

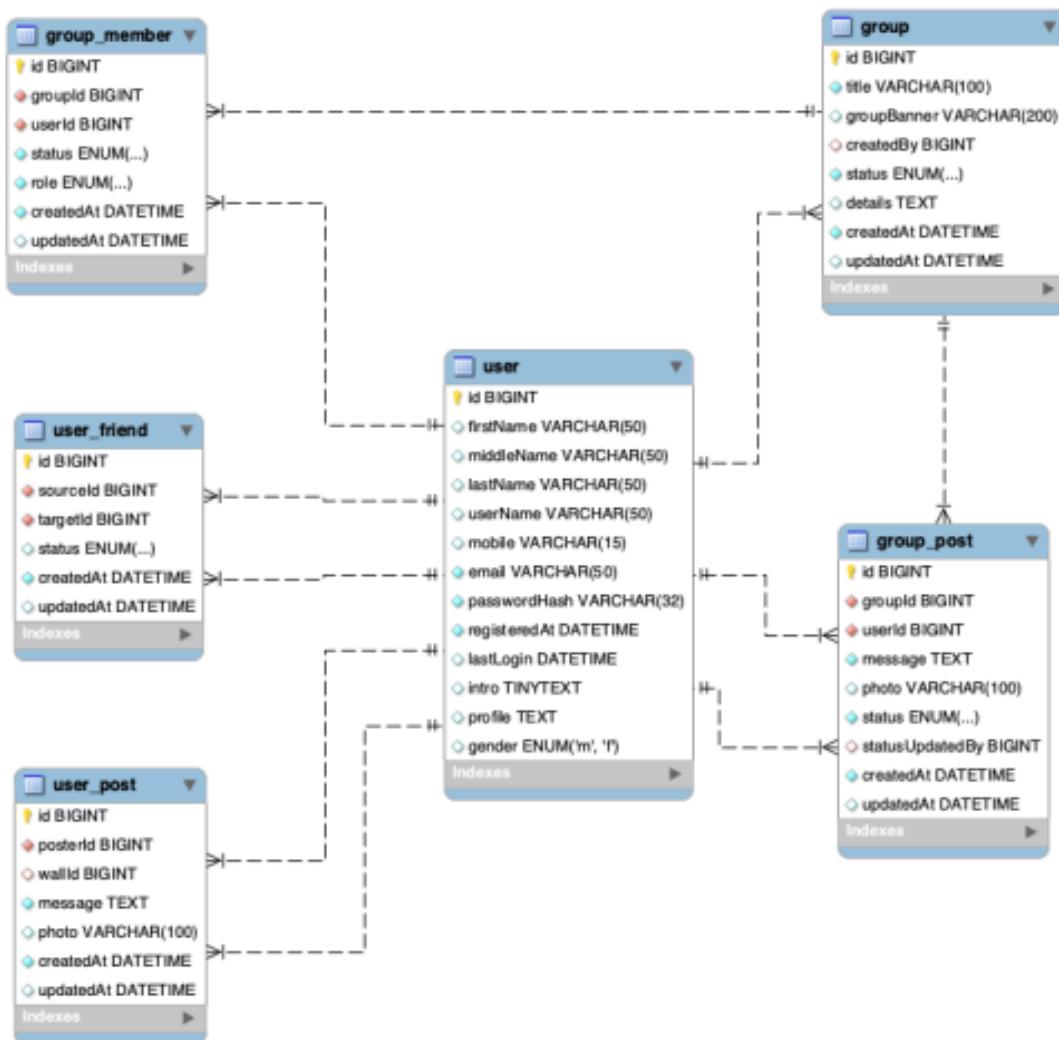
# Lab03: SQL DML

**Objective:** To study and practice the SQL commands for data query and retrieval (SQL DML)

**Estimated Time:** 3 hours

**Number of Tasks:** 10

**Description: Simple Social Network System (SNS)**



In this take-home exercise, we still follow the previous case study, the simple social network system. The exercise given in this laboratory will be based on 6 tables shown in the above ER Diagram: *user*, *user\_friend*, *user\_post*, *group*, *group\_member* and *group\_post*. **You are required to show SQL commands and snapshots of the output** for querying to correspond to the given questions and requirements.

## Task1:

Execute Lab03-sns.sql in MySQL Client (e.g., MySQL Workbench) and then verify by execute SHOW TABLES; of the database.

**show tables;**

```
232
233 -- Dump completed on 2021-08-25 22:01:31
234 • show tables;
```

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

Tables_in_sns
group
group_member
group_post
user
user_friend
user_message
user_post

## Task2:

Show all public posts including posterId, message and created date from the latest to the oldest.

**select posterId,wallId,createdAt from user\_post where wallId is not null;**

```
234 • show tables;
235
236 • select posterId,wallId,createdAt from user_post where wallId is not null;
```

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

posterId	wallId	createdAt
251	216	2021-08-19 12:25:43
11	26	2021-07-17 06:02:12
79	57	2021-08-05 09:31:30
67	77	2021-08-19 01:27:20
252	215	2021-08-19 11:37:18
5	238	2021-07-16 18:26:04
91	217	2021-08-01 01:24:01
297	278	2021-07-26 16:21:52
280	60	2021-07-22 03:38:13
208	215	2021-08-18 19:08:31

## Task 3:

List all users who didn't have their middleName ordered by their lastName ascendingly.

**select \* from user where middleName is not null order by lastName;**

```
238 • select * from user where middleName is not null order by lastName;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id	firstName	middleName	lastName	userName	mobile	email	passwordHash	registeredAt	lastLogin	intro	profile	gender
285	Winston	Refresh data re-executing the original query	Winston	wautie7w@behance.net	8151511086	wautie7w@altervista.org	eUV9mAu9E	2021-07-30 13:27:02	2021-07-01 03:10:48	Tax Accountant	facilitate bleeding-edge content	m
44	Timmo	Jeffcock	Base	timmo	9151894047	hbattle3w@bing.com	DMASkWVR2mU	2021-07-25 13:19:51	2021-07-20 06:00:05	Project Manager	evolve viral synergies	NULL
141	Hugibert	Morson	Battle	hbattle3w	9651894047	hbattle3w@bing.com	ZVDI4pek	2021-07-16 17:40:35	2021-08-17 21:13:41	Nurse	expedite impactful metrics	m
253	Welby	Kervin	Baume	wbaume70	3163592273	wbaume70@de.vu	jbrg4mWygXSt	2021-07-10 18:04:23	2021-07-07 18:45:22	Assistant Manager	incubate magnetic channels	m
5	Quill	Rendell	Beadell	qbeadell4	6032360300	qbeadell4@salon.com	G2aEs3TRk	2021-08-03 16:52:01	NULL	Senior Quality Engineer	scale 24/365 users	NULL
118	Juliennne	Bumpas	Beany	beany	725187800	jbeany39@on.ne.jp	SkrT7M6tYAS1	2021-07-30 20:20:47	2021-07-27 08:30:36	Budget/Accounting Analyst I	matrix end-to-end interdependencies	NULL
174	Rodette	Scanterbury	Benger	rbenger4t	6292773308	rbenger4t@flavors.me	0cJ3abugxcCT	2021-08-10 00:45:08	2021-07-12 19:58:26	Business Systems Development Analyst	architect e-business networks	NULL
207	Dion	Stickney	Beumont	dbeumont5q	6842004598	dbeumont5q@a8.net	Ap79ridzLlm	2021-07-21 04:07:55	2021-07-01 10:52:22	Electrical Engineer	revolutionize dynamic initiatives	f
91	Kiri	Caulcutt	Birwhistle	kbirwhistle2	4708292168	kbirwhistle2@amazon.co.jp	EfWU7a219p	2021-07-15 01:47:12	2021-08-11 11:06:45	Budget/Accounting Analyst I	leverage bricks-and-clicks eyeballs	f

## Task 4:

The owner of the wall id '01' wants to view all the posts posted on their wall before '2021-08-01' where the latest posts are returned at the top. Write a SQL command for this.

```
select * from user_post where createdAt < '2021-08-01' and wallId=1 order by createdAt ;
```

A screenshot of a MySQL query results window. The query is: `select * from user_post where createdAt < '2021-08-01' and wallId=1 order by createdAt ;`. The results show two rows of data:

	id	posterId	wallId	message	photo	createdAt	updatedAt
▶	653	91	1	Aliquam quis turpis eget elit sodales scelerisque....	NULL	2021-07-20 02:23:52	NULL
▶	570	74	1	Curabitur in libero ut massa volutpat convallis. ...	NULL	2021-07-27 05:21:00	NULL
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL

## Task 5:

How many friends does each user have (use the count of accepted friend requests)? The output should show each userId and the number of friends each user has from the highest to the lowest.

```
select sourceId, count(sourceId) as Num_of_frnds from user_friend where status='accepted' group by sourceId order by Num_of_frnds desc;
```

A screenshot of a MySQL query results window. The query is: `select sourceId, count(sourceId) as Num_of_frnds from user_friend where status='accepted' group by sourceId order by Num_of_frnds desc;`. The results show the number of friends for each user:

sourceId	Num_of_frnds
275	5
64	4
218	4
269	4
15	3
31	3
57	3
63	3
68	3
74	3

## Task 6:

Show all created groups that are not blocked (both newly created and active), showing the latest updated group first.

```
select * from `group` where status != 'blocked' order by updatedAt;
```

```
246 • select * from `group` where status != 'blocked' order by updatedAt;
```

	id	title	groupBanner	createdBy	status	details	createdAt	updatedAt
▶	71	Ventosanzap	http://dummyimage.com/1640x856.png/ff4444...	290	new	NULL	2021-08-18 23:02:38	NULL
	33	Voyatouch	http://dummyimage.com/1640x856.png/cc0000...	134	new	NULL	2021-07-29 07:40:53	NULL
	36	Zathin	NULL		new	48	Mauris enim leo, rhoncus sed, vestibulum sit am...	2021-07-23 08:36:35
	39	Stronghold	NULL		new	263	NULL	2021-08-19 03:16:25
	40	Voyatouch	http://dummyimage.com/1640x856.png/ff4444...	136	new	Duis ac nibh. Fusce lacin...	2021-08-03 05:03:40	NULL
	47	Voltsillam	http://dummyimage.com/1640x856.png/cc0000...	41	new	NULL	2021-07-15 21:42:26	NULL
	50	Tampflex	NULL		new	90	Lorem ipsum dolor sit amet, consectetur adipis...	2021-08-03 14:15:34
	55	Y-Solowarm	NULL		new	249	Phasellus sit amet erat. Nulla tempus. Vivamus i...	2021-07-16 16:34:26
	62	Regrant	NULL		new	39	Nulla neque libero, convallis eget, eleifend luctu...	2021-07-19 14:11:36
	63	Trippledex	NULL		new	189	Nullam porttitor lacus at turpis. Donec posuere ...	2021-07-05 15:53:16

## Task 7:

Show how many members of each group. List all groups sorted by the number of members from the lowest to the highest. (*A member is considered to be in the group only if their request has been approved.*)

```
select groupId, count(userId) as Number_of_users from group_member group by groupId order by Number_of_users;
```

groupId	Number_of_users
86	9
26	9
85	9
87	10
63	10
3	10
8	10
9	10
16	10
88	10

## Task 8:

List top 10 users who have joined the most number of groups with their group count and user Id.

```
select userId, count(groupId) as Number_of_groups from group_member group by userId order by Number_of_groups desc limit 10;
```

userId	Number_of_groups
178	11
179	10
184	9
59	9
116	9
286	8
181	8
124	8
42	8
95	7

## Task 9:

What are the top 3 most trending groups for the Month of August 2022? (*Trending groups are the groups with the maximum number of posts*).

```
select groupId, count(id) as Number_of_posts from group_post where createdAt >= '2022-08-01'  
and createdAt < '2022-09-01' group by groupId order by Number_of_posts desc limit 3 ;
```

```
249  
250 • select groupId, count(id) as Number_of_posts from group_post where createdAt >= '2022-08-01'  
251     and createdAt < '2022-09-01' group by groupId order by Number_of_posts desc limit 3 ;  
252  
253
```

groupId	Number_of_posts
1	100

## Task 10:

If you are the administrator of this social network system, and you want to check which posts violate the terms and conditions of usage. The first violation is posting hate speech which is a post that contains the words considered banned words. Show the SQL command to filter the post having messages containing any of a word in the banned word list (you can define your own banned word dictionary of 3 words).

```
select * from group_post where message like '%bad%' or message like '%rat%' or message like '%bat%';
```

```
255  
256  
257 • select * from group_post where message like '%bad%' or message like '%rat%' or message like '%bat%';
```

id	groupId	userId	message	photo	status	statusUpdatedBy	createdAt	updatedAt
497	24	46	In hac habitasse platea dictumst. Morbi vestibul...	NULL	rejected	146	2021-08-02 21:18:53	2021-08-07 21:18:53
508	28	173	Integer tincidunt ante vel ipsum. Praesent blan...	NULL	rejected	NULL	2021-07-22 16:51:57	2021-07-24 16:51:57
509	46	142	Maecenas pulvinar lobortis est. Phasellus sit am...	http://dummyimage.com/368x219.png/ff4444/f...	new	NULL	2021-07-04 17:19:59	NULL
542	48	115	Phasellus sit amet erat. Nula tempus. Vivamus i...	NULL	new	NULL	2021-07-10 18:50:10	NULL
545	24	203	Quisque porta volutpat erat. Quisque erat eros...	NULL	rejected	146	2021-08-10 21:59:11	2021-08-11 21:59:11
559	66	92	Nulla facilisi. Cras non velit nec nisi vulputate no...	NULL	new	NULL	2021-08-10 16:37:29	NULL
561	38	287	Fusce congue, diam id ornare imperdiet, sapien ...	NULL	new	NULL	2021-07-26 23:32:27	NULL
565	33	275	Donec diam neque, vestibulum eget, vulputate ...	NULL	new	NULL	2021-08-14 16:21:53	NULL
567	4	299	Duis at velit eu est congue elementum. In hac h...	NULL	rejected	82	2021-08-13 06:19:34	2021-08-14 06:19:34
570	16	95	Vestibulum ante ipsum primis in faucibus orci luct...	NULL	rejected	NULL	2021-08-10 10:34:19	2021-08-12 10:34:19