion desktop 4 |
| 2014 20 htc one 3 |
| 2014 20 ipad air 5 |
| 2014 20 ipad mini 3 |
| 2014 20 iphone 4s 4 |

| 2014 | 20 | iphone 5 | 113 |
|------|----|--------------------------|-----|
| 2014 | 20 | iphone 5s | 77 |
| 2014 | 20 | kindle fire | 20 |
| 2014 | 20 | lenovo thinkpad | 176 |
| 2014 | 20 | macbook air | 110 |
| 2014 | 20 | macbook pro | 261 |
| 2014 | 20 | mac mini | 19 |
| 2014 | 20 | nexus 10 | 25 |
| 2014 | 20 | nexus 5 | 84 |
| 2014 | 20 | nexus 7 | 41 |
| 2014 | 20 | nokia lumia 635 | 22 |
| 2014 | 20 | samsumg galaxy tablet | 6 |
| 2014 | 20 | samsung galaxy note | 11 |
| 2014 | 20 | samsung galaxy s4 | 90 |
| 2014 | 20 | windows surface | 15 |
| 2014 | 21 | acer aspire desktop | 23 |
| 2014 | 21 | acer aspire notebook | 40 |
| 2014 | 21 | amazon fire phone | 10 |
| 2014 | 21 | asus chromebook | 39 |
| 2014 | 21 | dell inspiron desktop | 52 |
| | | dell inspiron | |
| 2014 | 21 | notebook | 84 |
| 2014 | 21 | hp pavilion desktop | 31 |
| 2014 | 21 | htc one | 27 |
| 2014 | 21 | ipad air | 54 |
| 2014 | 21 | ipad mini | 32 |
| 2014 | 21 | iphone 4s | 56 |
| 2014 | 21 | iphone 5 | 128 |
| 2014 | 21 | iphone 5s | 75 |
| 2014 | 21 | kindle fire | 22 |
| 2014 | 21 | lenovo thinkpad | 177 |
| 2014 | 21 | macbook air | 119 |
| 2014 | 21 | macbook pro | 256 |
| 2014 | 21 | mac mini | 25 |
| 2014 | 21 | nexus 10 | 23 |
| 2014 | 21 | nexus 5 | 99 |
| 2014 | 21 | nexus 7 | 31 |
| 2014 | 21 | nokia lumia 635 | 21 |



E. Email Engagement: Users engaging with the email service:

SQL Command:

SELECT

100.0 *SUM(CASE WHEN email_cat = 'email_open' THEN 1 ELSE 0 END)/SUM(CASE WHEN email_cat = 'email_sent' THEN 1 ELSE 0 END) AS email_open_rate,

100.0 *SUM(CASE WHEN email_cat = 'email_clicked' THEN 1 ELSE 0 END)/SUM(CASE WHEN email_cat = 'email_sent' THEN 1 ELSE 0 END) AS email_clicked_rate FROM

```
(
SELECT
*
```

CASE WHEN action IN ('sent_weekly_digest', 'sent_reengagement_email') THEN 'email_sent' WHEN action IN ('email_open') THEN 'email_open' WHEN action in ('email_clickthrough') THEN 'email_clicked' END AS email_cat FROM

tutorial.yammer_emails

Output:

) a

| email_open_rate | email_clicked_rate |
|-------------------|--------------------|
| 33.58338804990151 | 14.789888378200919 |

