

Database Project Report # 1

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Group Member:

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Introduction:

Our project is based on the most famous social software online, Instagram. It is used to share photos and videos, users could post title, text, location and hashtag to their posts, meanwhile, users can give a “like” to any post they like, such as a photo or a place. They could customize a place, give it a whole new name to use in their posts. Making friends is also an important function for this software, they could request and receive request to someone they want to social with, one could share a special photo to everyone using this software or just some friends of his own, friends of friends are also introduced into this software to explore someone with same hobby to make friends with.

Database Schema:

USER: uid, user_name, password, register_time, real_name, age, gender, city, last_login, last_logout

FRIENDS: sender_id, receiver_id, status, visible

POST: post_id, uid, title, text, upload_time, entry, location_id, type, url

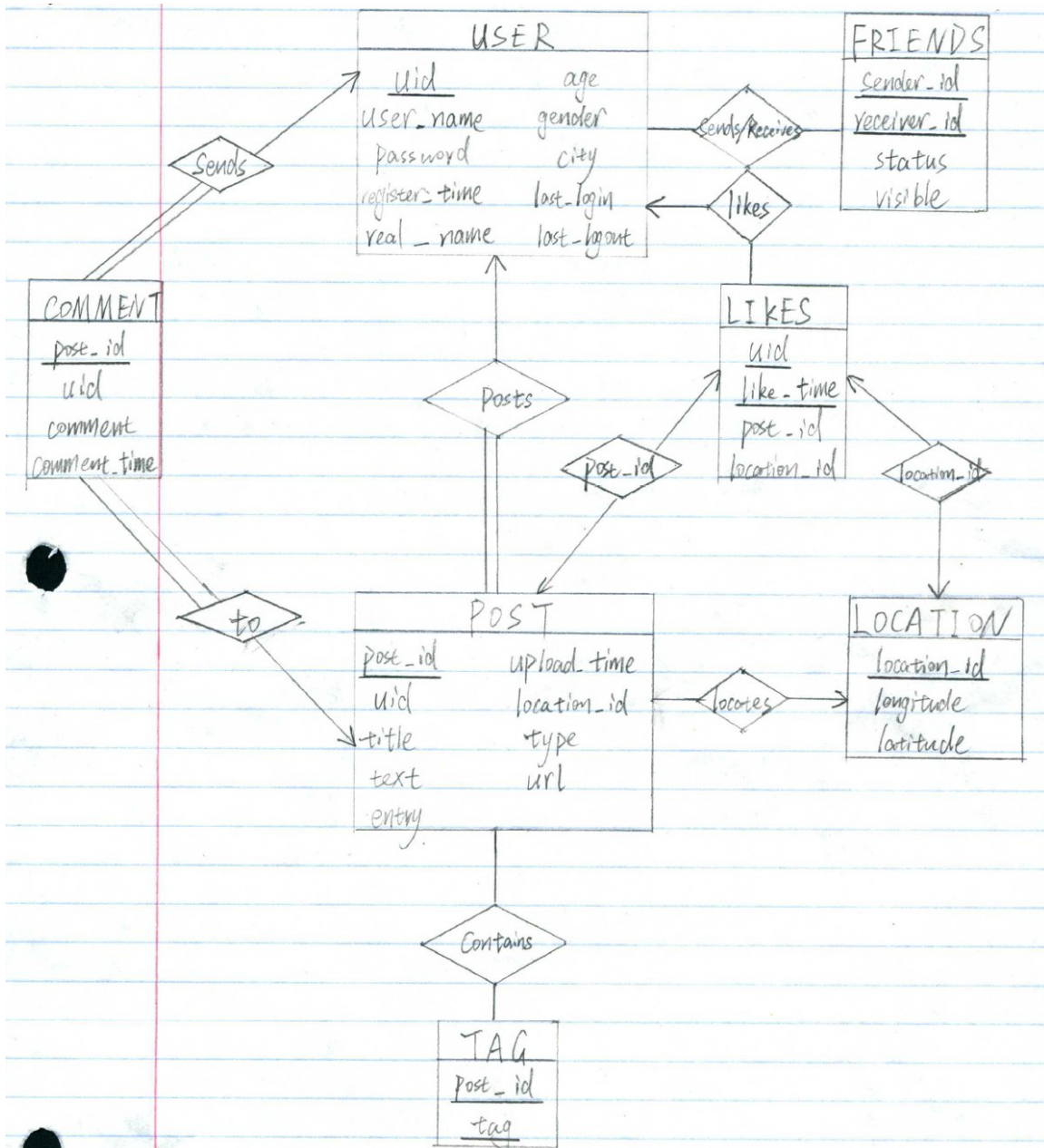
TAG: post_id, tag

LOCATION: location_id, longitude, latitude, location_name

LIKES: uid, like_time, post_id, location_id

COMMENT: post_id, uid, comment, comment_time

E-R diagram



Some sample SQL in system

Content Posting:

1 Sign up and Create a new user's profile

```
INSERT INTO `user` (`username`, `password`, `real_name`, `age`, `gender`, `city`)
VALUES
('Bill', '123', 'Xinge', 24, 'male', 'NJ')
```

2 Edit a new user's profile

```
UPDATE `user` SET gender = 'female' WHERE uid = 17
```

3 Post an image

```
INSERT INTO `post`(`uid`, `title`, `text`, `entry`, `location_id`, `type`, `url`) VALUES (12,'project','database','all', 3,'photo','C:\Users\Sijie\OneDrive\Pictures\IMG_0354.JPG')
```

4 Add a new entry to post diary

```
UPDATE `post` SET `entry`= 'friends' WHERE post_id = 6
```

Friendship:

1 Send a friendship request to someone

```
INSERT INTO `friends`(`sender_id`, `receiver_id`, `visible`) VALUES (12, 16, 'all')
```

2 Accept a friendship request to someone

```
UPDATE `friends` SET `status`= 'accepted' WHERE sender_id = 12 AND receiver_id = 16
```

3 List all one user's current friends

```
(SELECT uid, username FROM `friends` JOIN `user` WHERE receiver_id = uid AND sender_id = 12 AND status = 'accepted')
```

UNION

```
(SELECT uid, username FROM `friends` JOIN `user` WHERE sender_id = uid AND receiver_id = 12 AND status = 'accepted')
```

4 List all one user's friends of friends

```
SELECT receiver_id FROM `friends` WHERE STATUS = 'accepted' AND receiver_id <> 12 AND sender_id IN (
```

```
SELECT sender_id FROM `friends` WHERE receiver_id =12 AND STATUS = 'accepted')
```

UNION

```
SELECT receiver_id FROM `friends` WHERE STATUS = 'accepted' AND receiver_id <> 12 AND sender_id IN
```

```
(SELECT receiver_id FROM `friends` WHERE sender_id =12 AND STATUS = 'accepted')
```

UNION

```
SELECT sender_id FROM `friends` WHERE STATUS = 'accepted' AND sender_id <> 12 AND receiver_id IN (
```

```
SELECT sender_id FROM `friends` WHERE receiver_id =12 AND STATUS = 'accepted')
```

UNION

```
SELECT sender_id FROM `friends` WHERE STATUS = 'accepted' AND sender_id <> 12 AND receiver_id IN
```

```
(SELECT receiver_id FROM `friends` WHERE sender_id =12 AND STATUS = 'accepted')
```

Browse/Search Queries

1 A user wants to see the profiles of all FOFs

```
SELECT `uid`, `username`, `register_time`, `real_name`, `age`, `gender`, `city`,
```

```

`last_login`, `last_logout` FROM `user` WHERE uid IN (
SELECT receiver_id FROM `friends` WHERE STATUS = 'accepted' AND receiver_id <>
12 AND sender_id IN (
SELECT sender_id FROM `friends` WHERE receiver_id =12 AND STATUS =
'accepted'))
UNION
SELECT `uid`, `username`, `register_time`, `real_name`, `age`, `gender`, `city`,
`last_login`, `last_logout` FROM `user` WHERE uid IN (
SELECT receiver_id FROM `friends` WHERE STATUS = 'accepted' AND receiver_id <>
12 AND sender_id IN
(SELECT receiver_id FROM `friends` WHERE sender_id =12 AND STATUS = 'accepted'))
UNION
SELECT `uid`, `username`, `register_time`, `real_name`, `age`, `gender`, `city`,
`last_login`, `last_logout` FROM `user` WHERE uid IN (
SELECT sender_id FROM `friends` WHERE STATUS = 'accepted' AND sender_id <> 12
AND receiver_id IN (
SELECT sender_id FROM `friends` WHERE receiver_id =12 AND STATUS = 'accepted'))
UNION
SELECT `uid`, `username`, `register_time`, `real_name`, `age`, `gender`, `city`,
`last_login`, `last_logout` FROM `user` WHERE uid IN (
SELECT sender_id FROM `friends` WHERE STATUS = 'accepted' AND sender_id <>
12 AND receiver_id IN
(SELECT receiver_id FROM `friends` WHERE sender_id =12 AND STATUS =
'accepted'))

```

uid	username	register_time	real_name	age	gender	city	last_login	last_logout
15	He	2016-04-10 13:45:43	He Huang	23	male	manhattan	NULL	NULL

2 A user want to see the profiles of friends

```

SELECT `uid`, `username`, `register_time`, `real_name`, `age`, `gender`, `city`, `last_login`,
`last_logout` FROM `user` WHERE uid IN
(SELECT sender_id FROM `friends` WHERE receiver_id = 12 AND status = 'accepted')
UNION
SELECT `uid`, `username`, `register_time`, `real_name`, `age`, `gender`, `city`, `last_login`,
`last_logout` FROM `user` WHERE uid IN
(SELECT receiver_id FROM `friends` WHERE sender_id = 12 AND status = 'accepted')

```

uid	username	register_time	real_name	age	gender	city	last_login	last_logout
13	Chenglong	2016-04-10 13:43:38	Chenglong S	24	male	bklyn	NULL	NULL
14	Yi	2016-04-10 13:45:43	Yi Qin	23	female	beijing	NULL	NULL
16	Yali	2016-04-10 13:50:04	Yali Wang	24	female	bklyn	NULL	NULL

3 uid 13 want to see output post by anyone that contain key word "bobst"

```
SELECT `post_id`, `uid`, `title`, `text`, `upload_time`, `entry`, `location_id`, `type`, `url`
FROM `post` WHERE entry = 'all' AND text LIKE '%bobst%'
```

UNION

```
SELECT `post_id`, `uid`, `title`, `text`, `upload_time`, `entry`, `location_id`, `type`, `url`
FROM `post` WHERE entry = 'friends' AND text LIKE '%bobst%' AND uid IN
```

```
(SELECT sender_id FROM `friends` WHERE receiver_id = 13 AND status = 'accepted')
```

UNION

```
SELECT `post_id`, `uid`, `title`, `text`, `upload_time`, `entry`, `location_id`, `type`, `url`
FROM `post` WHERE entry = 'friends' AND text LIKE '%bobst%' AND uid IN
```

```
(SELECT receiver_id FROM `friends` WHERE sender_id = 13 AND status = 'accepted')
```

post_id	uid	title	text	upload_time	entry	location_id	type	url
9	12	project	I am in bobst library	2016-04-10 17:04:30	all	3	photo	[BLOB - 40 字节]
7	15	Bobst	I am learning telecommunication in bobst library.	2016-04-10 14:54:07	friends	3	text	NULL

4 all locations liked by friends of uid=12

```
SELECT `location_name` FROM `location` NATURAL JOIN `likes` WHERE uid IN
```

```
(SELECT sender_id FROM `friends` WHERE receiver_id = 12 AND status = 'accepted')
```

UNION

```
SELECT `location_name` FROM `location` NATURAL JOIN `likes` WHERE uid IN
```

```
(SELECT receiver_id FROM `friends` WHERE sender_id = 12 AND status = 'accepted')
```

Input some data into the database

USER: uid, user_name, password, register_time, real_name, age, gender, city, last_login, last_logout

	uid	username	password	register_time	real_name	age	gender	city	last_login	last_logout
<input type="checkbox"/> Edit Copy Delete	12	Sijie	123	2016-04-10 13:43:38	Sijie Liu	24	male	bklyn	2016-04-06 00:00:00	2016-04-08 00:00:00
<input type="checkbox"/> Edit Copy Delete	13	Chenglong	234	2016-04-10 13:43:38	Chenglong S	24	male	bklyn	2016-04-01 07:00:00	2016-04-08 07:00:00
<input type="checkbox"/> Edit Copy Delete	14	Yi	555	2016-04-10 13:45:43	Yi Qin	23	female	beijing	2016-03-01 10:00:00	2016-03-31 00:00:00
<input type="checkbox"/> Edit Copy Delete	15	He	333	2016-04-10 13:45:43	He Huang	23	male	manhattan	2016-02-02 11:00:00	2016-02-13 11:00:00
<input type="checkbox"/> Edit Copy Delete	16	Yali	666	2016-04-10 13:50:04	Yali Wang	24	female	bklyn	2016-04-01 00:00:00	2016-04-02 17:00:00
<input type="checkbox"/> Edit Copy Delete	17	Bill	123	2016-04-10 16:49:57	Xinge	24	female	NJ	2016-04-03 16:00:00	2016-04-05 00:53:00

FRIENDS: sender_id, receiver_id, status, visible

		sender_id	receiver_id	status	visible
<input type="checkbox"/> Edit Copy Delete		12	14	accepted	all
<input type="checkbox"/> Edit Copy Delete		12	15	declined	all
<input type="checkbox"/> Edit Copy Delete		12	16	accepted	all
<input type="checkbox"/> Edit Copy Delete		13	12	accepted	all
<input type="checkbox"/> Edit Copy Delete		13	15	accepted	all
<input type="checkbox"/> Edit Copy Delete		15	16	accepted	friends

POST: post_id, uid, title, text, upload_time, entry, location_id, type, url

		post_id	uid	title	text	upload_time	entry	location_id	type	url
<input type="checkbox"/> Edit Copy Delete		6	12	In DC	Time is fleeting.	2016-04-10 14:09:47	friends	NULL	photo	[BLOB - 442.8 Kib]
<input type="checkbox"/> Edit Copy Delete		7	15	Bobst	I am learning telecommunication in bobst library.	2016-04-10 14:54:07	friends	3	text	NULL
<input type="checkbox"/> Edit Copy Delete		9	12	project	I am in bobst library	2016-04-10 17:04:30	all	3	photo	[BLOB - 40 B]

TAG: post_id, tag

		post_id	tag
<input type="checkbox"/> Edit Copy Delete		6	journey
<input type="checkbox"/> Edit Copy Delete		6	vacation
<input type="checkbox"/> Edit Copy Delete		7	study

LOCATION: location_id, longitude, latitude, location_name

		longitude	latitude	location_id	location_name
<input type="checkbox"/> Edit Copy Delete		456	123	2	boston
<input type="checkbox"/> Edit Copy Delete		345	678	3	nyc
<input type="checkbox"/> Edit Copy Delete		685	235	4	miami

LIKES: uid, like_time, post_id, location_id

				post_id	location_id	uid	like_time
<input type="checkbox"/>				NULL	2	13	2016-04-10 18:24:18
<input type="checkbox"/>				6	NULL	14	2016-04-10 14:56:16
<input type="checkbox"/>				NULL	4	14	2016-04-10 18:24:18
<input type="checkbox"/>				7	NULL	15	2016-04-10 14:56:16
<input type="checkbox"/>				NULL	3	15	2016-04-10 18:24:37

COMMENT: post_id, uid, comment, comment_time

				post_id	uid	comment	comment_time
<input type="checkbox"/>				6	14	Cool!	2016-04-10 14:56:59

Some sample procedures

1 Get FOF lists

Routine name
Type
Parameters

Get_FOFList
PROCEDURE
IN INT

Add parameter

Definition

```

1 BEGIN
2 CREATE TEMPORARY TABLE temp_list(uid int(11));
3 INSERT INTO temp_list(uid) SELECT receiver_id FROM `friends` WHERE STATUS = 'accepted' AND
receiver_id <> userid AND sender_id IN (
4 SELECT sender_id FROM `friends` WHERE receiver_id = userid AND STATUS = 'accepted');
5 INSERT INTO temp_list(uid) SELECT receiver_id FROM `friends` WHERE STATUS = 'accepted' AND
receiver_id <> userid AND sender_id IN
6 (SELECT receiver_id FROM `friends` WHERE sender_id = userid AND STATUS = 'accepted');
7 INSERT INTO temp_list(uid) SELECT sender_id FROM `friends` WHERE STATUS = 'accepted' AND
sender_id <> userid AND receiver_id IN (
8 SELECT sender_id FROM `friends` WHERE receiver_id = userid AND STATUS = 'accepted');
9 INSERT INTO temp_list(uid) SELECT sender_id FROM `friends` WHERE STATUS = 'accepted' AND
sender_id <> userid AND receiver_id IN
10 (SELECT receiver_id FROM `friends` WHERE sender_id = userid AND STATUS = 'accepted');
11 END

```

```

1 call Get_FOFList(12);
2 select uid from temp_list

```

```

post_id
uid
comment
comment_time

```

SELECT * SELECT INSERT UPDATE DELETE Clear Format

Get auto-saved query

✓ Showing rows 0 - 1 (2 total, Query took 0.0003 seconds.)

```
select uid from temp_list
```

☐ Show all

Number of rows: 25

Filter rows:

+ Options

uid

15

15

2 Get_FriendList

Routine name	<input type="text" value="Get_FriendList"/>										
Type	PROCEDURE <input type="button" value="Change to FUNCTION"/>										
Parameters	<table><thead><tr><th>Direction</th><th>Name</th><th>Type</th><th>Length/Values</th><th>Options</th></tr></thead><tbody><tr><td>IN</td><td><input type="text" value="userid"/></td><td>INT</td><td>11</td><td>Charset <input type="text"/></td></tr></tbody></table> <div><input type="button" value="Add parameter"/> <input type="button" value="Remove last parameter"/></div>	Direction	Name	Type	Length/Values	Options	IN	<input type="text" value="userid"/>	INT	11	Charset <input type="text"/>
Direction	Name	Type	Length/Values	Options							
IN	<input type="text" value="userid"/>	INT	11	Charset <input type="text"/>							
Definition	<pre>BEGIN CREATE TEMPORARY TABLE temp_list(uid int(11), username varchar(11)); INSERT INTO temp_list(uid, username) SELECT uid, username FROM `friends` JOIN `user` WHERE receiver_id = uid AND sender_id = userid AND status = 'accepted'; INSERT INTO temp_list(uid, username) SELECT uid, username FROM `friends` JOIN `user` WHERE sender_id = uid AND receiver_id = userid AND status = 'accepted'; END</pre>										

```
1 call Get_FriendList(12);
2 select * from temp_list
```


✓ Showing rows 0 - 2 (3 total, Query took 0.0003 seconds.)

```
select * from temp_list
```

☐ Show all

Number of rows: 25

Filter rows:

+ Options

uid username

14 Yi

16 Yali

13 Chenglong

3 Get number of the hottest like

Routine name	Hottest_Num				
Type	PROCEDURE Change to FUNCTION				
Parameters	Direction	Name	Type	Length/Values	Options
	IN	userid	INT	11	Charset
	IN	laterthan	DATETIME		Charset
	OUT	num	INT	11	Charset
	Add parameter		Remove last parameter		
Definition	<pre>select count(*) as num into num from post as p join likes as l where p.post_id = l.post_id and p.uid = userid and upload_time > laterthan group by p.post_id order by num desc limit 1</pre>				

Execute routine `Hottest_Num`

Routine parameters

Name	Type	Function	Value
userid	INT		12
laterthan	DATETIME		2016-04-08 00:00:00

[Go](#) [Close](#)

```
SET @p0 = '12';
```

```
SET @p1 = '2016-04-08 00:00:00';
```

```
CALL `Hottest_Num` (  
    @p0 , @p1 , @p2  
);
```

Execution results of routine `Hottest_Num`

num

1
