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Project 2

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Project

For our project, we are creating a database for a back end to a social media application based off the popular platform “Twitter”. The database will store information on several things, including the users, followers, tweets, favorites, reposts, and reports. If any of this information changes, the database will also be able to update the information.

Planning

The very first thing we need to do is plan out our database design. It is important we create it efficiently from the ground up so that all the parts of the database work properly without having to go back and change much when implementing new functionalities. Our plan is to create a table to handle user information, followers, tweets, and favorites. The creatinging queries to find out any information that the app may need based on this data. Such as how many followers a user has, or how many favorites on a tweet.

Creation

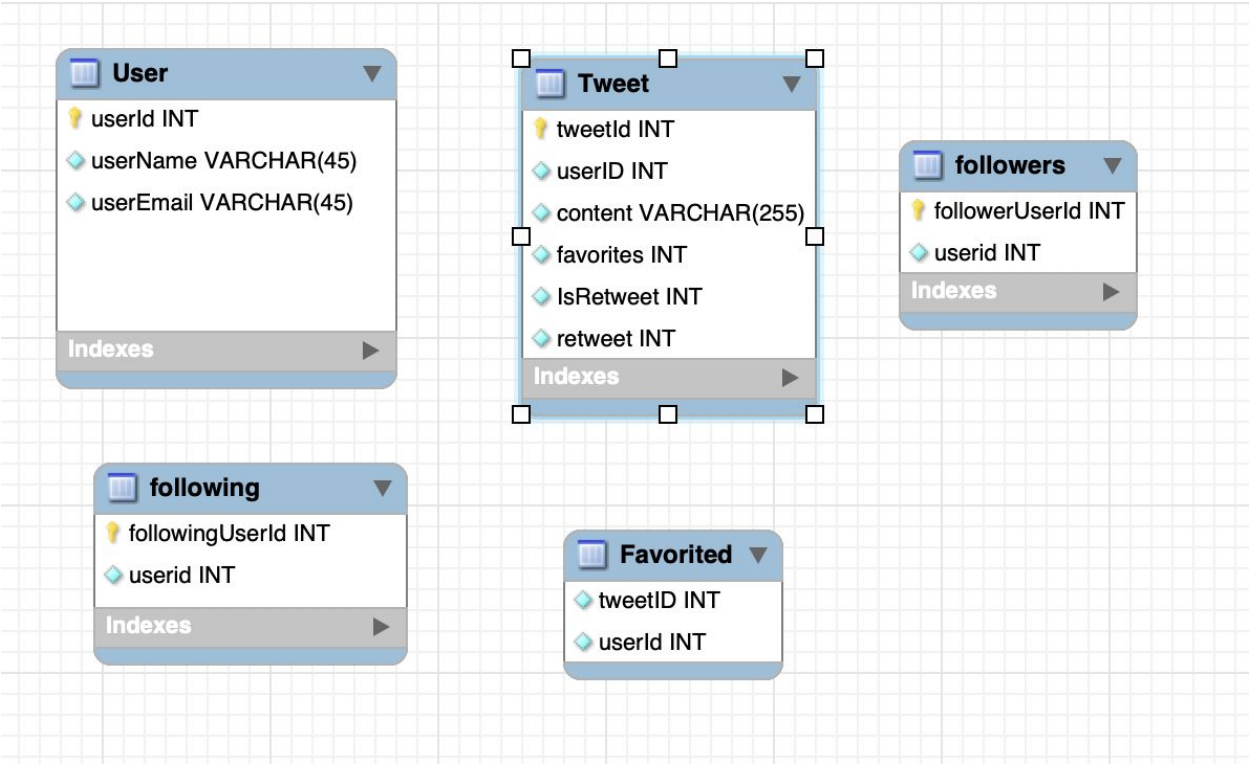
To create the database, we will write it using sql in the “workbench” ide. To do this, we first create a diagram of all the tables, and all the columns in those tables. Once we’ve done this, we forward engineer the diagram to create a working database. After a little bit of touching up,

we have a database but no data. In order to test our database, we have to have users. So we populate the database with fake users, all of which have followers, retweets and favorited tweets. We are then able to create queries to retrieve or change any information we need.

Design

The design of the database is that we have a spot to hold all the data, then anything a user can do would cause a query to happen. So when a user likes a post, it activates a query that will change the amount of likes on the post. The database can even handle displaying information. If a user wants to view their followers, the database will look for all users following a specific user then display those users. By designing the database like this, it should be dynamic and change based on user input.

Diagram



Queries

```sql
-- Display favorites
select user.username, tweet.tweetid, tweet.content, tweet.favorites
from tweet, user
where user.userid = tweet.userid;

-- Display retweets
select user.username, tweet.tweetid, tweet.content, tweet.retweet
from tweet, user
where user.userid = tweet.userid;

-- Display user follower count
select user.username, count(followers.followeruserid) as `followers`
from followers, user
where user.userid = followers.userid
group by user.username;

-- How many users one is following
select user.username, count(followers.userid) as `following` from
followers, user
where user.userid = followers.followerUserId
group by user.username;
-- view users 1's timeline
select (select userName from user where userId = A.userID) as 'User
Name',
           content as 'Tweet',
        if(IsRetweet>0, (select (select userName from user where
userId = B.userID) as 'User Name'
                                  from tweet as B where content =
"How do I change my user name?"
                           and not userID = 2), "") as 'Retweet From',
        favorites as 'Number of favorites',
        retweet as 'Number of Retweets'
from tweet as A
where userID in (select userid from followers where followerUserId =
1)
order by tweetId;

-- Delete Tweet
```

```
delete from tweet where tweetId = 16;
select (select userName from user where userId = A.userID) as 'User
Name',
           content as 'Tweet',
        if(IsRetweet>0, (select (select userName from user where
userId = B.userID) as 'User Name'
                                  from tweet as B where content =
"How do I change my user name?"
                           and not userID = 2), "") as 'Retweet From',
        favorites as 'Number of favorites',
        retweet as 'Number of Retweets'
from tweet as A
where userID in (select userid from followers where followerUserId =
1)
order by tweetId;

-- see user 3's favorited tweets
select (select userName from user where userId = A.userID) as 'User
Name',
           content as 'Tweet',
        if(IsRetweet>0, (select (select userName from user where
userId = B.userID) as 'User Name'
                                  from tweet as B where content =
"How do I change my user name?"
                           and not userID = 2), "") as 'Retweet From',
        favorites as 'Number of favorites',
        retweet as 'Number of Retweets'
from tweet as A
where tweetId in (select tweetID from favorited where userId = 3)
order by tweetId;

-- see who is following user 4
select (select userName from user where userId = A.followerUserId) as
'Niña\'s Followers'
from followers as A
where userid=4;

-- see who user 4 follows
```

```sql
select (select userName from user where userId = A.userid) as 'Niña
is Following'
from followers as A
where followerUserId=4;
```