In this SQL project, I simulate what goes on in the database when various actions are carried out by developers and app users. I use a very simple and easy to understand fictitious app called **Digital Diary**.

I start off by creating a database to house the tables holding the data in a structure.

```
1 •  CREATE DATABASE day8;
2 •  USE day8;
3
```

I then created the first table of the database – a user table which stores all users that sign onto app and create a profile. The users' table assigns a unique primary key to every user and captures their username, password,location and user_score. For the purpose of this project, I populate the table with arbitrary records.

```
/** creating users table **/
CREATE TABLE diary_users(
id INTEGER PRIMARY KEY AUTO_INCREMENT,
user_name TEXT,
password VARCHAR(255),
location TEXT,
signup_date TEXT,
user_score VARCHAR(255)
);

INSERT INTO diary_users(user_name,password, location, signup_date,user_score)
VALUES
('Ama65', '*************' ,'Accra,Ghana', '01-11-2023', 0.5),
('Jackson Maladin', '*************' , 'New York,USA', '31-12-2023', 0.2),
('Beatrice Da Fan Girl', '*************' , 'London,England', '01-01-2024', 0.4),
('Martinfunnygyy', '*************' , 'Nairobi,Kenya', '15-01-2024', 0.1)
;
```

Next, I create a table that records the diary entries made into the app by users, making sure to link each diary entry with the user making the entry through the user_id. Once again, this table is populated by arbitrary entries.

```sql
/**creating data entry table**/
CREATE TABLE digital_diary(
id INTEGER PRIMARY KEY AUTO_INCREMENT,
date TEXT,
time TEXT,
location TEXT,
user_id INTEGER,
title TEXT,
entry VARCHARACTER(255),
main_character TEXT)
;
INSERT INTO digital_diary(date,time,location,user_id,title,entry,main_character)
VALUES
('01-02-2024', '11:00' , 'Accra,Ghana', 1, 'Today is a great day', 'I got into blossom fellowship today. Yeeey!','Ama'),
('01-02-2024', '13:00' , 'New York,USA', 2, 'Heartbreak Hurts', 'Lauren and I broke up today','Jackson'),
('02-02-2024', '00:15' , 'London,England', 3, 'I love baked beans', 'I ate my beans diffrently today. Yummmmm','Beatrice'),
('12-02-2024', '9:00' , 'Accra,Ghana', 1, 'Power BI', 'Power BI is starting out a bit rough but we would see.','Ama'),
('20-02-2024', '18:00' , 'London England', 3, 'High School Sucks', 'I wonder how I can do revenge on my bullies','Beatrice')
;
```

I query the tables to see how they are looking and confirm that they look how I meant them to look.

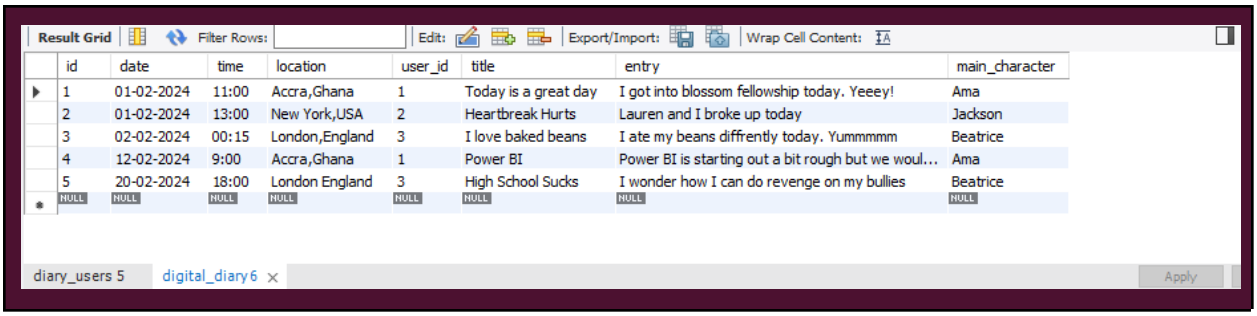
```sql
#querying tables
SELECT * FROM digital_diary;
SELECT * FROM diary_users;
```

Users' table

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

id	user_name	password	location	signup_date	user_score
1	Ama65	**********	Accra,Ghana	01-11-2023	0.5
2	Jackson Maladin	**********	New York,USA	31-12-2023	0.2
3	Beatrice Da Fan Girl	**********	London,England	01-01-2024	0.4
4	Martinfunnygyy	**********	Nairobi,Kenya	15-01-2024	0.1
NULL	NULL	NULL	NULL	NULL	NULL

Diary entries

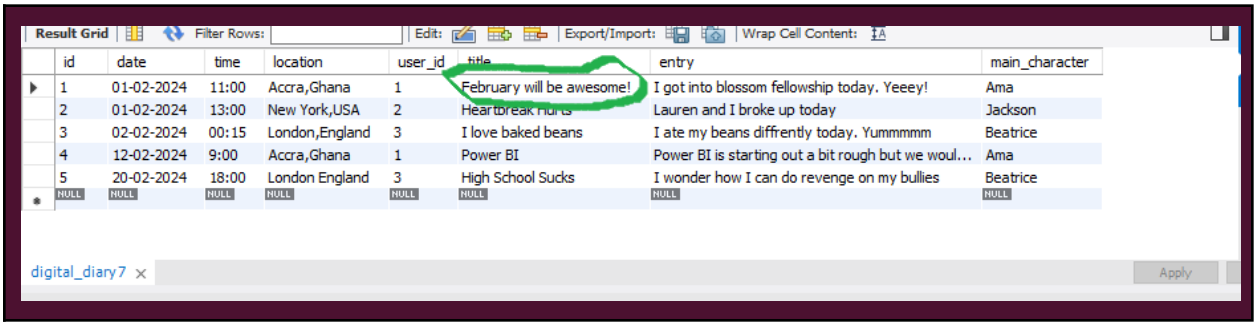


id	date	time	location	user_id	title	entry	main_character
1	01-02-2024	11:00	Accra,Ghana	1	Today is a great day	I got into blossom fellowship today. Yeeey!	Ama
2	01-02-2024	13:00	New York,USA	2	Heartbreak Hurts	Lauren and I broke up today	Jackson
3	02-02-2024	00:15	London,England	3	I love baked beans	I ate my beans diffrently today. Yummmmm	Beatrice
4	12-02-2024	9:00	Accra,Ghana	1	Power BI	Power BI is starting out a bit rough but we woul...	Ama
5	20-02-2024	18:00	London England	3	High School Sucks	I wonder how I can do revenge on my bullies	Beatrice

What happens when a user updates their title, entry or main_character ?

```sql
/**Ama updated the title of one of her records**/
UPDATE digital_diary
SET title = 'February will be awesome!'
WHERE id = 1
AND date = '01-02-2024';
```

The change is made on the diary entry table which then reflects in the up.

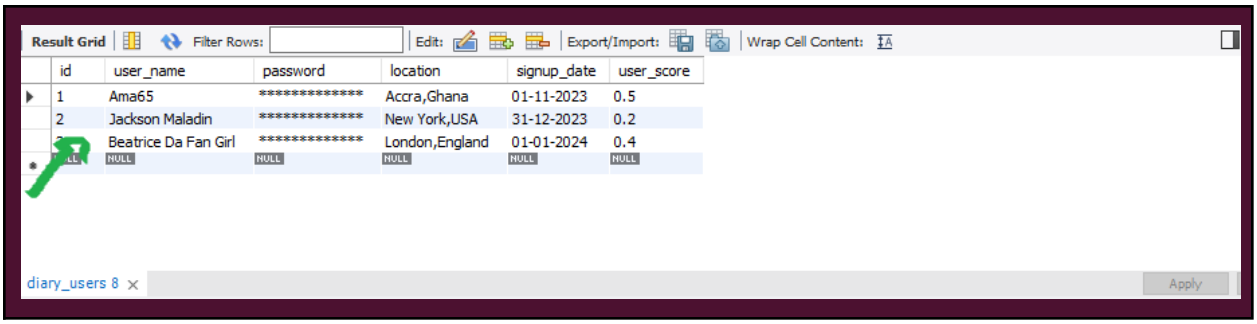


id	date	time	location	user_id	title	entry	main_character
1	01-02-2024	11:00	Accra,Ghana	1	February will be awesome!	I got into blossom fellowship today. Yeeey!	Ama
2	01-02-2024	13:00	New York,USA	2	Heartbreak Hurts	Lauren and I broke up today	Jackson
3	02-02-2024	00:15	London,England	3	I love baked beans	I ate my beans diffrently today. Yummmmm	Beatrice
4	12-02-2024	9:00	Accra,Ghana	1	Power BI	Power BI is starting out a bit rough but we woul...	Ama
5	20-02-2024	18:00	London England	3	High School Sucks	I wonder how I can do revenge on my bullies	Beatrice

What happens in the database when a user deletes their account ?

```sql
/** Martin wants to free up space on his phone so deletes his account on this
    unused app when deleting the app on his phone
**/
DELETE FROM diary_users
WHERE id = 4;
```

The user's account details are completely removed from the diary_users table. The number of users reduces by 1 user.

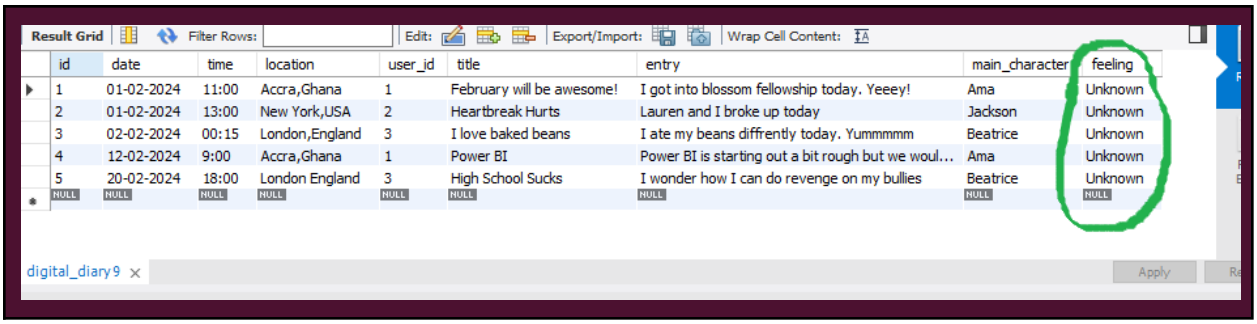


id	user_name	password	location	signup_date	user_score
1	Ama65	**********	Accra,Ghana	01-11-2023	0.5
2	Jackson Maladin	**********	New York,USA	31-12-2023	0.2
3	Beatrice Da Fan Girl	**********	London,England	01-01-2024	0.4
NULL	NULL	NULL	NULL	NULL	NULL

What happens when an app update is made to improve user experience?

```sql
/** the app developers decide to add a feelings entry in the app**/
ALTER TABLE digital_diary
ADD feeling VARCHAR(255) default "Unknown";
```

I updated the app to include a “feelings” segment where users can input their feelings.The default is set to ‘Unknown’ so that previous entries and entries that do not include feelings are stored as the default value in the table.

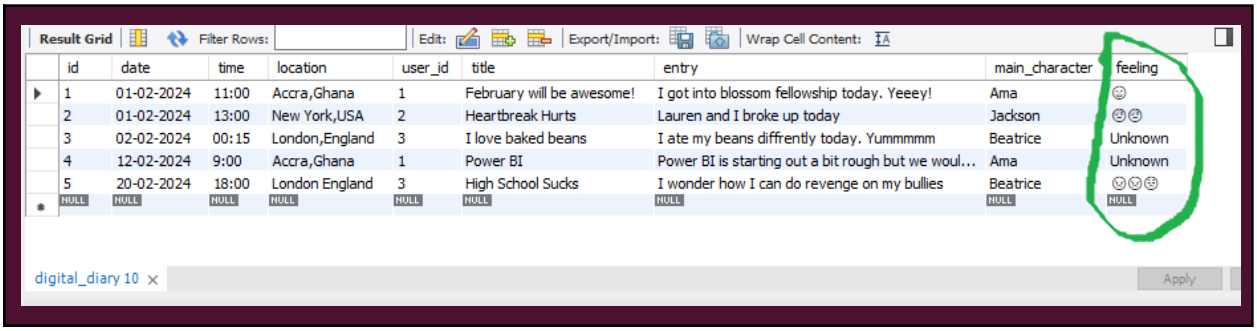


id	date	time	location	user_id	title	entry	main_character	feeling
1	01-02-2024	11:00	Accra,Ghana	1	February will be awesome!	I got into blossom fellowship today. Yeeey!	Ama	Unknown
2	01-02-2024	13:00	New York,USA	2	Heartbreak Hurts	Lauren and I broke up today	Jackson	Unknown
3	02-02-2024	00:15	London,England	3	I love baked beans	I ate my beans diffrently today. Yummmmm	Beatrice	Unknown
4	12-02-2024	9:00	Accra,Ghana	1	Power BI	Power BI is starting out a bit rough but we woul...	Ama	Unknown
5	20-02-2024	18:00	London England	3	High School Sucks	I wonder how I can do revenge on my bullies	Beatrice	Unknown
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Now some of the users, seeing the update, opt to revisit previous entries and input their feelings in the designated segment.

```sql
/** after adding the feelings entry in the app, the developers give users the option to add feelings when revisiting
    a diary entry
**/
UPDATE digital_diary SET feeling = '😊' WHERE id = 1 AND date = '01-02-2024';
UPDATE digital_diary SET feeling = '🥹🥹' WHERE id = 2 AND date = '01-02-2024';
UPDATE digital_diary SET feeling = '😡😡😒' WHERE id = 5 AND date = '20-02-2024';
```

Naturally, the change is reflected in the diary entry table.

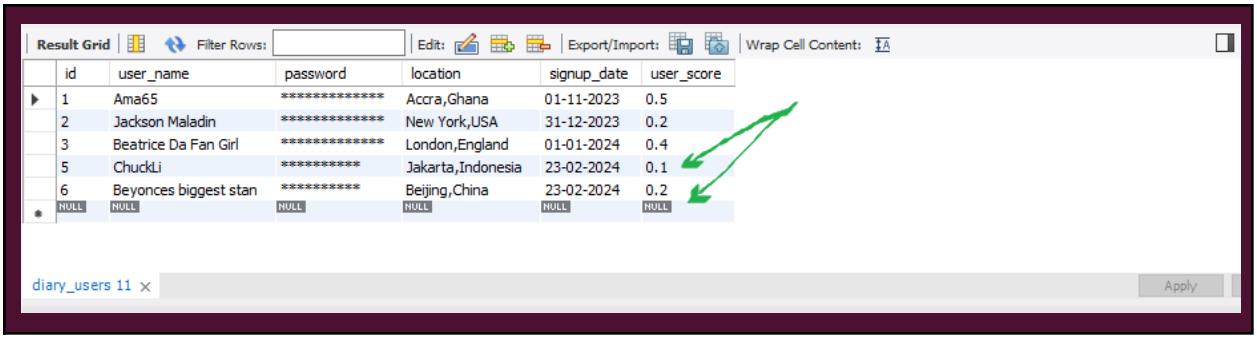


id	date	time	location	user_id	title	entry	main_character	feeling
1	01-02-2024	11:00	Accra,Ghana	1	February will be awesome!	I got into blossom fellowship today. Yeeey!	Ama	😊
2	01-02-2024	13:00	New York,USA	2	Heartbreak Hurts	Lauren and I broke up today	Jackson	😢😢
3	02-02-2024	00:15	London,England	3	I love baked beans	I ate my beans diffrently today. Yummmmm	Beatrice	Unknown
4	12-02-2024	9:00	Accra,Ghana	1	Power BI	Power BI is starting out a bit rough but we woul...	Ama	Unknown
5	20-02-2024	18:00	London England	3	High School Sucks	I wonder how I can do revenge on my bullies	Beatrice	😠😠😠
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

What happens in the database when new users get on the app ie. create accounts

```
/** On 23/02/2024, 2 new people created an acount on the app**/
INSERT INTO diary_users(user_name, password, location, signup_date,user_score)
VALUES
    ('ChuckLi', '**********','Jakarta,Indonesia', '23-02-2024', 0.1),
    ('Beyonces biggest stan', '**********','Beijing,China', '23-02-2024', 0.2)
    ;
```

The new users are recorded in the diary_users table.

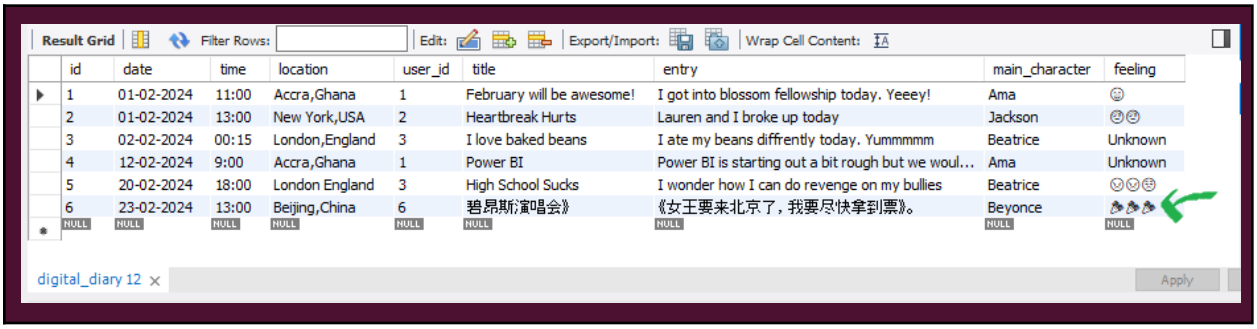


id	user_name	password	location	signup_date	user_score
1	Ama65	**********	Accra,Ghana	01-11-2023	0.5
2	Jackson Maladin	**********	New York,USA	31-12-2023	0.2
3	Beatrice Da Fan Girl	**********	London,England	01-01-2024	0.4
5	ChuckLi	**********	Jakarta,Indonesia	23-02-2024	0.1
6	Beyonces biggest stan	**********	Beijing,China	23-02-2024	0.2
NULL	NULL	NULL	NULL	NULL	NULL

Our diary_users table count increases to 6, reflecting the change. Notice that the id number ‘4’ is skipped completely. Though their user deleted his account, nobody takes on that id.

One of the new users makes their first diary entry.

```
/**One of the new users chooses to make a new diary entry today**/
INSERT INTO digital_diary(date,time,location,user_id,title,entry,main_character,feeling)
VALUES
('23-02-2024', '13:00' , 'Beijing,China', 6, '碧昂斯演唱会》', '《女王要来北京了，我要尽快拿到票》。','Beyonce','🍌🍌🍌');
```



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

id	date	time	location	user_id	title	entry	main_character	feeling
1	01-02-2024	11:00	Accra,Ghana	1	February will be awesome!	I got into blossom fellowship today. Yeeey!	Ama	😀
2	01-02-2024	13:00	New York,USA	2	Heartbreak Hurts	Lauren and I broke up today	Jackson	😢😢
3	02-02-2024	00:15	London,England	3	I love baked beans	I ate my beans diffrently today. Yummmmm	Beatrice	Unknown
4	12-02-2024	9:00	Accra,Ghana	1	Power BI	Power BI is starting out a bit rough but we woul...	Ama	Unknown
5	20-02-2024	18:00	London England	3	High School Sucks	I wonder how I can do revenge on my bullies	Beatrice	😠😠😬
6	23-02-2024	13:00	Beijing,China	6	碧昂斯演唱会》	《女王要来北京了，我要尽快拿到票》。	Beyonce	🍌🍌🍌
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

digital_diary 12 | Apply

This is a pretty simple project to take on if you're new to SQL and looking to practice.