

Blogging Database

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The following describes a basic structure for a blogging Database. The functionality it must have are adding a user, a user being able to add a blog post, a topic on which the post is based on, which can be useful for suggesting content to users, comments and likes on a blog post, and replies to a comment, a user being able to add friends and messages between users.

Entities :

User_: This entity contains information of the users.

User_
<u>userNName</u>
password
name
First_name
Middle_name
Last_name
mail_id
address
house_no
colony
city
state
country
date_joined
{mobile_number}
DOB

Blog_Post: This entity contains information related to a blog.

Blog_Post
<u>Post_id</u>
Title
Date_created
No_of_likes
No_of_comments

Page: This entity contains information related to pages.

Page
<u>page_id</u>
date_modified
content

Messages: This entity contains information about all the messages.

Messages
<u>Message_id</u>
Content
Date_sent
Subject

Comment_: This entity stores all the information about a comment.

Comment_
<u>Comment_id</u>
Date_commented
Comment_text

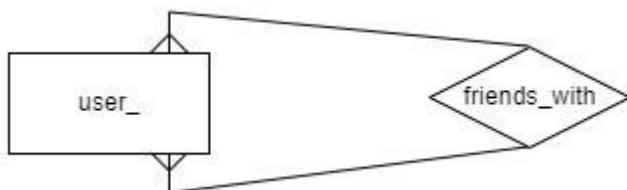
Topic: This entity stores all the different topics a blog_post can have.

Topic
<u>Topic_name</u>

Relationships:

Friends_with: It is a self-relationship with **user_** entity. It represents the friends of a **user_**.

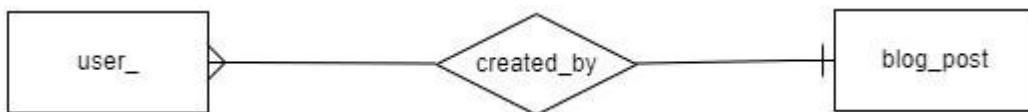
→ Cardinality : Many to Many



- As the relationship is from many to many we need a separate relation for **friends_with** relationship.

Created_by : It is a relationship between **user_** and **blog_post**, which denotes, which **user_** has written which **blog_post**.

→ Cardinality : One to Many



- As this relationship is from one to many, we combine **created_by** relation on the many side i.e. **blog_post**, by including the primary key of **user_** (**username**)

Liked_by: It is a relationship between **user_** and **blog_post** representing which user has liked which **blog_post**.

→ Cardinality : Many to Many



- As this relationship is from many to many we need a separate relation for the **liked_by** relationship.

Commented_by: This relationship is between **user_** and **comment_**. This represents which user has commented and its corresponding information.

→ Cardinality : Many to One



- As this relationship is from many to one, we combine **commented_by** relationship on the many side i.e. **comment_**, by including the primary key of **user_** (**username**)

Has_comments: This relationship is between **blog_post** and **comment_** entities, representing which **comment_** corresponds to which **blog_post**.

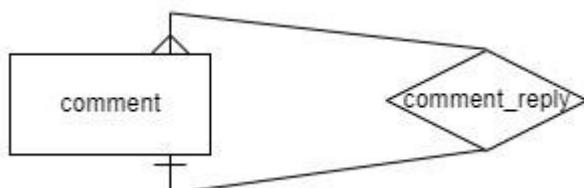
→ Cardinality : One to Many



- As this relationship is from one to many, we combine **commented_by** relationship on the many side i.e. **comment_**, by including the primary key of **blog_post** (**postid**).

Comment_reply: This is a self-relationship with **comment_** entity. This represents which **reply_comment** corresponds to which **parent_comment**.

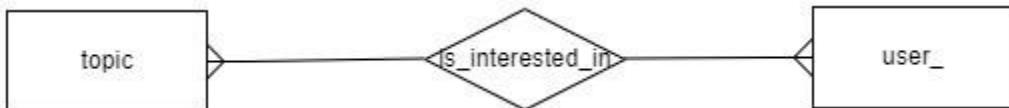
→ Cardinality : One to Many



- As a **reply_comment** is on the one side of the relation, we could include **parent_comment** , which is on the many side, to make one relation **comment reply**, with a primary key (**reply comment**).

Is_interested_in: This is a relationship between ***user_*** and ***topic***. It specifies the topics that a user is interested in.

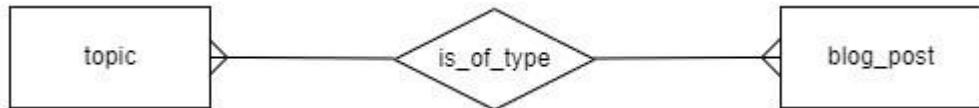
→ Cardinality : Many to Many



- As this is a many to many relationship we need a separate relation for ***is_interested_in*** relationship.

Is_of_type: This is a relationship between ***blog_post*** and ***topic***. This specifies what type of content a blog contains.

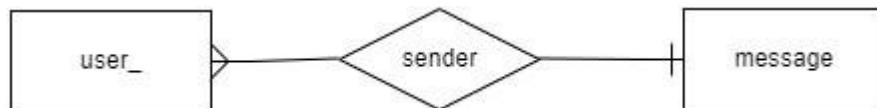
→ Cardinality : Many to Many



- As this is a many to many relationship we need a separate relation for ***Is_of_type*** relationship.

Sender: It is a relationship between ***messages*** and ***user_***. It specifies which user has sent which message.

→ Cardinality : One to Many



- As this relation is from one to many, we combine ***sender*** relation on the many side i.e. ***messages***, by including the primary key of ***user_*** (***username***)

Receiver: It is also a relationship between **messages** and **user_**. It specifies which user has received which message.

→ Cardinality : Many to Many



- As this is a many to many relationship we need a separate relation for **Receiver** relationship.

Post_has_pages: This relationship is between **blog_post** and **pages**. It signifies which **post** corresponds to which **page**.

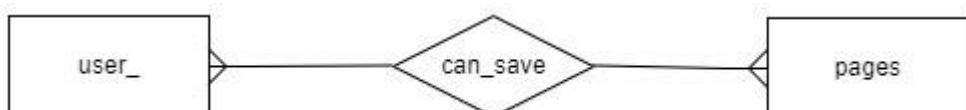
→ Cardinality : One to Many



- As this relationship is from one to many, we combine **blog_post_has_pages** relationship on the many side i.e. **pages**, by including the primary key of **blog_post** (**postid**).

Can_save: This is a relationship between **pages** and **user_**. It denotes which **user_** has saved which **pages**.

→ Cardinality : Many to Many

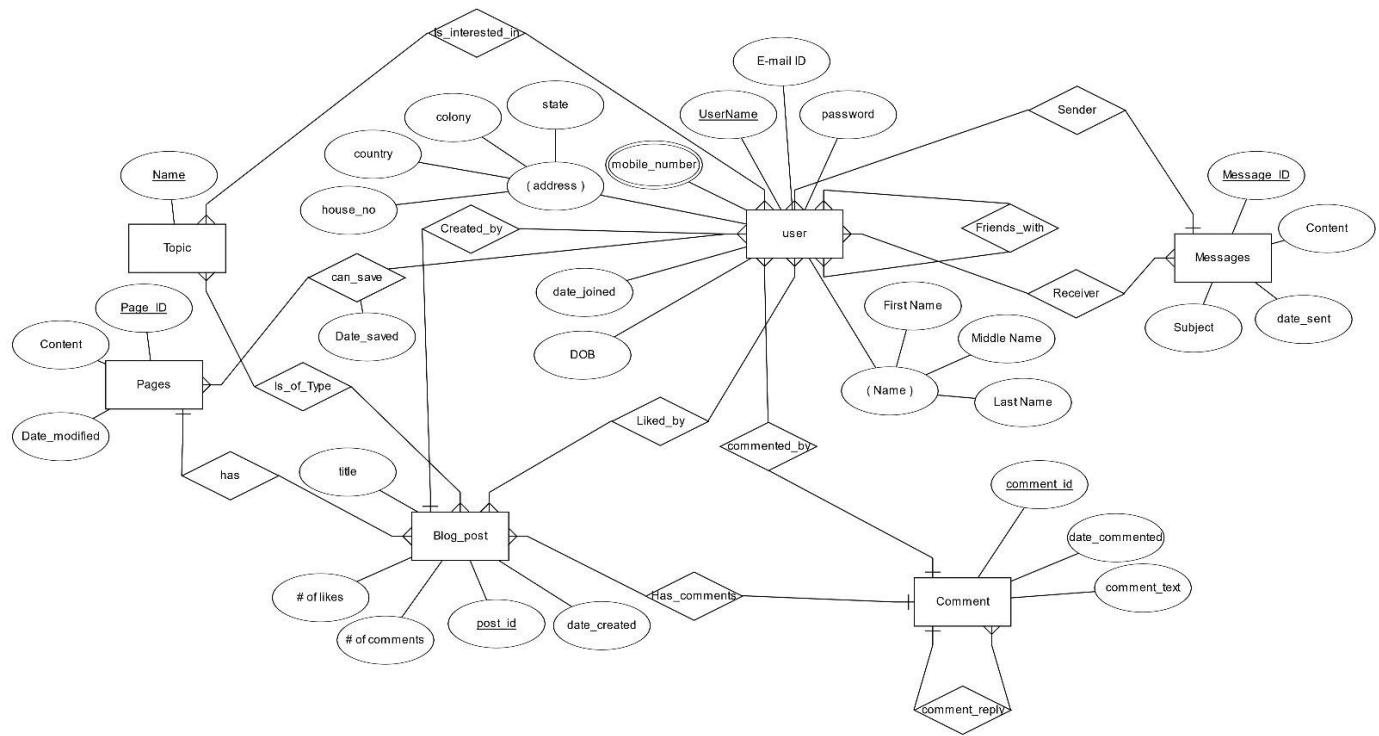


- As this is a many to many relationship we need a separate relation for **can_save** relationship.

Assumptions taken while making the ER Model:

- A *user_* has different attributes associated with it which give us personal details of the user such as **username**, **address**, etc.
- A *user_* can send **messages** to one or more than one *user_*.
- A *user_* can have **friends**.
- A *user_* can post a **blog post** with some **title** related to one or more **topics**.
- A *user_* can **save** his/her favourite **pages** of a blog post so that he/she can access it in the future when required.
- A *user_, is_interested_in* different **topics** according to which he gets recommendation of **blog posts**.
- A **blog post** has many pages that consist of **content** about the **topic**.
- A **blog post** has one or more **topics** associated with it.
- A **blog post** can be **liked by** a *user_*
- A **blog post** can have a **comment_** posted by *user_*
- A **comment_** can also have a **reply**
- By default **number of comments** and **number of likes** are set to 0, in **blog_post**.

ER-Diagram:



Normalisation applied to ER Model:

USER_:

- To store multiple values of **mobile** attribute, we make separate tuples which brings our relation into **1 NF**.
 - $\{username, mobile\} \rightarrow \{emailid, password, firstname, lastname, middlename, DOB, date_joined, hno, colony, pincode, state, country\}$,
 - $\{username\} \rightarrow \{emailid, password, firstname, lastname, middlename, DOB, date_joined, hno, colony, pincode, state, country\}$
- Here we have a partial dependency so we need to split the above relation into two relations $\rightarrow (\textit{user}, \textit{user_mobile})$
- Separate ***user_mobile*** relation was made, making it into **2NF**.
- **City,State and Country** of each user can be determined by the **pincode**, So to reduce the repeating/redundant values in the user table ,it was decomposed into another relation ***area*** with primary key **pincode**.
 - $\{username\} \rightarrow \{emailid, password, firstname, lastname, middlename, DOB, date_joined, hno, colony, pincode\}$
 - $\{pincode\} \rightarrow \{country, state\}$
- **FDs:**
 - $\{username\} \rightarrow \{emailid, password, firstname, lastname, middlename, DOB, date_joined, hno, colony, pincode\}$
 - ***username*** determines each record uniquely, therefore ***username* is the primary key of *user***
 - $\{pincode\} \rightarrow \{state, country\}$
 - ***pincode*** determines each record uniquely, therefore ***pincode* is the primary key of *area***
 - ***username, mobile*** both uniquely determine each record hence the **combination of username and mobile acts as the primary key for *user_mobile***
- The relation ***user*** is in **BCNF**.
- The relation ***user_mobile*** is in **BCNF**.
- The relation ***area*** is in **BCNF**.

FRIENDS_WITH:

- $\{\text{user1_username}, \text{user2_username}\}$ both uniquely determine each record hence the **combination of user1_username, user2_username acts as the primary key for friends_with.**
- The relation **friends_with** is in BCNF.

BLOG_POST:

- **FD:**
 - $\{\text{postid}\} \rightarrow \{\text{title}, \text{num_likes}, \text{num_comments}, \text{date_created}, \text{username}\}$
 - $\{\text{postid}\}$ uniquely determine each record, hence the **postid acts as the primary key for blog_post.**
- The relation **blog_post** is in BCNF.

PAGE:

- **FD:**
 - $\{\text{pageid}\} \rightarrow \{\text{content}, \text{date_modified}, \text{postid}\}$
 - $\{\text{pageid}\}$ uniquely determine each record hence the **pageid acts as the primary key for page.**
- The relation **page** is in BCNF.

LIKED_BY:

- Both $\{\text{postid}, \text{username}\}$ uniquely determine each record hence **{postid,username} acts as the primary key for liked_by.**
- The relation **liked_by** is in BCNF.

COMMENT_:

- **FD:**
 - $\{\text{commentid}\} \rightarrow \{\text{comment_text}, \text{date_commented}, \text{username}\}$
 - $\{\text{commentid}\}$ uniquely determine each record hence the **commentid acts as the primary key for comment_.**
- The relation **comment_** is in BCNF.

MESSAGES:

- **FD:**
 - $\{ \text{messageid} \} \rightarrow \{ \text{subject}, \text{content}, \text{sender_username}, \text{date_sent} \}$
 - $\{ \text{messageid} \}$ uniquely determine each record hence the **messageid acts as the primary key for messages.**
- The relation **messages** is in BCNF.

SAVED_PAGE:

- Each user can save many pages.
- $\{ \text{pageid}, \text{username} \}$ both uniquely determine each record hence the **combination of pageid,username acts as the primary key for saved_page.**
- The relation **saved_page** is in BCNF.

HAS_COMMENTS:

- **FD:**
 - $\{ \text{commentid} \} \rightarrow \{ \text{postid} \}$
 - $\{ \text{commentid} \}$ uniquely determines each record hence **{ commentid } acts as the primary key for has_comments.**
- The relation **has_comments** is in BCNF.

COMMENT_REPLY:

- $\{ \text{reply_commentid} \} \rightarrow \{ \text{parent_commentid} \}$
- $\{ \text{reply_commentid} \}$ uniquely determines each record hence **{ reply_commentid } acts as the primary key for comment_reply.**
- The relation **comment_reply** is in BCNF

RECIEVER:

- $\{ \text{message_id}, \text{receiver_username} \}$ both uniquely determine each record hence the combination of **message_id, receiver_username acts as the primary key for receiver.**
- The relation **receiver** is in BCNF.

TOPIC:

- As **topic_name** is the only attribute, **topic_name acts as the primary key for topic.**
- The relation **topic** is in **BCNF**.

Is_of_type:

- {**post_id, username**} both uniquely determine each record hence the combination of **post_id, username acts as the primary key for is_of_type.**
- The relation **is_of_type** is in **BCNF**.

Is_interested_in:

- {**topic_name, username**} both uniquely determine each record hence the combination of **topic_name, username acts as the primary key for is_interested_in.**
- The relation **is_interested_in** is in **BCNF**.

Tables:

(creation)

```
create table area(
    pincode int not null primary key,
    state varchar2(20),
    country varchar2(20)
);

create table user_(
    username varchar2(20) not null primary key,
    emailid varchar2(30),
    password varchar2(20),
    firstname varchar2(20),
    middlename varchar2(20),
    lastname varchar2(20),
    DOB date,
    date_joined date,
    hno varchar2(20),
    colony varchar2(20),
    pincode int,
    foreign key (pincode) references area(pincode)
);

create table user_mobile(
    username varchar2(20),
    mobile int,
    primary key (username, mobile),
    foreign key (username) references user_(username)
);

create table friends_with(
    user1_username varchar2(20),
    user2_username varchar2(20),
    primary key (user1_username, user2_username),
    foreign key (user1_username) references user_(username),
    foreign key (user2_username) references user_(username)
);

create table blog_post(
    postid int,
    username varchar2(20),
    title varchar2(20),
    num_likes int default 0,
    num_comments int default 0,
    date_created date,
    primary key (postid),
    foreign key (username) references user_(username)
);

create table Page(
    pageid int,
    postid int,
    content varchar2(50),
    date_modified date,
    primary key (pageid),
    foreign key (postid) references blog_post(postid)
);

create table saved_page(
    username varchar2(20),
    pageid int,
```

```

primary key (username,pageid),
foreign key (username) references user_(username),
foreign key (pageid) references page(pageid)
);

create table liked_by(
    postid int,
    username varchar2(20),
    primary key (postid,username),
    foreign key (postid) references blog_post(postid),
    foreign key (username) references user_(username)
);

create table comment_(
    commentid int,
    username varchar2(20),
    date_commented date,
    comment_text varchar2(50),
    primary key (commentid),
    foreign key (username) references user_(username)
);

create table has_comments(
    postid int,
    commentid int,
    primary key(commentid),
    foreign key (postid) references blog_post(postid),
    foreign key (commentid) references comment_(commentid)
);

create table comment_reply(
    parent_commentid int,
    reply_commentid int,
    primary key (reply_commentid),
    foreign key (parent_commentid) references comment_(commentid),
    foreign key (reply_commentid) references comment_(commentid)
);

create table messages(
    message_ID number,
    sender_username varchar2(20),
    subject varchar2(100),
    content varchar2(200),
    date_sent date,
    primary key (message_ID),
    foreign key (sender_username) references user_(username)
);

create table receiver
(
    receiver_username varchar2(20),
    message_ID number,
    primary key (message_ID, receiver_username),
    foreign key (receiver_username) references user_(username),
    foreign key (message_ID) references messages(message_ID)
);

create table topic(
    topic_name varchar2(20) primary key
);

```

Sample Data insertion

```
insert into area (pincode,state,country) values(583111,'Karnataka','India');
insert into area (pincode,state,country) values(533406,'Andhra Pradesh','India');
insert into area (pincode,state,country) values(799290,'Tripura','India');
insert into area (pincode,state,country) values(465679,'Madhya Pradesh','India');
insert into area (pincode,state,country) values(481996,'Madhya Pradesh','India');
insert into area (pincode,state,country) values(796470,'Mizoram','India');
insert into area (pincode,state,country) values(125050,'Haryana','India');
insert into area (pincode,state,country) values(561204,'Karnataka','India');
insert into area (pincode,state,country) values(335504,'Rajasthan','India');
insert into area (pincode,state,country) values(811102,'Bihar','India');

insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Anne','Anne@dbms.com','AC12GICBHNRX','Anne','Kristine','Ramos',to_date('21-Aug-
1995'),to_date('15-Mar-2018'),'1-2-3/4/10A','ShriNagar',125050);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Joel','Joel@dbms.com','HGMKKQVAW00UBW','Joel','Candace','Gray',to_date('6-Aug-
1995'),to_date('29-Aug-2017'),'1-5-8-7/10B','Saifabad',811102);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Derek','Derek@dbms.com','6DJFSD0E7','Derek','Josephine','Rodriquez',to_date('27
-Oct-1980'),to_date('6-Feb-2021'),'1-9-8-7/10C','Jupiter',583111);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Jimmie','Jimmie@dbms.com','MVQNO0SWG28ZK','Jimmie','Rosemary','Grant',to_date('
15-Mar-1980'),to_date('5-Dec-2016'),'4-5-7/4A','Saturn',481996);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Krystal','Krystal@dbms.com','9LRK9SBMZAV','Krystal','Stephen','Cruz',to_date('2
4-Dec-1991'),to_date('5-Aug-2020'),'7-5-6/2C','Uranus',796470);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Tammy','Tammy@dbms.com','1YJ9NCSQIX','Tammy','Reginald','Cummings',to_date('20-
Nov-1991'),to_date('6-May-2018'),'3-7-8-/5A','Mercury',561204);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Allison','Allison@dbms.com','YFAP4SCF9M0Y6','Allison','Fannie','Cross',to_date(
'26-Jan-1984'),to_date('19-Jun-2015'),'4-2-5-7/10D','Earth',335504);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Andres','Andres@dbms.com','GKJRZZJ1','Andres','Suzanne','George',to_date('13-
Jan-1980'),to_date('2-May-2018'),'7-2-8-6-1/10A','Mars',533406);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Lynn','Lynn@dbms.com','5CAKZ5VOSX91312M','Lynn','Raymond','Holloway',to_date('3
0-Sep-1992'),to_date('4-May-2020'),'8-5-4/9A','Moon',465679);
insert into user_
(username,emailid,password,firstname,middlename,lastname,DOB,date_joined,hno,colony,pin
code)
values('Roy','Roy@dbms.com','8JDFU27JHOMBXTBY','Roy','Katherine','Bryant',to_date('7-
Apr-1995'),to date('25-Dec-2020'),'9-3-4/6E','Sun',799290);
```

```

insert into user_mobile (username,mobile) values ('Tammy',5661930181);
insert into user_mobile (username,mobile) values ('Krystal',2631916006);
insert into user_mobile (username,mobile) values ('Lynn',8672548883);
insert into user_mobile (username,mobile) values ('Anne',4374653704);
insert into user_mobile (username,mobile) values ('Joel',4590903440);
insert into user_mobile (username,mobile) values ('Derek',2593173617);
insert into user_mobile (username,mobile) values ('Allison',1893578956);
insert into user_mobile (username,mobile) values ('Andres',9036729414);
insert into user_mobile (username,mobile) values ('Roy',9257402792);
insert into user_mobile (username,mobile) values ('Jimmie',5333869307);

insert into friends_with (user1_username,user2_username) values ('Derek','Jimmie');
insert into friends_with (user1_username,user2_username) values ('Jimmie','Andres');
insert into friends_with (user1_username,user2_username) values ('Tammy','Tammy');
insert into friends_with (user1_username,user2_username) values ('Krystal','Roy');
insert into friends_with (user1_username,user2_username) values ('Allison','Allison');
insert into friends_with (user1_username,user2_username) values ('Joel','Derek');
insert into friends_with (user1_username,user2_username) values ('Lynn','Joel');
insert into friends_with (user1_username,user2_username) values ('Roy','Lynn');
insert into friends_with (user1_username,user2_username) values ('Anne','Krystal');
insert into friends_with (user1_username,user2_username) values ('Andres','Anne');

insert into blog_post (postid,username,title,date_created) values (3000,'Anne','Blog title 1',to_date('2-Mar-2020'));
insert into blog_post (postid,username,title,date_created) values (3001,'Joel','Blog title 2',to_date('12-Apr-2016'));
insert into blog_post (postid,username,title,date_created) values (3002,'Krystal','Blog title 3',to_date('4-Jun-2017'));
insert into blog_post (postid,username,title,date_created) values (3003,'Allison','Blog title 4',to_date('16-Sep-2020'));
insert into blog_post (postid,username,title,date_created) values (3004,'Tammy','Blog title 5',to_date('24-Sep-2017'));
insert into blog_post (postid,username,title,date_created) values (3005,'Lynn','Blog title 1',to_date('27-Feb-2021'));
insert into blog_post (postid,username,title,date_created) values (3006,'Jimmie','Blog title 2',to_date('17-Feb-2017'));
insert into blog_post (postid,username,title,date_created) values (3007,'Derek','Blog title 3',to_date('7-Jul-2018'));
insert into blog_post (postid,username,title,date_created) values (3008,'Andres','Blog title 4',to_date('12-Nov-2015'));
insert into blog_post (postid,username,title,date_created) values (3009,'Roy','Blog title 5',to_date('4-Dec-2019'));

insert into Page (pageid,postid,content,date_modified) values (2000,3001,'This is test pagecontent1',to_date('28-Dec-2015'));
insert into Page (pageid,postid,content,date_modified) values (2001,3004,'This is test pagecontent2',to_date('26-Jul-2020'));
insert into Page (pageid,postid,content,date_modified) values (2002,3008,'This is test pagecontent3',to_date('5-Sep-2021'));
insert into Page (pageid,postid,content,date_modified) values (2003,3009,'This is test pagecontent4',to_date('24-Jun-2019'));
insert into Page (pageid,postid,content,date_modified) values (2004,3003,'This is test pagecontent5',to_date('26-Feb-2017'));
insert into Page (pageid,postid,content,date_modified) values (2005,3007,'This is test pagecontent1',to_date('22-Oct-2015'));
insert into Page (pageid,postid,content,date_modified) values (2006,3000,'This is test pagecontent2',to_date('28-Apr-2017'));
insert into Page (pageid,postid,content,date_modified) values (2007,3006,'This is test pagecontent3',to_date('23-Dec-2016'));
insert into Page (pageid,postid,content,date_modified) values (2008,3005,'This is test pagecontent4',to_date('5-Aug-2021'));
insert into Page (pageid,postid,content,date_modified) values (2009,3002,'This is test

```

```

pagecontent5',to_date('30-Dec-2015'));

insert into saved_page (username,pageid) values('Jimmie',2009);
insert into saved_page (username,pageid) values('Andres',2003);
insert into saved_page (username,pageid) values('Joel',2004);
insert into saved_page (username,pageid) values('Allison',2008);
insert into saved_page (username,pageid) values('Tammy',2002);
insert into saved_page (username,pageid) values('Lynn',2006);
insert into saved_page (username,pageid) values('Anne',2005);
insert into saved_page (username,pageid) values('Krystal',2001);
insert into saved_page (username,pageid) values('Derek',2000);
insert into saved_page (username,pageid) values('Roy',2007);

insert into liked_by (postid,username) values(3005,'Tammy');
insert into liked_by (postid,username) values(3007,'Andres');
insert into liked_by (postid,username) values(3002,'Anne');
insert into liked_by (postid,username) values(3006,'Derek');
insert into liked_by (postid,username) values(3008,'Lynn');
insert into liked_by (postid,username) values(3003,'Jimmie');
insert into liked_by (postid,username) values(3001,'Krystal');
insert into liked_by (postid,username) values(3009,'Roy');
insert into liked_by (postid,username) values(3004,'Allison');
insert into liked_by (postid,username) values(3000,'Joel');

insert into comment_ (commentid,username,date_commented,comment_text)
values(5000,'Joel',to_date('8-May-2020'),'This is comment text 1');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5001,'Derek',to_date('23-May-2021'),'This is comment text 2');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5002,'Tammy',to_date('23-Sep-2019'),'This is comment text 3');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5003,'Jimmie',to_date('16-Apr-2016'),'This is comment text 4');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5004,'Allison',to_date('23-Nov-2017'),'This is comment text 5');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5005,'Anne',to_date('15-Mar-2016'),'This is comment text 6');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5006,'Andres',to_date('12-Nov-2017'),'This is comment text 7');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5007,'Roy',to_date('17-Mar-2017'),'This is comment text 8');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5008,'Krystal',to_date('12-Sep-2019'),'This is comment text 9');
insert into comment_ (commentid,username,date_commented,comment_text)
values(5009,'Lynn',to_date('30-Nov-2018'),'This is comment text 10');

insert into has_comments (postid,commentid) values(3006,5002);
insert into has_comments (postid,commentid) values(3002,5001);
insert into has_comments (postid,commentid) values(3009,5003);
insert into has_comments (postid,commentid) values(3004,5004);
insert into has_comments (postid,commentid) values(3005,5000);

insert into comment_reply (parent_commentid,reply_commentid) values(5002,5005);
insert into comment_reply (parent_commentid,reply_commentid) values(5004,5006);
insert into comment_reply (parent_commentid,reply_commentid) values(5005,5008);
insert into comment_reply (parent_commentid,reply_commentid) values(5003,5009);
insert into comment_reply (parent_commentid,reply_commentid) values(5009,5007);

insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4000,'Lynn','Meet with you','This is test Message content 1',to_date('23-Aug-2016'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4001,'Jimmie','How did you do this?','This is test Message content 2');

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2',to_date('20-May-2017'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4002, 'Tammy', 'I would like to collaborate', 'This is test Message content
3',to_date('21-Mar-2017'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4003, 'Krystal', 'Wanna meet after COVID', 'This is test Message content
4',to_date('27-Oct-2016'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4004, 'Allison', 'Come to park', 'This is test Message content 5',to_date('24-Jun-
2016'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4005, 'Andres', 'Meet with you', 'This is test Message content 1',to_date('23-Aug-
2016'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4006, 'Derek', 'How did you do this?', 'This is test Message content
2',to_date('20-May-2017'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4007, 'Anne', 'I would like to collaborate', 'This is test Message content
3',to_date('21-Mar-2017'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4008, 'Joel', 'Wanna meet after COVID', 'This is test Message content
4',to_date('27-Oct-2016'));
insert into messages (message_ID, sender_username, subject, content, date_sent)
values(4009, 'Roy', 'Come to park', 'This is test Message content 5',to_date('24-Jun-
2016'));

insert into receiver (receiver_username, message_ID) values ('Tammy', 4005);
insert into receiver (receiver_username, message_ID) values ('Jimmie', 4009);
insert into receiver (receiver_username, message_ID) values ('Derek', 4008);
insert into receiver (receiver_username, message_ID) values ('Allison', 4007);
insert into receiver (receiver_username, message_ID) values ('Joel', 4004);
insert into receiver (receiver_username, message_ID) values ('Krystal', 4001);
insert into receiver (receiver_username, message_ID) values ('Andres', 4006);
insert into receiver (receiver_username, message_ID) values ('Roy', 4002);
insert into receiver (receiver_username, message_ID) values ('Anne', 4000);
insert into receiver (receiver_username, message_ID) values ('Lynn', 4003);

insert into topic (topic_name) values ('Technology');
insert into topic (topic_name) values ('Science');
insert into topic (topic_name) values ('Education');
insert into topic (topic_name) values ('Music');
insert into topic (topic_name) values ('Art');
insert into topic (topic_name) values ('Creative Writing');
insert into topic (topic_name) values ('Astronomy');
insert into topic (topic_name) values ('Photography');
insert into topic (topic_name) values ('Video Editing');
insert into topic (topic_name) values ('Programming');

insert into is_of_type (postid,topic_name) values (3005, 'Science');
insert into is_of_type (postid,topic_name) values (3009, 'Video Editing');
insert into is_of_type (postid,topic_name) values (3004, 'Music');
insert into is_of_type (postid,topic_name) values (3008, 'Astronomy');
insert into is_of_type (postid,topic_name) values (3001, 'Photography');
insert into is_of_type (postid,topic_name) values (3006, 'Creative Writing');
insert into is_of_type (postid,topic_name) values (3002, 'Programming');
insert into is_of_type (postid,topic_name) values (3007, 'Education');
insert into is_of_type (postid,topic_name) values (3000, 'Art');
insert into is_of_type (postid,topic_name) values (3003, 'Technology');

insert into is_interested_in (username,topic_name) values ('Roy', 'Photography');
insert into is_interested_in (username,topic_name) values ('Allison', 'Education');
insert into is_interested_in (username,topic_name) values ('Andres', 'Astronomy');

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insert into is_interested_in (username,topic_name) values ('Jimmie','Video Editing');
insert into is_interested_in (username,topic_name) values ('Anne','Programming');
insert into is_interested_in (username,topic_name) values ('Krystal','Art');
insert into is_interested_in (username,topic_name) values ('Tammy','Technology');
insert into is_interested_in (username,topic_name) values ('Derek','Music');
insert into is_interested_in (username,topic_name) values ('Lynn','Creative Writing');
insert into is_interested_in (username,topic_name) values ('Joel','Science');
```