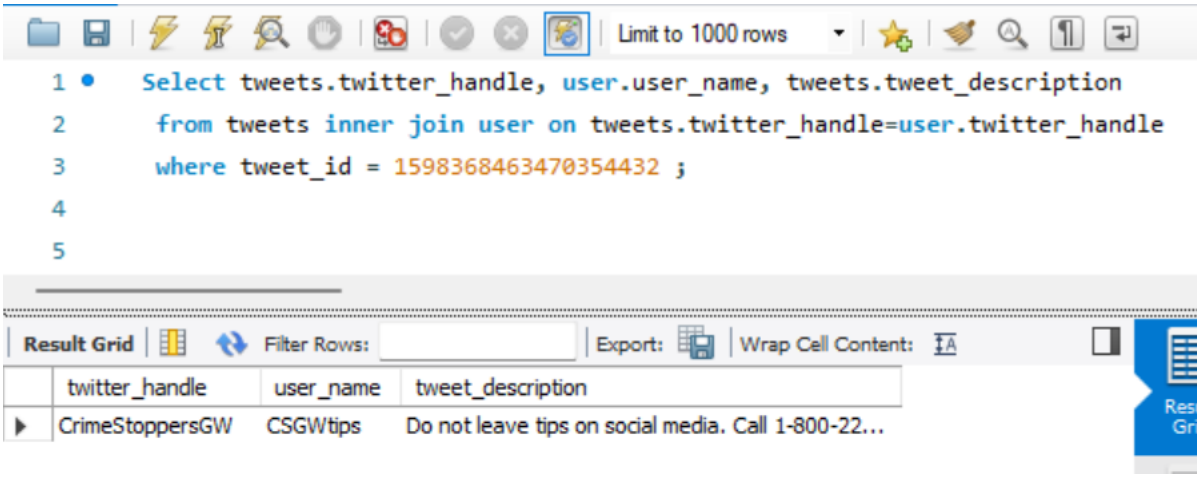
SQL Queries and Relational Algebra answering physical model

1. What user posted this tweet?

Query1:

```
Select tweets.twitter_handle, user.user_name, tweets.tweet_description
from tweets inner join user on tweets.twitter_handle=user.twitter_handle
where tweet_id = 1598368463470354432;
```

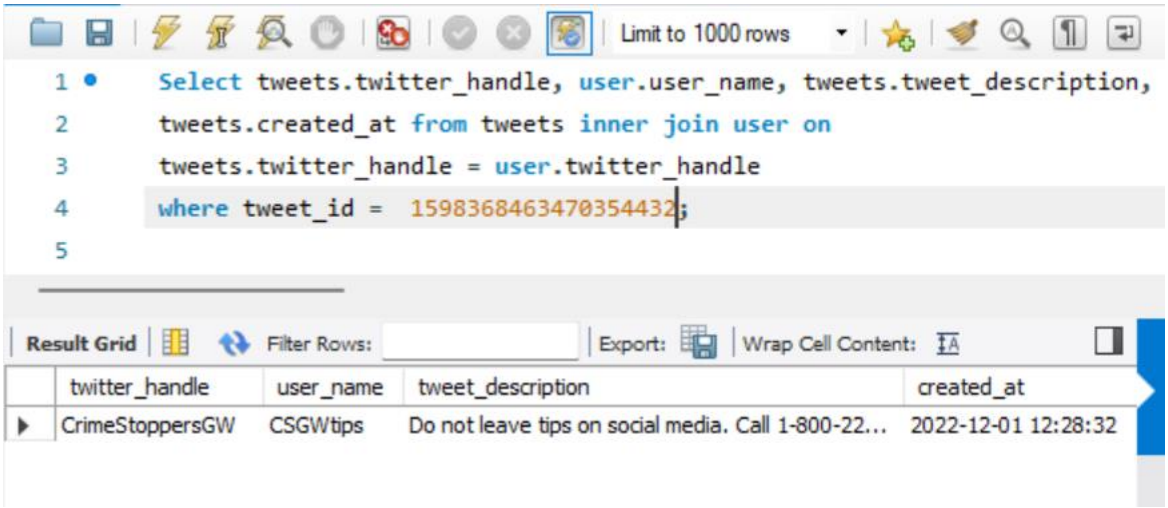


Relational Notation: Πtwitter_handle, tweet_text(σtweet_id = '1596997211048808448' (tweets))

2. When did the user post this tweet?

Query2:

```
Select tweets.twitter_handle, user.user_name, tweets.tweet_description,
tweets.created_at from tweets inner join user on
tweets.twitter_handle = user.twitter_handle
where tweet_id = 1596997211048808448;
```



Relational Notation: Πtwitter_handle, tweet_text, created_at(σtweet_id = '1596997211048808448' (tweets))

3. What tweets have this user posted in the past 24 hours?

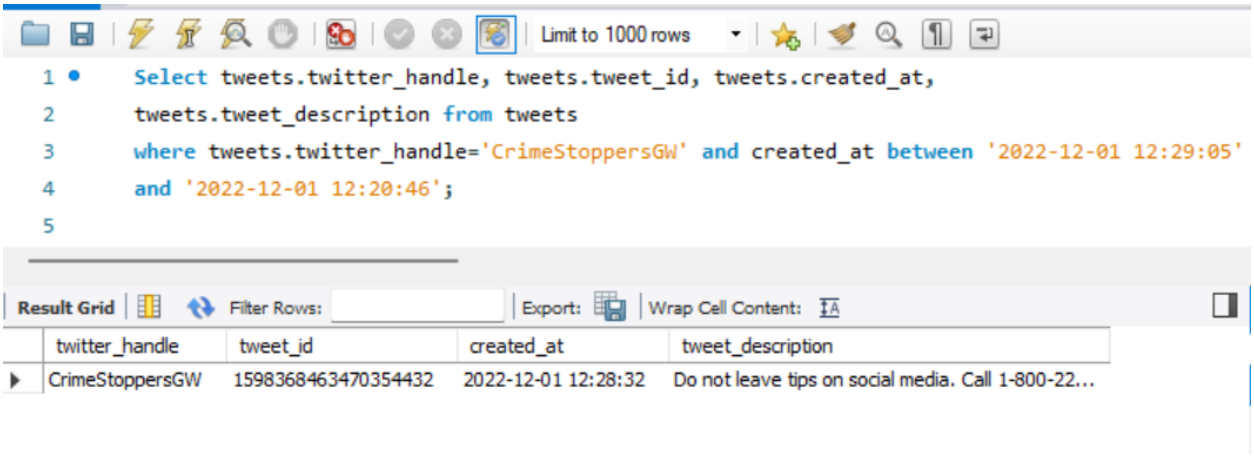
Query3:

Select tweets.twitter_handle, tweets.tweet_id, tweets.created_at,

tweets.tweet_description from tweets

where tweets.twitter_handle='Patricia' and created_at between '2022-11-11'

and '2022-11-12';



Relational Notation: Πtwitter_id, tweet_text(σtwitter_handle = '@smith' ∩ created_at between ('2022-11-11) and ('2022-11-12)) (Tweets)

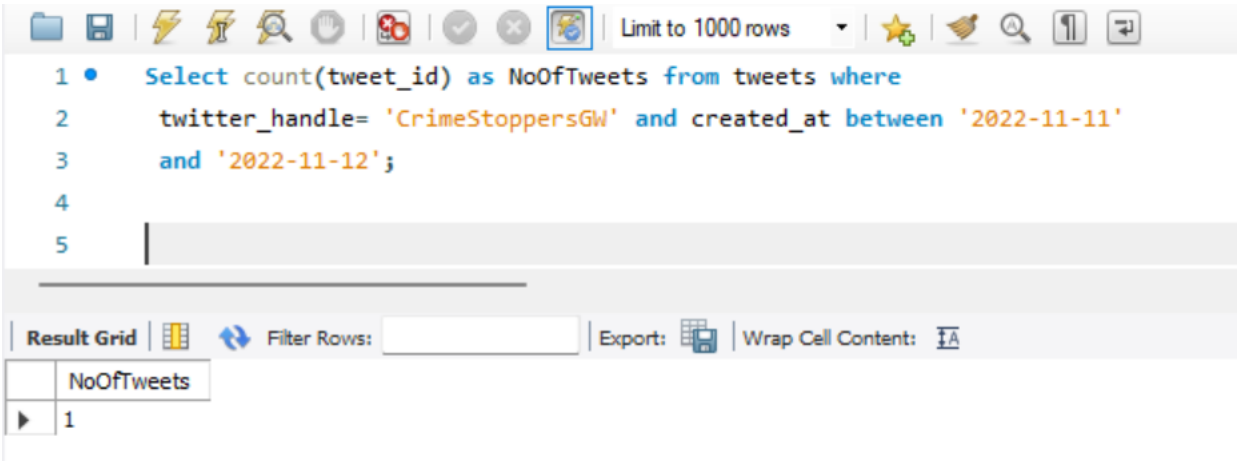
4. How many tweets have this user posted in the past 24 hours?

Query4:

Select count(tweet_id) as NoOfTweets from tweets where

twitter_handle= 'Patricia' and created_at between '2022-11-11'

and '2022-11-12';



Relational Notation: ρ NoOfTweets (∏ count(tweet_id) (σ

twitter_handle=’Patricia’ ∩ created_at between (SYSDATE-1) and

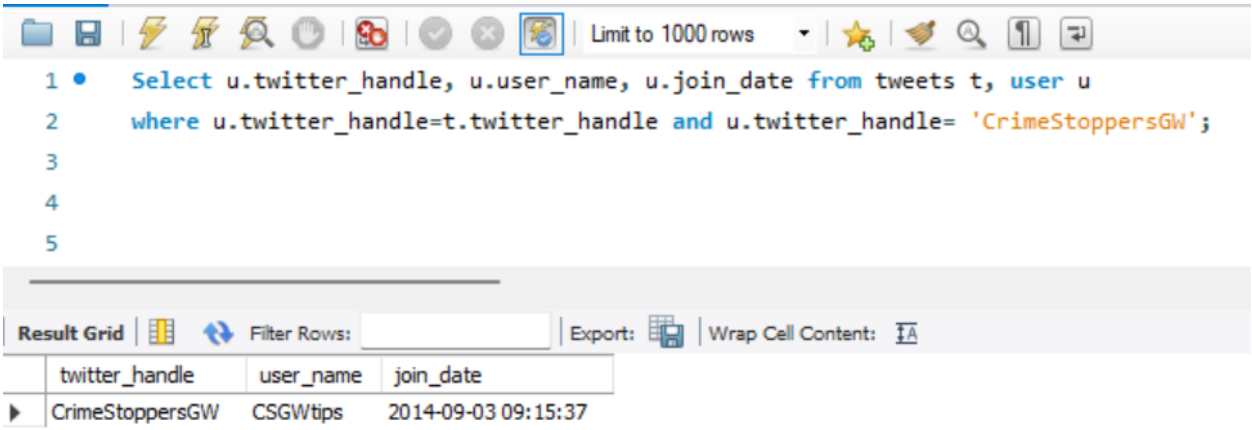
SYSDATE ()) (Tweets))

5. When did this user join twitter?

Query5:

Select u.twitter_handle, u.user_name, u.join_date from tweets t, user u

where u.twitter_handle=t.twitter_handle and u.twitter_handle= 'Patricia';



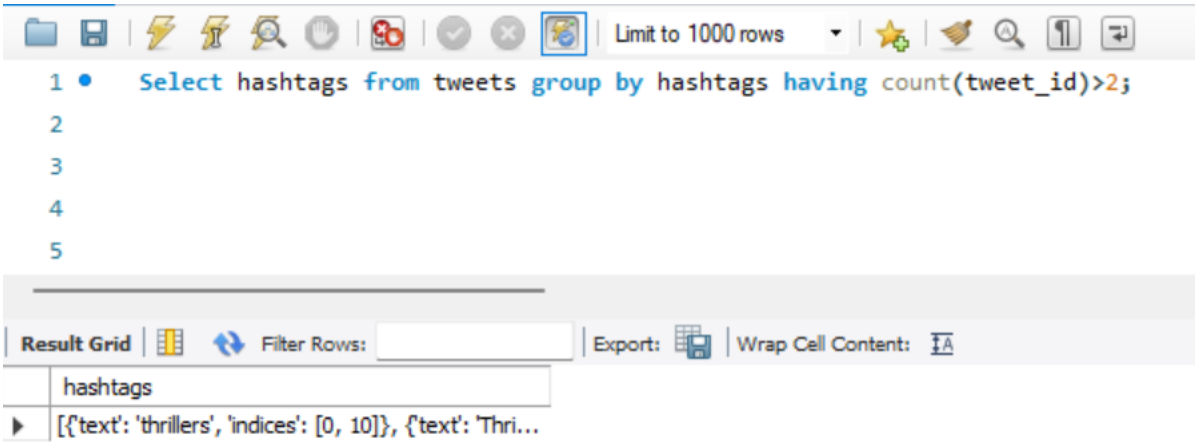
Relational Notation: ∏ (u.twitter_handle, u.join_date)σ (u.twitter_handle =

“smith”)(User⋈Tweetsu.twitter_handle=t.twitter_handle)

6. What keywords/hashtags are popular?

Query6:

Select hashtags from tweets group by hashtags having count(tweet_id)>2;



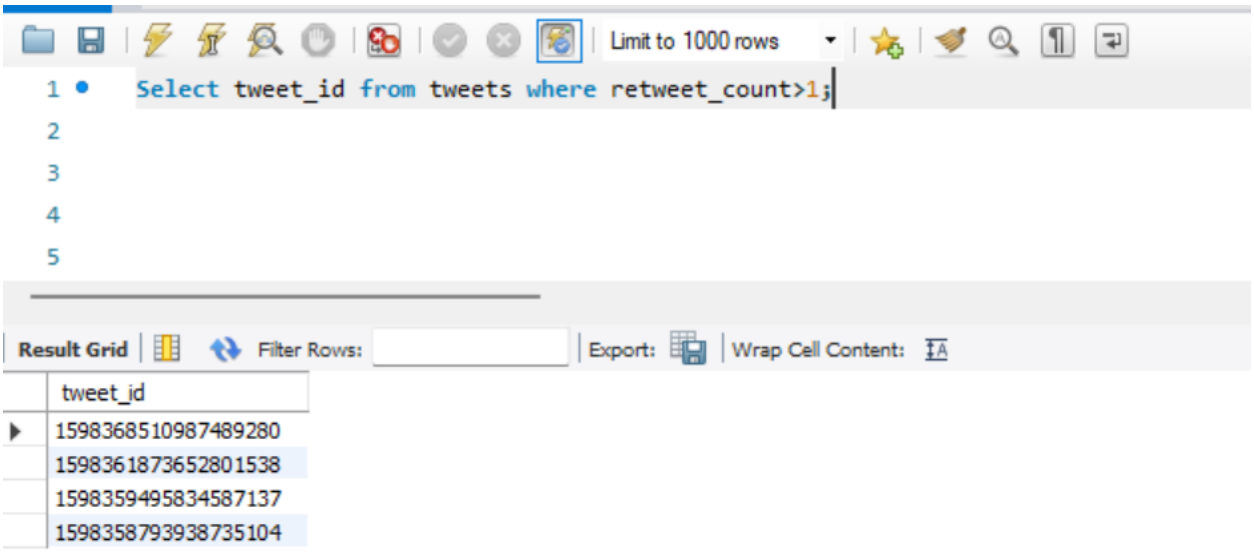
Relational Notation: Not possible as Group By function does not exist in

relational algebra.

7. What tweets are popular?

Query7:

Select tweet_id from tweets where retweet_count>1;



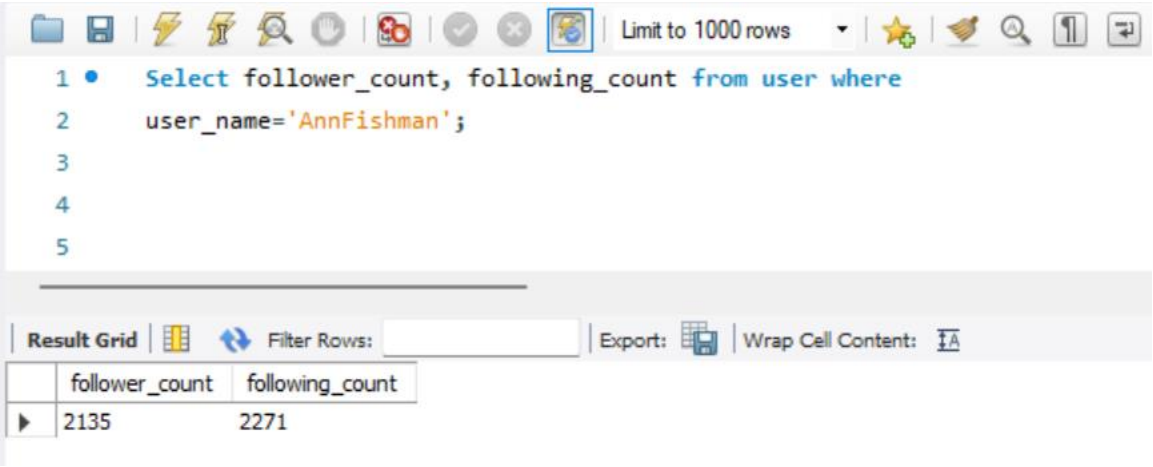
Relational Notation: ∏ (tweet_id)(σ retweet > 60) (tweets)

8. What is the followers and following count for this user?

Query8:

Select follower_count, following_count from user where

user_name='Patricia';



Relational Notation: ∏ (tweet_id)(σ retweet > 60) (tweets)

9. Who are the influential users and what are the tweets posted by them?

Query9:

Select distinct t.twitter_handle, t.tweet_description from user u, tweets t

where user_type = 'True';

```
Limit to 1000 rows

1  Select distinct t.twitter_handle, t.tweet_description from user u, tweets t
2  where user_type = 'True';
3
4
5
6
7
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

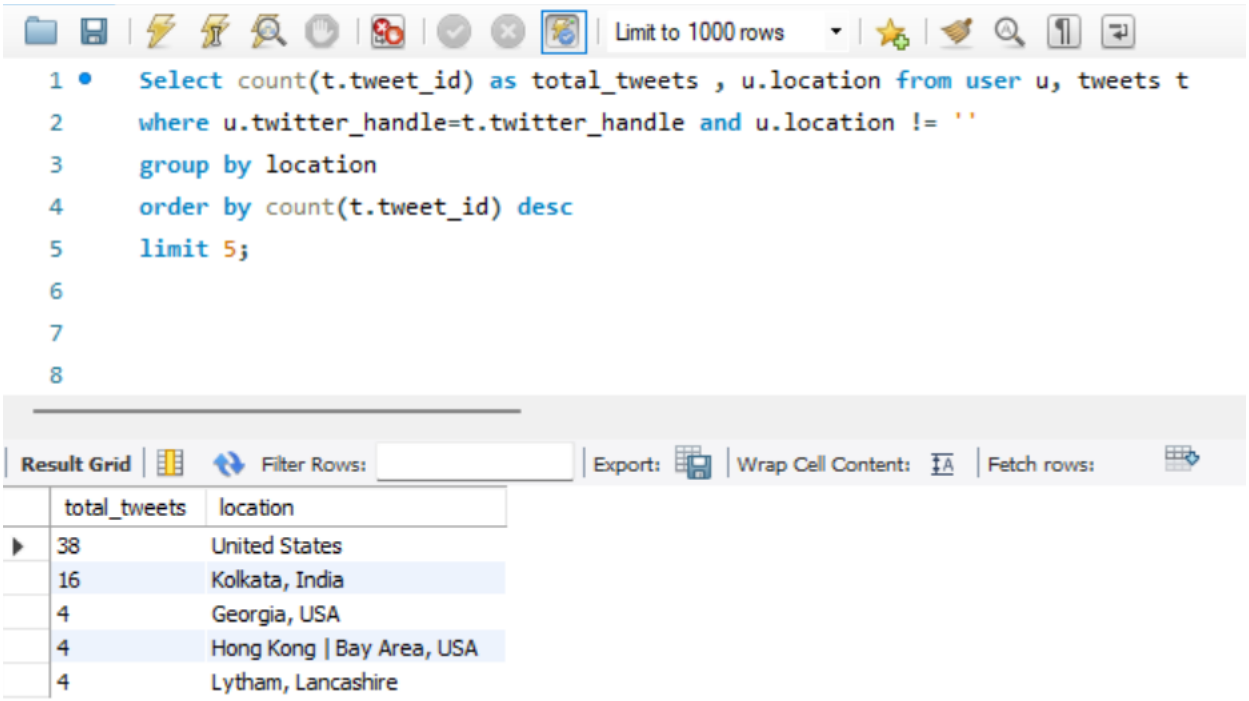
twitter_handle	tweet_description
CJ Bowen	If it has anything to do with people and commu...
The Daily Star	Bangladesh's largest English Daily. The latest & ...
Ann Fishman	Ann A. Fishman is an expert in providing insight...
Gurbaksh Singh Chahal	CEO, @Procurenet, @Medriva, @BNNBreaking ...
CrimeStoppersGW	Do not leave tips on social media. Call 1-800-22...
DR.	Lifelong Buckeye, former hotelier, University Ad...
CrimeSafetyTips	
Real Talk B	~ Bringing you the latest news & entertainment...
Jason S us	Houstonian. Local Intermodal Truck Driver. Mod...
PartnersInCrimeTours	#PICT Tours is a #VBT company who helps #cri...
Dee	Here for laughs
Self-Publishers' Showc...	The best books, from the best #Indieauthors, s...
Anne Williams	Happily retired, enjoying reading + sharing my l...
nigel maxwell	Senior reporter paNOW, wedding dj, CWE ring ...
IdeallyaNews	#WorldNews, compiled from public broadcaster...
Christopher Oldcorn (...	Journalist and Opinion Writer @WSOnlineNews ...
Mr. L	Live and work in the southern part of the U.S.A...
True Crime Lists	Informative and interesting true crime facts! Tr...

Result 77

10. List the top 5 locations based on the tweets posted ?

Query10:

```
Select count(t.tweet_id) as total_tweets , u.location from user u, tweets t
where u.twitter_handle=t.twitter_handle and u.location != ''
group by location
order by count(t.tweet_id) desc
limit 5;
```



```
Select count(t.tweet_id) as total_tweets , u.location from user u, tweets t
where u.twitter_handle=t.twitter_handle and u.location != ''
group by location
order by count(t.tweet_id) desc
limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

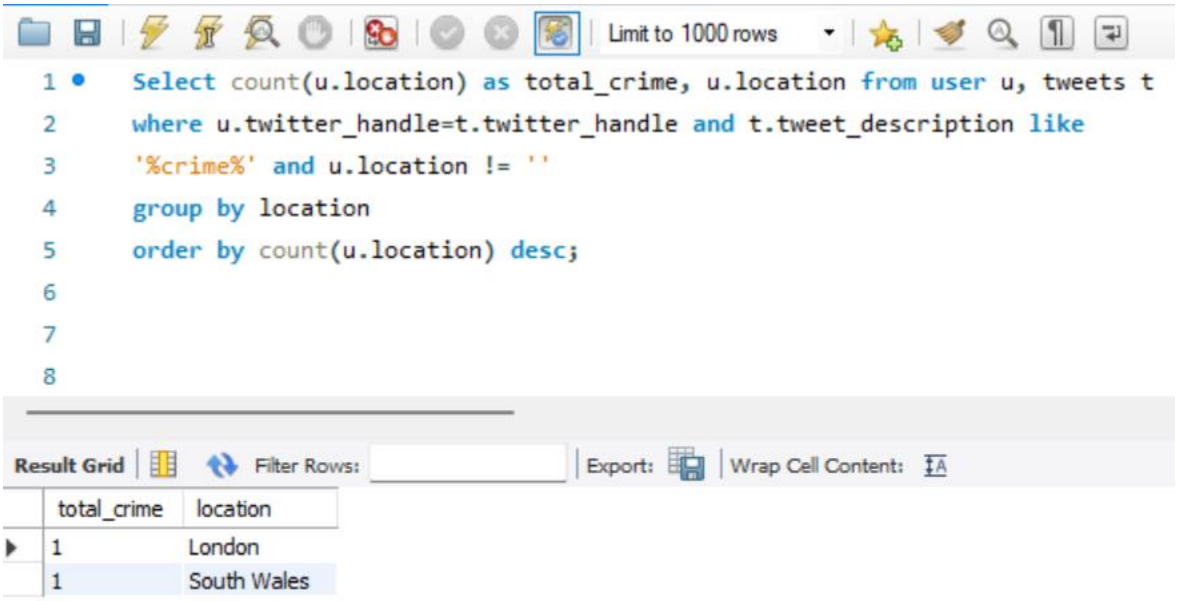
total_tweets	location
38	United States
16	Kolkata, India
4	Georgia, USA
4	Hong Kong | Bay Area, USA
4	Lytham, Lancashire

Relational Notation: Not possible as Group By function does not exist in relational algebra.

11.List the locations with number of crime incidents reported?

Query11:

```
Select count(u.location) as total_crime, u.location from user u, tweets t
where u.twitter_handle=t.twitter_handle and t.tweet_description like
'%crime%' and u.location != ''
group by location
order by count(u.location) desc;
```



Relational Notation: Not possible as Group By function does not exist in relational algebra.