

-- OPERATION ANALYTICS

-- Q1) Calculate the number of jobs reviewed per hour per day for November 2020?

- ```
select ds as dates ,
round((count(job_id)/sum(time_spent))*3600)
as 'jobs reviewed per hr per day' from job_data
where ds between '2020-11-01'
and '2020-11-30'
group by ds;
```

-- 2) Calculate 7 day rolling average of throughput?

- ```
select round(count(event_)/sum(time_spent),2) as  
'weekly throughput' from job_data;
```

-- 3) Calculate the percentage share of each language in the last 30 days?

- ```
select language_ , round(100*count(*)/total, 2)
as percentage from job_data
cross join (select count(*) as total
from job_data)sub
group by language_;
```

-- Q4) Let's say you see some duplicate rows in the data. How will you display duplicates from the table?

- ```
select actor_id, count(*) as Duplicates  
from job_data  
group by actor_id  
having Duplicates>1;
```

```
-- INVESTIGATING METRIC SPIKE
```

- ```
use m_spike;
```
- ```
-- Q1) Calculate the weekly user engagement?
```
- ```
select extract(week from occurred_at) as 'week numbers',
count(distinct(user_id)) as 'weekly active users'
from events
where event_type='engagement'
group by 1;
```
- ```
-- Q2) Calculate the user growth for product?
```

- ```
select Months, Users, round(((Users/lag(Users, 1)
over(order by Months)-1)*100),2) as 'Growth in %'
from
(select extract(month from created_at) as Months,
count(activated_at) as Users
from users_
where
activated_at between '2013-01-01' and '2014-08-31'
group by 1
order by 1
)sub;
```

-- Q3) Calculate the weekly retention of users-sign up cohort?

```
select first as 'week numbers',
sum(case when week_number=0 then 1 else 0 end) as 'week 0',
sum(case when week_number=1 then 1 else 0 end) as 'week 1',
sum(case when week_number=2 then 1 else 0 end) as 'week 2',
sum(case when week_number=3 then 1 else 0 end) as 'week 3',
sum(case when week_number=4 then 1 else 0 end) as 'week 4',
sum(case when week_number=5 then 1 else 0 end) as 'week 5',
sum(case when week_number=6 then 1 else 0 end) as 'week 6',
sum(case when week_number=7 then 1 else 0 end) as 'week 7',
sum(case when week_number=8 then 1 else 0 end) as 'week 8',
sum(case when week_number=9 then 1 else 0 end) as 'week 9',
sum(case when week_number=10 then 1 else 0 end) as 'week 10',
sum(case when week_number=11 then 1 else 0 end) as 'week 11',
sum(case when week_number=12 then 1 else 0 end) as 'week 12',
sum(case when week_number=13 then 1 else 0 end) as 'week 13',
sum(case when week_number=14 then 1 else 0 end) as 'week 14',
sum(case when week_number=15 then 1 else 0 end) as 'week 15',
sum(case when week_number=16 then 1 else 0 end) as 'week 16',
sum(case when week_number=17 then 1 else 0 end) as 'week 17',
sum(case when week_number=18 then 1 else 0 end) as 'week 18' from
(select m.user_id, m.login_week, n.first, m.login_week-first as week_number
from
(select user_id, extract(week from occurred_at) as login_week from events
group by 1,2)m,
(select user_id, min(extract(week from occurred_at)) as first from events
group by 1)n
where m.user_id=n.user_id
)sub
group by first
order by first;
```

-- 4) Calculate the weekly engagement per device?

```

select extract(week from occurred_at) as 'week numbers',
count(distinct case when device in('dell inspiron notebook') then user_id else
null end) as 'Dell Inspiron Notebook',
count(distinct case when device in('iphone 5') then user_id else
null end) as 'iphone 5',
count(distinct case when device in('iphone 4s') then user_id else
null end) as 'iphone 4s',
count(distinct case when device in('windows surface') then user_id else
null end) as 'windows surface',
count(distinct case when device in('macbook air') then user_id else
null end) as 'macbook air',
count(distinct case when device in('iphone 5s') then user_id else
null end) as 'iphone 5s',
count(distinct case when device in('macbook pro') then user_id else
null end) as 'macbook pro',
count(distinct case when device in('kindle fire') then user_id else
null end) as 'kindle fire',
count(distinct case when device in('ipad mini') then user_id else
null end) as 'ipad mini',
count(distinct case when device in('nexus 7') then user_id else
null end) as 'nexus 7',
count(distinct case when device in('nexus 5') then user_id else
null end) as 'nexus 5',
count(distinct case when device in('samsung galaxy s4') then user_id else
null end) as 'samsung galaxy s4',
count(distinct case when device in('lenovo thinkpad') then user_id else
null end) as 'lenovo thinkpad',
count(distinct case when device in('samsung galaxy tablet') then user_id else

```



```
Limit to 50000 rows
null end) as 'samsung galaxy tablet',
count(distinct case when device in('acer aspire notebook') then user_id else
null end) as 'acer aspire notebook',
count(distinct case when device in('asus chromebook') then user_id else
null end) as 'asus chromebook',
count(distinct case when device in('htc one') then user_id else
null end) as 'htc one',
count(distinct case when device in('nokia lumia 635') then user_id else
null end) as 'nokia lumia 635',
count(distinct case when device in('samsung galaxy note') then user_id else
null end) as 'samsung galaxy note',
count(distinct case when device in('acer aspire desktop') then user_id else
null end) as 'acer aspire desktop',
count(distinct case when device in('mac mini') then user_id else
null end) as 'mac mini',
count(distinct case when device in('hp pavilion desktop') then user_id else
null end) as 'hp pavilion desktop',
count(distinct case when device in('dell inspiron desktop') then user_id else
null end) as 'dell inspiron desktop',
count(distinct case when device in('ipad air') then user_id else
null end) as 'ipad air',
count(distinct case when device in('amazon fire phone') then user_id else
null end) as 'amazon fire phone',
count(distinct case when device in('nexus 10') then user_id else
null end) as 'nexus 10'
from events
where event_type='engagement'
group by 1
order by 1;
```

-- Q5) Calculate the email engagement metrics?

```
select Week,
round((weekly_digest/total*100),2) as 'Weekly digest rate',
round((email_opens/total*100),2) as 'Email_open rate',
round((email_clickthroughs/total*100),2) as 'Email_clickthrough rate',
round((reengagement_emails/total*100),2) as 'Sent_reengagement_emails rate'
from
(
 select extract(week from occurred_at) as Week,
 count(case when action_='sent_weekly_digest' then user_id else null end) as weekly_digest,
 count(case when action_='email_open' then user_id else null end) as email_opens,
 count(case when action_='email_clickthrough' then user_id else null end) as email_clickthroughs,
 count(case when action_='sent_reengagement_email' then user_id else null end) as reengagement_emails,
 count(user_id) as total
 from email_events
 group by 1
)sub
group by 1
order by 1;
```