Holiday Planner Database

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Project Description:

Goals and objectives:
Build a holiday planner site with corresponding database which will fulfill the necessities of a tourist planning for a vacation with information about tourist attractions, history, weather, hotels, transport services and social media trends of respective city of interest.

Problems addressed:

The project offers one stop solution for all the basic information required by a tourist for his/her travel plan. Existing sites/databases are more confined to a specific information rather than providing everything required. This site/database will reduce the time and effort spent in searching data at multiple places. In addition, this site/database is integrated with social media trends which can give a wider view about the current happenings at respective cities.
Potential pitfalls

Potential pitfalls and challenges:

The major challenge involved bringing the dynamic data of weather and social media trends and integrating them with the static data in the database and update it on timely basis so that the database is on par with the latest updates.

Concepts and code sources:

Concepts to used are:

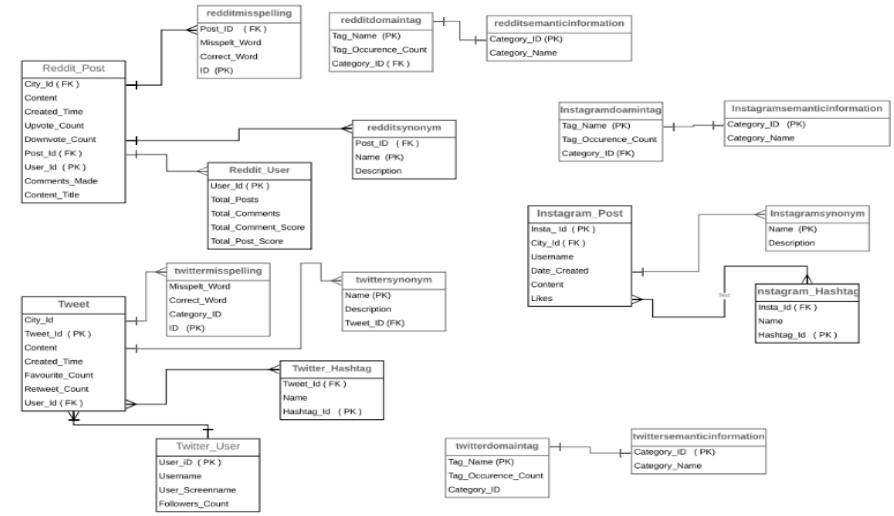
- Web scraping using Python.
- Data retrieval using API calls in Python.
- Stored Procedures in SQL.
- Joins concept in SQL.
- Views concept in SQL.
- Functions in SQL
- Normalization of database tables.
- Entity-Relationship rules in designing conceptual/physical model of real-time data base.

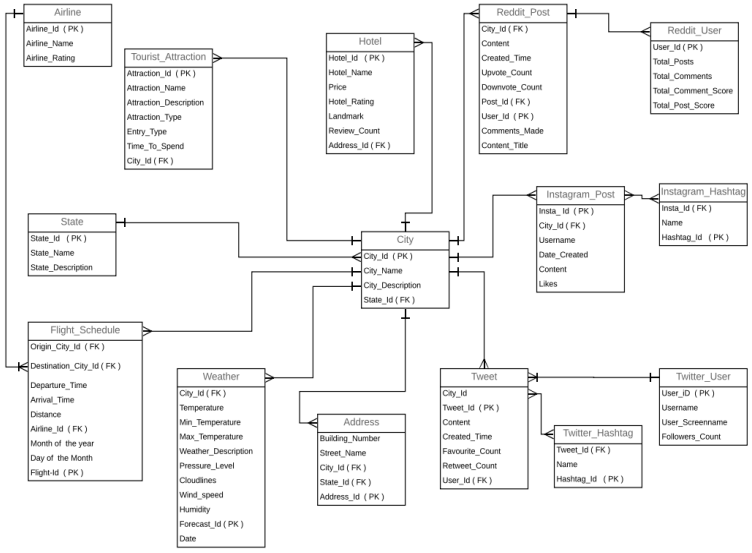
Data Sources:

- Travel.usnews.com - Tourist attraction information.
- Kaggle.com – Flight information.
- Hotelscombined.com – Hotel information.
- Openweathermap.com – Updated weather information.
- Twitter – Social Media trends.
- Reddit - Social Media trends.
- Instagram - Social Media trends.
- Kaggle datasets – City/state information, Airline information.

ER diagram

An entity relationship model or the entity-relationship(ER) diagram, is a graphical representation of entities and their relationships to each other, typically used in computing with regard to the organization of data within the databases or information systems.





we have used two diagrams to make it understandable and legible , as we had more than 25 tables to be shown.

Normal forms:

First normal form:

- All tables should have primary keys-**SATISFIED**

- No repeated values in columns/no repeating groups-**SATISFIED**

Second normal form:

- It should be in 1st normal form-**SATISFIED**
- It should not have partial dependencies-**SATISFIED**
- No calculated data-**SATISFIED**

Third normal form:

- It should be in second normal form-**SATISFIED**
- Remove attributes that do not directly depend on primary key-**SATISFIED**

Social Media Use Cases

Use case 1: What are people saying about me (somebody)?

#stored Procedure (1) :sp_tweets_about_city()

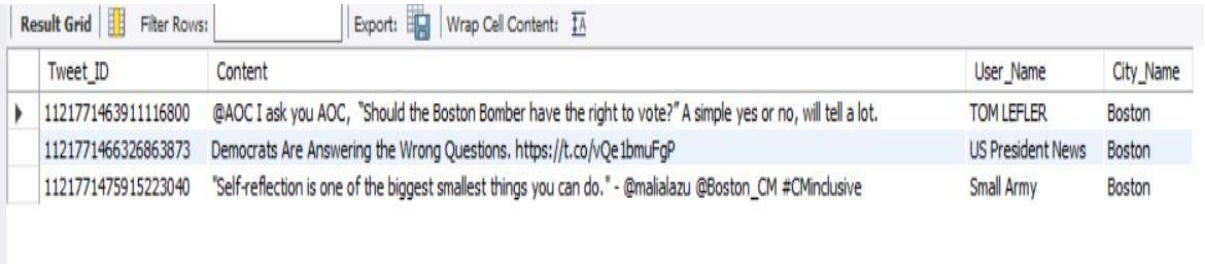
#Description: Consists of city_name as input parameter and returns the list of all tweets made on the

with regard to the particular city.

```
DELIMITER $$
CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_tweets_about_city`(IN city_name text)
   READS SQL DATA
BEGIN
    select t.Tweet_ID, t.Content, tu.User_Name, city.City_Name
    from holiday_planner.city city, holiday_planner.tweet t, holiday_planner.twitteruser tu
    where t.City_ID = city.City_ID and
    city.City_Name = city_Name and t.User_ID = tu.User_ID;

END$$
```

```
DELIMITER ;

# Procedure call for sp_tweets_about_city() with 'Boston' as input parameter

Call sp_tweets_about_city ('Boston');

#drop procedure sp_tweets_about_city;
```

Output:



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

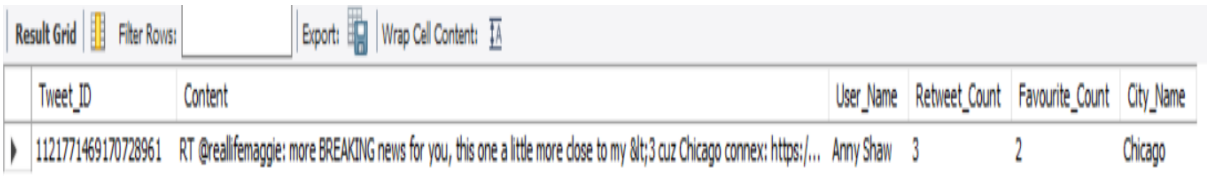
Tweet_ID	Content	User_Name	City_Name
1121771463911116800	@AOC I ask you AOC, "Should the Boston Bomber have the right to vote?" A simple yes or no, will tell a lot.	TOM LEFLER	Boston
1121771466326863873	Democrats Are Answering the Wrong Questions. https://t.co/vQe1bmuFgP	US President News	Boston
1121771475915223040	"Self-reflection is one of the biggest smallest things you can do." - @malialazu @Boston_CM #CMinclusive	Small Army	Boston

Use case(2): How viral are my posts??

```
#use case (2) :sp_twitter_virality_of_a_city()

#Description: Consists of city_name as input parameter and returns the list of all tweets made on the

# with regard to the particular city along with the retweet count and favourite count denoting the virality of the posts associated with the city


DELIMITER $$

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_twitter_virality_of_a_city`(IN city_name text)

   READS SQL DATA

BEGIN

    select t.Tweet_ID, t.Content, tu.User_Name, t.Retweet_Count, t.Favourite_Count , city.City_Name

    from holiday_planner.city city, holiday_planner.tweet t, holiday_planner.twitteruser tu

    where t.City_ID = city.City_ID and

    city.City_Name = city_Name and t.User_ID = tu.User_ID;

END$$;
```

```
DELIMITER ;

# Procedure call for sp_tweets_about_city() with 'Boston' as input parameter

Call sp_twitter_virality_of_a_city ('Chicago');

#drop procedure sp_twitter_virality_of_a_city;
```

Output:



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

Tweet_ID	Content	User_Name	Retweet_Count	Favourite_Count	City_Name
1121771469170728961	RT @reallifemaggie: more BREAKING news for you, this one a little more close to my <3 cuz Chicago connex: https:/...	Anny Shaw	3	2	Chicago

Use case(3): What posts are likely to be interesting to me?

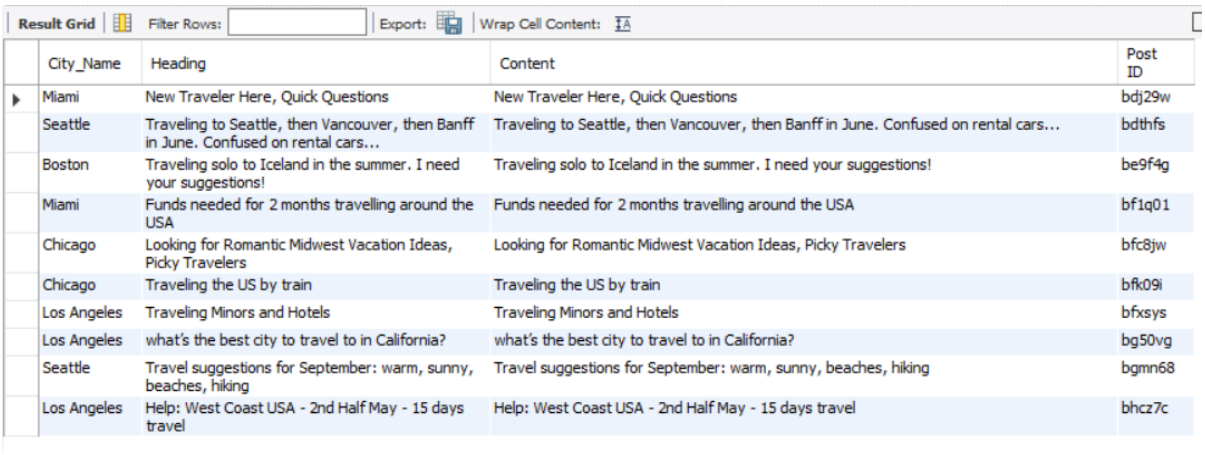
```
#use case (3) :sp_interesting_reddit_posts()

#Description: Picks up the reddit posts associated with travel as the overall intention of the databse to support

#travellers seeking informmation

DELIMITER $$

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_interesting_reddit_posts`()

   READS SQL DATA

BEGIN

   select city.City_Name, p.Content_Title as 'Heading', p.Content as 'Content', p.Post_ID as 'Post ID'

from holiday_planner.redditpost p, holiday_planner.city city

where p.city_id = city.City_ID and

p.Content like '%travel%';

END$$;
```

DELIMITER ;

Procedure call for sp_interesting_reddit_posts with predefined 'trvael' search crfiteria

Call sp_interesting_reddit_posts ();

Output:



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

City_Name	Heading	Content	Post ID
Miami	New Traveler Here, Quick Questions	New Traveler Here, Quick Questions	bdj29w
Seattle	Traveling to Seattle, then Vancouver, then Banff in June. Confused on rental cars...	Traveling to Seattle, then Vancouver, then Banff in June. Confused on rental cars...	bdthfs
Boston	Traveling solo to Iceland in the summer. I need your suggestions!	Traveling solo to Iceland in the summer. I need your suggestions!	be9f4g
Miami	Funds needed for 2 months travelling around the USA	Funds needed for 2 months travelling around the USA	bf1q01
Chicago	Looking for Romantic Midwest Vacation Ideas, Picky Travelers	Looking for Romantic Midwest Vacation Ideas, Picky Travelers	bfc8jw
Chicago	Traveling the US by train	Traveling the US by train	bfk09i
Los Angeles	Traveling Minors and Hotels	Traveling Minors and Hotels	bfxsys
Los Angeles	what's the best city to travel to in California?	what's the best city to travel to in California?	bg50vg
Seattle	Travel suggestions for September: warm, sunny, beaches, hiking	Travel suggestions for September: warm, sunny, beaches, hiking	bgmn68
Los Angeles	Help: West Coast USA - 2nd Half May - 15 days travel	Help: West Coast USA - 2nd Half May - 15 days travel	bhcz7c

Use Case(4) : What posts like me?

#use case (4) :sp_similar_instagram_posts

#Description: Picks up the set of instagram posts which has hashtags similar to that user's interests confirming the

similarity in interest

DELIMITER $$

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_similar_instagram_posts`(IN place_to_visit text, IN favourite_shoes text,

IN favousite_music text, IN clothing text)

    READS SQL DATA

BEGIN

select p.`Post id`, p.Post

from holiday_planner.instagramhashtag h, holiday_planner.instagrampost p

where h.`Post id` = p. `Post id` and

(h.`Hash Tag` like place_to_visit or h.`Hash Tag` like favourite_shoes or h.`Hash Tag` like favousite_music

or h.`Hash Tag` like clothing);

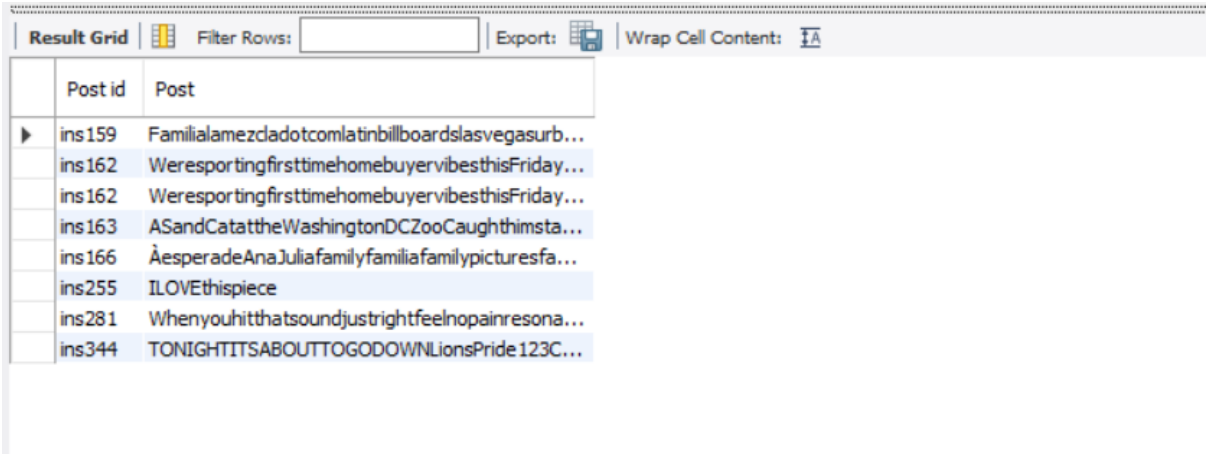
END$$

DELIMITER ;

Procedure call for users_with_most_retweeted_tweets() with '2' as input parameter

Call sp_similar_instagram_posts('sydney','sneakers','retro','menswear');

Output:



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

Post id	Post
ins159	Familialamezcladotcomlatinbillboardslasvegasurb...
ins162	Weresportingfirsttimehomebuyervibesthisfriday...
ins162	Weresportingfirsttimehomebuyervibesthisfriday...
ins163	ASandCatattheWashingtonDCZooCaughthimsta...
ins166	ÀesperadeAnaJuliafamilyfamiliafamilypicturesfa...
ins255	ILOVEthispiece
ins281	Whenyouhitthatsoundjustrightfeelnopainresona...
ins344	TONIGHTITSABOUTTOGODOWNLionsPride123C...

Use Case (5): What users post like me?

#use case (5) :sp_similar_instagram_users

#Description: Picks up the set of instagram users who use hashtags similar to that user's interests confirming the

similarity in interest

DELIMITER $$

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_similar_instagram_users`(IN place_to_visit text, IN favourite_shoes text,

IN favousite_music text, IN clothing text)

READS SQL DATA

BEGIN

select p.`User Name`

from holiday_planner.instagramhashtag h, holiday_planner.instagrampost p

where h.`Post id` = p. `Post id` and

(h.`Hash Tag` like place_to_visit or h.`Hash Tag` like favourite_shoes or h.`Hash Tag` like favousite_music

or h.`Hash Tag` like clothing);

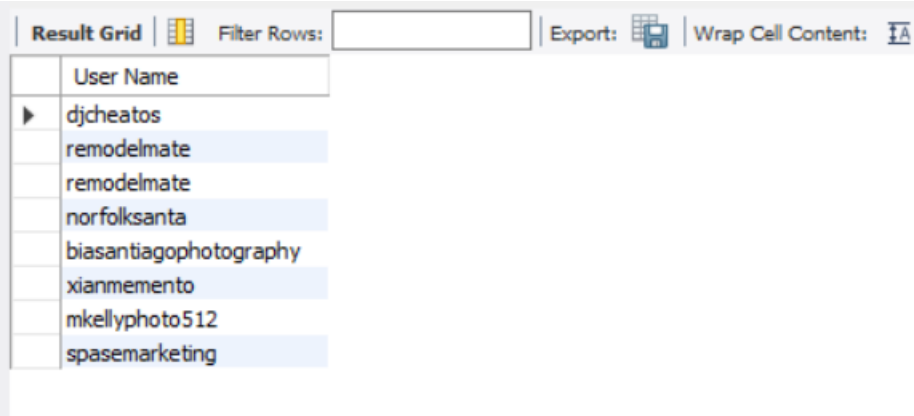
END$$

DELIMITER ;

Procedure call for users_with_most_retweeted_tweets() with '2' as input parameter

Call sp_similar_instagram_users('sydney','sneakers','retro','menswear');

Output:



Use Case (6): Who should I be following?

#use case (6) :sp_users_to_follow()

#Description: Consists of number_of_users as input parameter and returns the list of twitters users(userID, username and user secreen name),

#where number of results is controlled by the input paramater

#Joins used: Tables 'tweet' and 'twitteruser' are joined using 'User_ID'.

Since the databse holds information about tweets tweeted with regard to cities. The user with most retweeted trave tweets must be

a good content provider and is suitable person to be followed.

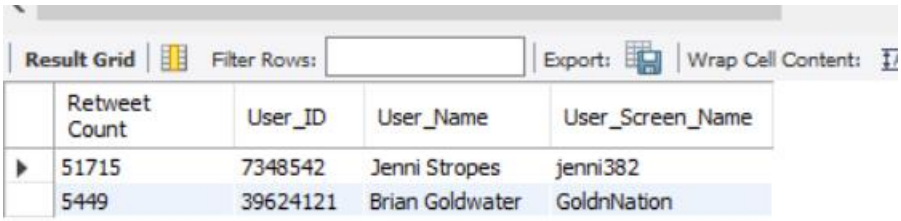
DELIMITER $$

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_users_to_follow`(IN number_of_users INT)

READS SQL DATA

```
BEGIN
        SELECT sum(t.Retweet_Count) as 'Retweet Count', u.User_ID, u.User_Name,u.User_Screen_Name
    from holiday_planner.tweet t, holiday_planner.twitteruser u
    where t.User_ID = u.User_ID
    group by u.User_ID
        order by sum(t.Retweet_Count) DESC
        LIMIT number_of_users;

END$$
DELIMITER ;

# Procedure call for users_with_most_retweeted_tweets() with '2' as input parameter
Call sp_users_to_follow (2);
```

Output:



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

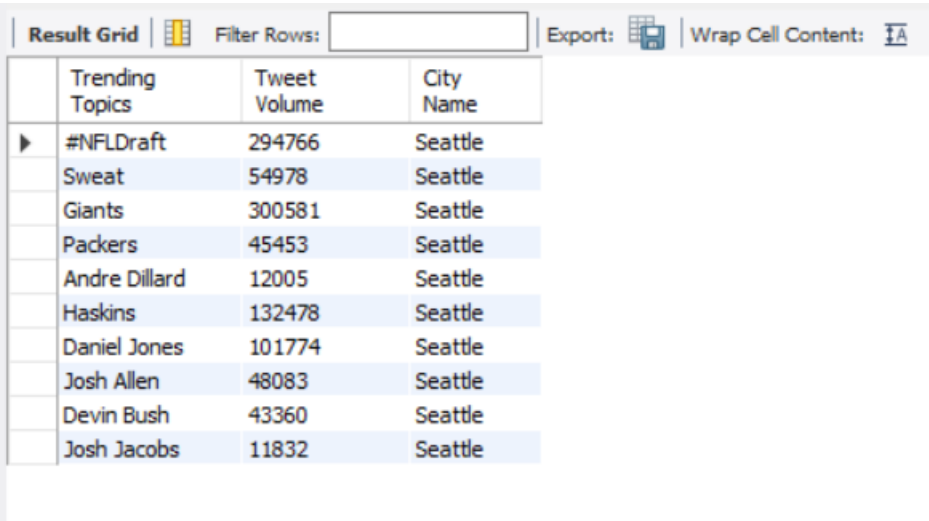
	Retweet Count	User_ID	User_Name	User_Screen_Name
▶	51715	7348542	Jenni Stropes	jenni382
	5449	39624121	Brian Goldwater	GoldnNation

Use Case (7): What topics are trending in my domain?

```
#use case (7) :sp_city_specific_twitter_trending_topics()
#Description: Displays topics trending in an the city of interest of the user. The input parameters will be city name and
# the number of tpics the user is interested in"

DELIMITER $$
CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_city_specific_twitter_trending_topics`(IN city_name text, number_of_topics INT)
   READS SQL DATA
BEGIN
```

```
select t.Trend_Topic as 'Trending Topics', t.Tweet_Volume as 'Tweet Volume', city.City_Name as 'City Name'
from holiday_planner.twittertrend t, holiday_planner.city city
where t.City_ID = city.City_ID and
city.city_Name like city_name
LIMIT number_of_topics;

END$$
DELIMITER ;

# Procedure call for users_with_most_retweeted_tweets() with '2' as input parameter
Call sp_city_specific_twitter_trending_topics('Seattle', 10);
```

Output:



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

Trending Topics	Tweet Volume	City Name
#NFLDraft	294766	Seattle
Sweat	54978	Seattle
Giants	300581	Seattle
Packers	45453	Seattle
Andre Dillard	12005	Seattle
Haskins	132478	Seattle
Daniel Jones	101774	Seattle
Josh Allen	48083	Seattle
Devin Bush	43360	Seattle
Josh Jacobs	11832	Seattle

Use Case(8) : What keywords/ hashtags should I add to my post?

#use case (8) :sp_hashtags_to_use()

#Description: Displays the hashtags which are popular in travel domain associated with cities and the user can select the number of

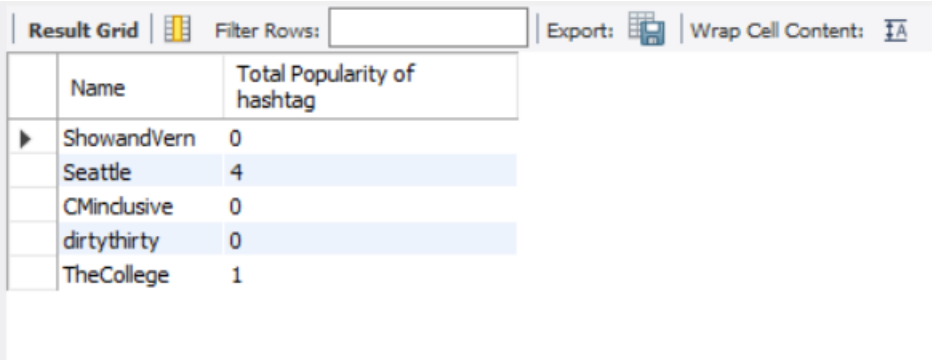
#hashtags he/she wants to see in the output, which is presented along with Retweet and Favourite count.

```
DELIMITER $$
CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_hashtags_to_use`(IN number_of_topics INT)
    READS SQL DATA
BEGIN
select h.Name, (t.Retweet_Count +  t.Favourite_Count) as 'Total Popularity of hashtag'
from holiday_planner. tweet t, holiday_planner. twitterhashtag h, holiday_planner.twitteruser u
where t.User_ID = u.User_ID and h.Tweet_ID = t.Tweet_ID
group by h.Name
order by 'Total Popularity of hashtag' DESC
LIMIT number_of_topics ;
END$$
DELIMITER ;
```

Procedure call for users_with_most_retweeted_tweets() with '2' as input parameter

Call sp_hashtags_to_use(5);

Output:



Name	Total Popularity of hashtag
ShowandVern	0
Seattle	4
CMinclusive	0
dirtythirty	0
TheCollege	1

#Use Case (9): Should I follow somebody back?

use case (9) :sp_reddit_users_to_follow

#Description: Picks up the set of reddit users who post asticles regarding travel, journey, hotels so that aspiring travellers

follow them to get much inputs.

```
DELIMITER $$
CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_reddit_users_to_follow`(IN number_of_users INT)
    READS SQL DATA
BEGIN
select p.User_ID, p.Content, p.Content_Title
from holiday_planner.redditpost p, holiday_planner.reddituser u
where p.User_ID = u.User_ID and
p.content like '%travel%'
or p.content like  '%journey%'
or p.content like '%hotel%'
or p.content like  '%restaurant%'
LIMIT number_of_users;
END$$
DELIMITER ;

# Procedure call for users_with_most_retweeted_tweets() with '2' as input parameter
Call sp_reddit_users_to_follow(5);
```

Output:

User_ID	Content	Content_Title
Myardraug	Finding a hotel room in Las Vegas with a jacuzzi in the room?	Finding a hotel room in Las Vegas with a jacuzzi in the room?
alilrecalcitrant	Traveling Minors and Hotels	Traveling Minors and Hotels
Myardraug	Finding a hotel room in Las Vegas with a jacuzzi in the room?	Finding a hotel room in Las Vegas with a jacuzzi in the room?
AccFire99	New Traveler Here, Quick Questions	New Traveler Here, Quick Questions
alilrecalcitrant	Traveling Minors and Hotels	Traveling Minors and Hotels

Tables with syntactic and semantic information about tags:

Social Tagging Tables created:

1. instagramdomaintag

Result Grid | Filter Rows: | Edit:

Tag_Name	Tag_Occurence_Count	Category_ID
amsterdam	2	touristplace
architecture	6	touristplacetype
art	12	touristplacetype
atlanta	22	touristplace
austin	13	touristplace
austria	3	touristplace
bangkok	3	touristplace
berlin	2	touristplace
beverlyhills	3	touristplace
boatlife	4	touristplacetype
boston	17	touristplace
brazil	3	touristplace
california	21	touristplace
charleston	9	touristplace
chicago	13	touristplace
colombia	3	touristplace
dallas	9	touristplace
dekonaillou...	4	touristplace
denmark	3	touristplace
denver	19	touristplace

2. instagramsemanticinformation

Result Grid | Filter Rows:

Category_ID	Category_Name
Category_ID	Category_Name
touristplace	Tourist Place
touristplacetype	Tourist Place Type
transportoption	Transport Option
travellerrequirement	Traveller Requirement
travellertype	Traveller Type
travelpurpose	Travel Purpose
NULL	NULL

3. instagramsynonym

```
8 •  select *
9    from instagramsynonym;
```

Result Grid | Filter Rows: | Ed

Name	Description
ATL	Hartsfield International Airport
Atx	Austin Texas
CCM	Canada Cycle & Motor Co. Ltd
CMG	Chipotle Mexican Grill
DMV	Department of Motor Vehicles
NBa	National Basket association
Nfldraft	National football league draft
nightlifenyc	NewYork city nightlife
Philly	Philadelphia
Rnb	Rhythm and blues
SWV	Sisters with Voices band
TBT	Throwback Thursday
Wanderlust	a strong desire to travel
NULL	NULL

4. redditdomaintag

```
11 •  select *
12    from redditdomaintag;
```

Result Grid | Filter Rows: | Edit:

Tag_Name	Tag_Occurence_Count	Category_ID
Austin	2	touristplace
Beach	2	touristplacetype
flights	3	transportoption
itinerary	2	travelplan
Miami	2	touristplace
NULL	NULL	NULL

5. redditmisspelling

```
15 •  select *
16    from redditmisspelling;
```

Result Grid | Filter Rows: | Edit:

Post_ID	Misspelt_Word	Correct_Word	ID
bf1q01	travelling	traveling	1
NULL	NULL	NULL	NULL

6. redditsemanticinformation

```
18 •  select *
19    from redditsemanticinformation;
```

Result Grid | Filter Rows: | Export: | Wr

Category_ID	Category_Name
transportoption	Transport Option
travelplan	Travel Plan
touristplace	Tourist Place
touristplacetype	Tourist Place Type

7. redditsynonym

```
21 •  select *
22    from redditsynonym;
```

Result Grid | Filter Rows:

Post_ID	Name	Description
bdou78	Bro	Brother
NULL	NULL	NULL

8. twitterdomaintag

Result Grid | Filter Rows: | Edit:

Tag_Name	Tag_Occurence_Count	Category_ID
Antonio	2	touristplace
Atlanta	3	touristplace
Atlanta,	2	touristplace
Boston	2	touristplace
Chicago	3	touristplace
Chicago,	4	touristplace
D.C.	4	touristplace
Dallas	4	touristplace
Denver	4	touristplace
Georgia,	2	touristplace
Louis	2	touristplace
Maine	2	touristplace
Miami	4	touristplace
Milan	2	touristplace
Nashville	2	touristplace
Natchez	2	touristplace
Nevada	2	touristplace
Orleans	2	touristplace
Philadelphia	4	touristplace
Seattle	2	touristplace

9. twittermisspelling

Result Grid | Filter Rows: | Edit:

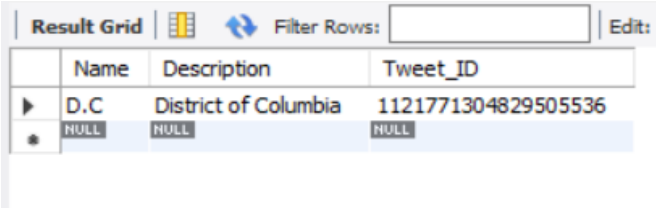
Misspelt_Word	Correct_Word	Tweet_ID	ID
ya	you	1121771468495491072	1
NULL	NULL	NULL	NULL

10. twittersemanticinformation

Result Grid | Filter Rows:

Category_ID	Category_Name
Category_ID	Category_Name
touristplace	Tourist Place
NULL	NULL

11. twittersynonym



Result Grid | Filter Rows: | Edit:

	Name	Description	Tweet_ID
▶	D.C	District of Columbia	1121771304829505536
*	NULL	NULL	NULL

General Use Cases:

Use case 1:

List of tourist attractions based on city and attraction type:

```
create procedure sp_attraction_city_type
(@cityid nvarchar(50),
@entrytype nvarchar(50))
as
begin

select c.city_name,ta.attraction_name,ta.attraction_type,ta.entry_type,ta.attraction_id,
c.state_id
from touristattraction ta
join city c
on ta.city_id=c.city_id
where c.city_name=@cityid and ta.entry_type=@entrytype;
end
```

output:

```
execute sp_attraction_city_type 'boston','free';
```

Results | Messages

	city_name	attraction_name	attraction_type	entry_type	Time_To_Spend	attraction_id	state_id
1	Boston	Boston Common	Recreation	Free	1 to 2 hours	bostoncommon	massachusetts
2	Boston	Boston Public Garden	Recreation	Free	1 to 2 hours	bostonpublicgarden	massachusetts
3	Boston	Faneuil Hall Marketplace	shopping	Free	1 to 2 hours	faneuilhallmarketplace	massachusetts
4	Boston	Freedom Trail	Sughtseeing	Free	2 hours to half day	freedomtrail	massachusetts
5	Boston	Samuel Adams Brewery	Wineries/Breweries	Free	1 to 2 hours	samueladamsbrewery	massachusetts

Use case 2:

Display weather of a city for a particular date

```
create procedure sp_weather_city_date
@cityname nvarchar(50),
```

```
@date datetime2(7)

as
begin
select
c.City_Name,w.Date,w.Temp_C_,w.Weather_Condition,w.Minimum_Temperature_C_,w.Maximum_Temperature
_C_,
w.Pressure_hPa_,w.Humidity___,w.Cloudiness___,w.Wind_miles_hr_
from weather w
join city c
on c.City_ID=w.City_id
where c.City_Name=@cityname and date=@date;
end
```

Output:

```
execute sp_weather_city_date 'boston','2019-04-28 03:00:00'
```

Results | Messages

	City_Name	Date	Temp_C_	Weather_Condition	Minimum_Temperature_C_	Maximum_Temperature_C_	Pressure_hPa_	Humidity___	Cloudiness___	Wind_miles_hr_
1	Boston	2019-04-28 03:00:00.0000000	5.55	broken clouds	5.55	5.55	1003.01	66	77	9.73095

Use case 3:

Display days with harsh weather based on city input.

```
create procedure sp_city_harsh_weatner
@cityname nvarchar(50)
as
begin

select c.city_name, w.date,w.weather_condition, w.temp_c_

from weather w
join city c
on c.City_ID=w.City_id
where c.City_Name='boston'  and w.Weather_Condition like '%rain%' or w.Weather_Condition like '%snow';

end
```

Output:

```
exec sp_city_harsh_weatner ' boston '
```

	city_name	date	weather_condition	temp_c_
1	Boston	2019-04-27 00:00:00.0000000	light rain	13.79
2	Boston	2019-04-26 21:00:00.0000000	light rain	11.25
3	Boston	2019-04-26 18:00:00.0000000	light rain	10.05
4	Boston	2019-04-26 15:00:00.0000000	moderate rain	8.62
5	Boston	2019-04-30 21:00:00.0000000	light rain	13.06
6	Boston	2019-04-26 12:00:00.0000000	light rain	7.95
7	Boston	2019-04-29 00:00:00.0000000	light rain	6.58
8	Boston	2019-04-29 03:00:00.0000000	light rain	4.21
9	Boston	2019-04-30 15:00:00.0000000	light rain	6.05
10	Boston	2019-04-27 18:00:00.0000000	light rain	12.86
11	Boston	2019-04-30 18:00:00.0000000	light rain	9.64
12	Boston	2019-04-27 03:00:00.0000000	light rain	15.65
13	Boston	2019-04-27 06:00:00.0000000	light rain	14.86

Use case 4:

Display list of cheapest hotels for a city with approximate price/night.

```
create procedure sp_hotels_cheapest

@city nvarchar(50)

as
begin

select c.city_name,h.hotel_name,h.rating,h.total_reviewers,h.price_per_night,a.building_number,
a.street_name,h.landmark
from hotel h
join address a
on h.Address_Id=a.Address_Id
join city c
on a.City_Id = c.City_ID
where c.City_Name=@city
order by h.PRICE_PER_NIGHT;
end
```

Output:

```
exec sp_hotels_cheapest 'new york city'
```

	city_name	hotel_name	rating	total_reviewers	price_per_night	building_number	street_name	landmark
1	New york City	YOTEL New York	4.5	12,471 reviews	NULL	570	Tenth Avenue	0.5 miles to City center
2	New york City	Hotel Newton	4	1,720 reviews	128	2528	Broadway	2.7 miles to City center
3	New york City	The Watson Hotel	3.5	4,917 reviews	185	440	West th Street	0.8 miles to City center
4	New york City	Wyndham Garden Chinatown	4.5	1,722 reviews	203	93	Bowery	2.8 miles to City center
5	New york City	Crowne Plaza JFK Airport New York City	3.5	923 reviews	231	138	- th Ave	12 miles to City center
6	New york City	Springhill Suites New York Manhattan/Times Squa...	no rating available	No review available	269	338	West th Street	0.4 miles to City center
7	New york City	The Iroquois New York	4.5	4,406 reviews	352	49	West th Street	0.2 miles to City center
8	New york City	PUBLIC, an Ian Schrager hotel	4.5	702 reviews	365	215	Chrystie St	2.4 miles to City center
9	New york City	Gardens Suites Hotel by Affinia	4.5	2,174 reviews	403	215	E th St	1.3 miles to City center

Use case 5:

Display flight schedules for origin, destination, month and day input

```
create procedure sp_flight_schedule
@origincity nvarchar(50),
@destination nvarchar(50),
@month int,
@day int
as
begin

select a.airline_name, f.departure_time,f.arrival_time,f.distance,f.Air_Time,
f.Origin_City_ID,f.Destination_City_ID
from flightschedule f
join airline a
on a.airline_id=f.Airline_ID
join city c
on  c.City_ID=f.Destination_City_ID
where f.Destination_City_ID=@destination and f.Month_Of_The_Year=@month and f.Day_Of_The_Month=@day
and f.Origin_City_ID=@origincity
end
```

Output:

Exec sp_flight_schedule ‘boston’, ‘chicago’,4,6

Results | Messages

	airline_name	departure_time	arrival_time	distance	Air_Time	Origin_City_ID	Destination_City_ID
1	Southwest Airlines	2019-04-26 17:16:00.0000000	2019-04-26 18:57:00.0000000	861	123	boston	chicago
2	United Airlines	2019-04-26 09:00:00.0000000	2019-04-26 10:36:00.0000000	867	128	boston	chicago
3	American Airlines	2019-04-26 15:10:00.0000000	2019-04-26 16:50:00.0000000	867	130	boston	chicago
4	American Airlines	2019-04-26 13:55:00.0000000	2019-04-26 15:35:00.0000000	867	131	boston	chicago
5	American Airlines	2019-04-26 09:10:00.0000000	2019-04-26 10:45:00.0000000	867	131	boston	chicago
6	United Airlines	2019-04-26 10:37:00.0000000	2019-04-26 12:18:00.0000000	867	NULL	boston	chicago
7	American Airlines	2019-04-26 07:50:00.0000000	2019-04-26 09:25:00.0000000	867	131	boston	chicago
8	American Airlines	2019-04-26 12:50:00.0000000	2019-04-26 14:25:00.0000000	867	128	boston	chicago
9	American Airlines	2019-04-26 11:00:00.0000000	2019-04-26 12:35:00.0000000	867	132	boston	chicago
10	United Airlines	2019-04-26 07:03:00.0000000	2019-04-26 08:41:00.0000000	867	135	boston	chicago

Use case 6:

Display ratings of services offered by an airline.

```
create procedure sp_airline_rating
@airline nvarchar(50)
as
begin
```

```
select
airline_name,food_and_beverage_rating,Inflight_Entertainment_Rating,Seat_Comfort_Rating,Staff_Service_Ratin
g
 ,Value_For_Money_Rating
from airline
where airline_name=@airline
end
```

Output:

exec sp_airline_rating 'american airlines'

Results Messages

	airline_name	food_and_beverage_rating	Inflight_Entertainment_Rating	Seat_Comfort_Rating	Staff_Service_Rating	Value_For_Money_Rating
1	American Airlines	2	2	2	2	2

Functions:

Function 1:

Function to convert Celsius to Fahrenheit

```
CREATE FUNCTION dbo.temp (@temp float)
RETURNS float
AS
BEGIN
declare @tempF float
SET @tempF = ( @temp * (9/5))+32

RETURN @tempF
END
```

Output:

```
select city_id,date,dbo.temp(temp_c_) as [Temperature F],Weather_Condition
from weather
where City_id='boston'
```

	city_id	date	Temperature F	Weather_Condition
1	boston	2019-04-26 00:00:00.0000000	39.18	broken clouds
2	boston	2019-04-27 03:00:00.0000000	47.65	light rain
3	boston	2019-04-27 06:00:00.0000000	46.86	light rain
4	boston	2019-04-27 09:00:00.0000000	42.55	light rain
5	boston	2019-04-27 12:00:00.0000000	42.05	overcast clouds
6	boston	2019-04-27 15:00:00.0000000	44.66	light rain
7	boston	2019-04-27 18:00:00.0000000	44.86	light rain
8	boston	2019-04-27 21:00:00.0000000	44.37	light rain
9	boston	2019-04-28 00:00:00.0000000	39.03	light rain
10	boston	2019-04-28 03:00:00.0000000	37.55	broken clouds
11	boston	2019-04-28 06:00:00.0000000	37.71	broken clouds
12	boston	2019-04-26 03:00:00.0000000	37.23	broken clouds

Function 2:

Function to display Price in rupees and as well as into float data type.

```
CREATE FUNCTION dbo.price_conversion (@price float)
RETURNS float
AS
BEGIN
declare @rupees float
declare @p float
set @p = CONVERT(float,@price)
SET @rupees = @p * 69.85

RETURN @rupees
END
```

Output:

```
select city_name,hotel_name,dbo.price_conversion(Price_per_night) as [Price in Rupees],
rating
from hotel h
join address a
on h.Address_Id=a.Address_Id
join city c
on a.City_Id=c.City_ID
where c.City_Name='new york city'
```

	city_name	hotel_name	Price in Rupees	rating
1	New york City	Crowne Plaza JFK Airport New York City	16135.35	3.5
2	New york City	PUBLIC, an Ian Schrager hotel	25495.25	4.5
3	New york City	YOTEL New York	NULL	4.5
4	New york City	Wyndham Garden Chinatown	14179.55	4.5
5	New york City	Springhill Suites New York Manhattan/Times Squa...	18789.65	no rating available
6	New york City	The Watson Hotel	12922.25	3.5
7	New york City	Gardens Suites Hotel by Affinia	28149.55	4.5
8	New york City	The Iroquois New York	24587.2	4.5
9	New york City	Hotel Newton	8940.8	4

Function 3:

Auto-generation of email id for an airline.

```
alter function dbo.emailairline(@airline nvarchar(50),@airlineid nvarchar(50))
returns nvarchar(50)
as
begin
declare @emailid nvarchar(50)
declare @name nvarchar(50)
declare @aid nvarchar(50)

set @name = replace(@airline,' ','_')
```

```
set @emailid = @name + '@airways.com'
return @emailid
end
```

Output:

Results | Messages

	airline_name	airline_id	Email
1	Endeavor Air	9E	Endeavor_Air@airways.com
2	American Airlines	AA	American_Airlines@airways.com
3	Aloha	AQ	Aloha@airways.com
4	Alaska Airlines	AS	Alaska_Airlines@airways.com
5	JetBlue Airways	B6	JetBlue_Airways@airways.com
6	Continental Airlines	CO	Continental_Airlines@airways.com
7	Atlantic Coast Airlines	DH	Atlantic_Coast_Airlines@airways.com
8	Delta Air Lines	DL	Delta_Air_Lines@airways.com
9	Atlantic Southeast Airlines	EV	Atlantic_Southeast_Airlines@airways.com
10	Frontier	F9	Frontier@airways.com
11	AirTran Airways	FL	AirTran_Airways@airways.com
12	Hawaiian Airlines	HA	Hawaiian_Airlines@airways.com

Function 4:

```
create function dbo.attractioncountfree(@city nvarchar(50))
returns int
as
begin
declare @count int
set @count = (select count(attraction_id) from touristattraction where City_ID=@city )
return @count
end
```

Output:

```
select city_name,dbo.attractioncountfree(city_id) as [Number of tourist attractions]from
city
where city_name='boston'
```

Results | Messages

	city_name	Number of tourist attractions
1	Boston	10

Function 5:

Calculate the number of Instagram posts for a city

```
create function dbo.insta_posts_count (@cityid nvarchar(50))
returns int
```

```
as
begin
declare @count int
set @count = (select count(post_id) from instagrampost where City_id=@cityid)
return @count
end
```

Output:

```
select city_name,dbo.insta_posts_count (city_id) as [Number of Instagram Posts]
from city where city_name='chicago'
```

	city_name	Number of Instagram Posts
1	Chicago	10

Function 6:

Display month name from month number.

```
Create function dbo.month_convert(@month int)
returns nvarchar(20)
as
begin
declare @m nvarchar(50)
set @m = (Select DateName( month , DateAdd( month , @month , -1 ) ))
return @m
end
```

Output:

```
Select month_of_the_year,dbo.month_convert(month_of_the_year) as Month
from flightschedule
where Origin_City_ID = 'boston' and Destination_City_ID='chicago'
```

Results Messages

	month_of_the_year	Month
1	5	May
2	6	June
3	4	April
4	5	May
5	4	April
6	5	May
7	5	May
8	5	May
9	5	May
10	4	April
11	6	June
12	6	June
13	6	June

Views:

View 1:

Displays city and state name

```
create view view1
as select city_name,State_Name
from city c join state s
on c.City_ID=s.State_ID;
```

Output:

```
select * from view1
```

Results | Messages

	city_name	State_Name
1	Virginia	Virginia
2	Montana	Montana

View 2:

Display hashtags of a particular user

```
create view  view2
as select user_name,hash_tag
from instagramhashtag ih
join instagrampost i
on i.Post_id = ih.Post_id
where User_Name='chandrebo'
```

Output:

```
select * from view2
```

	user_name	hash_tag
1	chandrebo	tupac
2	chandrebo	newyork
3	chandrebo	indiana
4	chandrebo	texas
5	chandrebo	arizona
6	chandrebo	ohio
7	chandrebo	weed
8	chandrebo	420
9	chandrebo	producer
10	chandrebo	beats
11	chandrebo	smoke

View 3:

Display hotel name along with its complete address

```
alter view view3 as
select hotel_name,building_number,street_name,city_name,state_name
from hotel h join
address a
on a.Address_Id=h.Address_Id
join city c
on c.City_ID = a.City_Id
join state s on a.State_id=s.State_ID
```

Output:

	hotel_name	building_number	street_name	city_name	state_name
1	Crowne Plaza JFK Airport New York City	138	-th Ave	New york City	New York
2	PUBLIC, an Ian Schrager hotel	215	Chrystie St	New york City	New York
3	YOTEL New York	570	Tenth Avenue	New york City	New York
4	Wyndham Garden Chinatown	93	Bowery	New york City	New York
5	Springhill Suites New York Manhattan/Times Squa...	338	West th Street	New york City	New York
6	The Watson Hotel	440	West th Street	New york City	New York
7	Gardens Suites Hotel by Affinia	215	E th St	New york City	New York
8	The Iroquois New York	49	West th Street	New york City	New York
9	Hotel Newton	2528	Broadway	New york City	New York

View 4:

Display free attractions of a city

```
create view view4 as

select c.city_name,ta.attraction_name,ta.attraction_type,ta.entry_type
,ta.Time_To_Spend,ta.attraction_id,c.state_id
from city c
join touristattraction ta
on ta.city_id=c.city_id
where c.city_name='boston' and ta.entry_type='free'
```

Output:

Results Messages

	city_name	attraction_name	attraction_type	entry_type	Time_To_Spend	attraction_id	state_id
1	Boston	Boston Common	Recreation	Free	1 to 2 hours	bostoncommon	massachusetts
2	Boston	Boston Public Garden	Recreation	Free	1 to 2 hours	bostonpublicgarden	massachusetts
3	Boston	Faneuil Hall Marketplace	shopping	Free	1 to 2 hours	faneuilhallmarketplace	massachusetts
4	Boston	Freedom Trail	Sightseeing	Free	2 hours to half day	freedomtrail	massachusetts
5	Boston	Samuel Adams Brewery	Wineries/Breweries	Free	1 to 2 hours	samueladamsbrewery	massachusetts

View 5:

#Description: Displaying cities with most reddit popularity count(Up vote count plus Comments count)

```
create view city_reddit_popularity as (select city.City_Name, (SUM(post.Up_vote_Count) +
SUM(post.Comments_Count)) as "Total_Popularity_Count"
from holiday_planner.city city
inner join holiday_planner.redditpost post
on city.City_ID = post.City_ID
group by city.City_Name
order by Total_Popularity_Count DESC);
```

#Executing view:

```
select * from city_reddit_popularity;
```

Output:

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

City_Name	Total_Popularity_Count
Chicago	113
Los Angeles	92
Boston	76
Las Vegas	70
Seattle	69
Austin	66
Miami	60
New Orleans	36
Portland	20
New york City	18
Philadelphia	17
Denver	14

View 6:

#View of Use case (2)

#Description: Displaying tweet count per state from the stored tweets information, thereby accessing state popularity in social media.

```
create view state_tweet_count as (select s.State_Name,count(Tweet_ID) as "Tweet_Count"
from holiday_planner.tweet t
inner join holiday_planner.city city
on t.City_ID = city.City_ID
inner join holiday_planner.state s
on city.State_ID = s.State_ID
group by s.State_Name);
```

#Executing view:

```
select * from state_tweet_count;
```

Output:

Result Grid | Filter Rows:

State_Name	Tweet_Count
Maine	4
Mississippi	1
Hawaii	2
Alaska	4
South Carolina	5
Louisiana	2
Texas	2
New Mexico	1
Florida	4
Georgia	2
California	1
Washington	2
Colorado	1
Pennsylvania	2
Massachusetts	3
Tennessee	5
Illinois	1

References & Citations:

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• YouTube videos: ▪ https://www.youtube.com/watch?v=4UcqECQe5Kc

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- Instagram