



Project

Facebook Database with Login Page

Database

<i>Name</i>	<i>ID</i>
Eyad Tamer Shehata	2103116
Malak Mahmoud Aref	20221445867
Nureen Ehab Barakat	20221465124
Nouran Mohamed Hemdan	20221321932
Zainab Mohamed Abdallah	20221310251

Faculty of Computers and Data Sciences,

Alexandria University.

May 2023

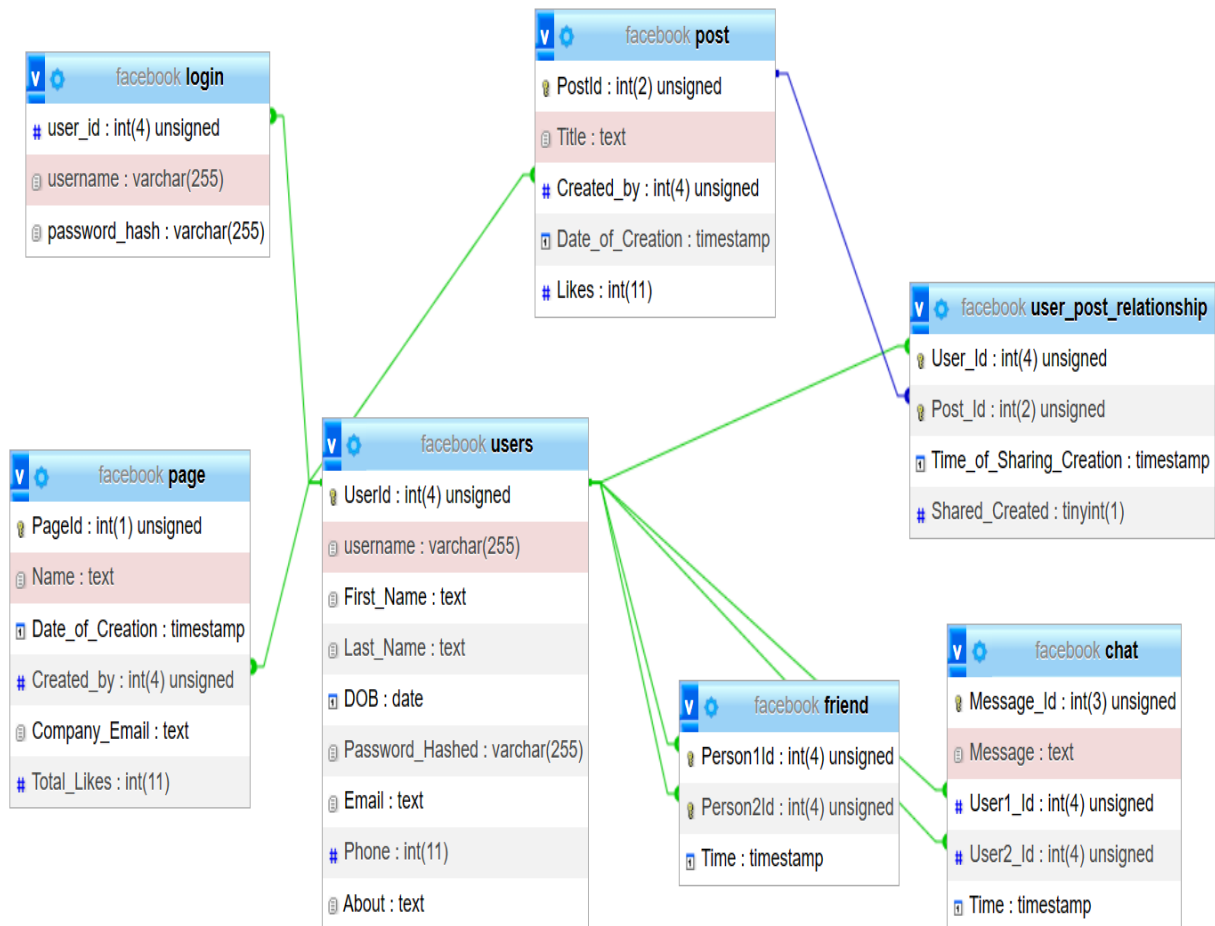
Table of Contents

Word Problem:	3
ERD	4
SQL	5
Facebook Database	5
code:	5
Users Table	5
code:	5
Insertion:	5
Output:	6
Page Table	6
code:	6
Insertion:	6
Output:	6
Post Table	7
code:	7
Insertion:	7
Output:	7
Friend Table.....	7
code:	7
Insertion:	7
Output:	7
User_Post_Relationship Table	8
code:	8
Insertion:	8
Output:	8
Chat Table.....	8
code:	8
Insertion:	8
Output:	8
Login Table.....	9
code:	9
Insertion:	9
Output:	9
Login Interface	10
Register Interface	10

Word Problem:

- A **User** is one of the most important entities in Facebook. Each user has the following attributes: User id, Username, First and Last name, Date of birth, Password, Email, Phone, and About. User can have many chats as both sender_user and receiver_user. Also, User has a login.
- A **Page** is something that is followed by many users in Facebook. Pages are responsible for sharing posts in Facebook and they should be accessible via the profile pages and their respective timeline. And has the following attributes: Page id, Name, Date of creation, Created by which is a foreign key to the USERS entity, Company email, and Total likes.
- A **Post** represents the posts made on Facebook. It has attributes such as Post id, Title, Created by which is a foreign key to the USERS entity, Date of creation, and likes. and page_id, which are foreign keys to PAGE entity.
- Facebook **Friend** is a relationship that exists between two users in Facebook. One user can have multiple friends. The relationship has the following attributes: primary key of 1st user, primary key of 2nd user which are foreign keys to the USERS entity, and Time.
- **User-Post Relationship** this entity represents the relationship between a user and a post. There are two possibilities for a post whether user shares a post or creates a post. This relationship has the following attributes: User ID, Post ID, Time of Sharing/Creation, and Shared/Created. A post can be shared by multiple users and a user can share multiple posts.
- A **Chat** entity represents the chat messages sent between users on Facebook. It has attributes such as Message id, Message, User 1, User 2, and Time.
- **Login** entity represents that each user has one login and it has the following attributes: Username, password.

ERD



SQL

Facebook Database

We created our facebook database using the following

code:

```
CREATE DATABASE Facebook;
```

Users Table

Create the users table using the following

code:

```
CREATE TABLE users(  
    UserId int(4) UNSIGNED AUTO_INCREMENT PRIMARY KEY,  
    username varchar(255),  
    First_Name text NOT NULL,  
    Last_Name text NOT NULL,  
    DOB date NOT NULL,  
    Password_Hashed varchar(255) NOT NULL,  
    Email text NOT NULL,  
    Phone int NOT NULL,  
    About text  
);
```

Note: The 'NOT NULL' means that these values must be inserted, and the 'Hashed' means that that value will be encrypted.

Insertion:

```
INSERT INTO users(username, First_Name, Last_Name, DOB, Password_Hashed, Email, Phone,  
About) VALUES ('zainab','Zainab' ,'Aly', '2003-12-13', SHA2('1234',256),  
'zainabmohamed@gmail.com', 01111157390, 'lives in Alexandria, Egypt'),('malak','Malak', 'Aref', '2003-  
05-31', SHA2('12345',256), 'malakaref@gmail.com', 01000151339, 'lives in Alexandria,  
Egypt'),('nureen','Nureen', 'Barakat', '2003-07-29', SHA2('123456',256), 'nureenbarakat@gmail.com',  
01029182991, 'lives in Alexandria, Egypt'), ('nouran','Nouran', 'Hemdan', '2003-01-21',  
SHA2('1234567',256), 'nouranhemdan@gmail.com', 01286157166, 'lives in Alexandria,  
Egypt'),('eyad','Eyad' ,'Tamer' , '2003-01-01', SHA2('12345678',256), 'eyadtamer@gmail.com',  
01111906441, 'lives in Alexandria, Egypt');
```

Output:

UserId	username	First_Name	Last_Name	DOB	Password_Hashed	Email	Phone	About
1	zainab	Zainab	Aly	2003-12-13	03ac674216f3e15c761ee1a5e255f067953623c8b388b4459e...	zainabmohamed@gmail.com	1111157390	lives in Alexandria Egypt
2	malak	Malak	Aref	2003-05-31	5994471abb01112afcc18159f6cc74b4f511b99806da59b3ca...	malakaref@gmail.com	1000151339	lives in Alexandria Egypt
3	nureen	Nureen	Barakat	2003-07-29	8d969eef6ecad3c29a3a629280e686cf0c3f5d5a86aff3ca12...	nureenbarakat@gmail.com	1029182991	lives in Alexandria Egypt
4	nouran	Nouran	Hemdan	2003-01-21	8bb0cf6eb9b17d0f7d22b456f121257dc1254e1f0166537047...	nouranhemdan@gmail.com	1286157166	lives in Alexandria Egypt
5	eyad	Eyad	Tamer	2003-01-01	ef797c8118f02dfb649607dd5d3f8c7623048c9c063d532cc9...	eyadtamer@gmail.com	1111906441	lives in Alexandria Egypt

Page Table

Create the Page table using the following

code:

```
CREATE TABLE Page(  
  PageId int(1) UNSIGNED AUTO_INCREMENT PRIMARY KEY,  
  Name text NOT NULL,  
  Date_of_Creation TIMESTAMP NOT NULL,  
  Created_by int(4) UNSIGNED,  
  Company_Email text,  
  Total_Likes int,  
  FOREIGN KEY (Created_by) REFERENCES users(UserId)  
);
```

Note: Timestamp will display the exact time the page was created, and created by is a foreign key referencing UsersId in table Users.

Insertion:

```
INSERT INTO Page(Name,Date_of_Creation,Created_by, Company_Email,Total_Likes)  
VALUES('Amazon', '2021-09-08 16:52:53',1,'amazon@gmail.com', 50000), ('Noon', '2022-03-05  
14:52:53',2,'noon@gmail.com', 40000), ('Souq', '2023-12-15 16:50:43',3,'souq@gmail.com', 300000),  
('Shein', '2019-11-15 13:52:53',4,'shein@gmail.com', 20000), ('Emma', '2022-10-15  
12:52:53',5,'emma@gmail.com', 10000);
```

Output:

PageId	Name	Date_of_Creation	Created_by	Company_Email	Total_Likes
1	Amazon	2021-09-08 16:52:53	1	amazon@gmail.com	50000
2	Noon	2022-03-05 14:52:53	2	noon@gmail.com	40000
3	Souq	2023-12-15 16:50:43	3	souq@gmail.com	300000
4	Shein	2019-11-15 13:52:53	4	shein@gmail.com	20000
5	Emma	2022-10-15 12:52:53	5	emma@gmail.com	10000

Post Table

Create the Post table using the following

code:

```
CREATE TABLE Post (  
    PostId int(2) UNSIGNED AUTO_INCREMENT PRIMARY KEY,  
    Title text NOT NULL,  
    Created_by int(4) UNSIGNED,  
    Date_of_Creation timestamp NOT NULL,  
    Likes int,  
    FOREIGN KEY (Created_by) REFERENCES users(UserId)  
);
```

Insertion:

```
INSERT INTO Post(Title, Created_by, Date_of_Creation, Likes) VALUES('post1', 1, '2023-05-19 14:52:53', 5000), ('post2', 3, '2023-05-15 16:52:53', 50000), ('post3', 5, '2023-06-15 16:52:53', 70000);
```

Output:

PostId	Title	Created_by	Date_of_Creation	Likes
1	post1	1	2023-05-19 14:52:53	5000
2	post2	3	2023-05-15 16:52:53	50000
3	post3	5	2023-06-15 16:52:53	70000

Friend Table

Create the Friend table using the following

code:

```
CREATE TABLE Friend (  
    Person1Id int(4) UNSIGNED NOT NULL,  
    Person2Id int(4) UNSIGNED NOT NULL,  
    Time timestamp NOT NULL,  
    PRIMARY KEY (Person1Id, Person2Id),  
    FOREIGN KEY (Person1Id) REFERENCES users(UserId),  
    FOREIGN KEY (Person2Id) REFERENCES users(UserId)  
);
```

Insertion:

```
INSERT INTO Friend (Person1Id, Person2Id, Time) VALUES (1,2,'2023-06-17 16:51:33'), (2,3,'2019-02-01 12:55:31'), (4,5,'2015-01-01 10:55:31')
```

Output:

Person1Id	Person2Id	Time
1	2	2023-06-17 16:51:33
2	3	2019-02-01 12:55:31
4	5	2015-01-01 10:55:31

User_Post_Relationship Table

Create the user-post-relationship table using the following

code:

```
CREATE TABLE User_Post_Relationship (  
    User_Id int(4) UNSIGNED NOT NULL,  
    Post_Id int(2) UNSIGNED NOT NULL,  
    Time_of_Sharing_Creation timestamp NOT NULL,  
    Shared_Created boolean NOT NULL,  
    PRIMARY KEY (User_Id, Post_Id),  
    FOREIGN KEY (User_Id) REFERENCES users(UserId),  
    FOREIGN KEY (Post_Id) REFERENCES Post(PostId)  
);
```

Insertion:

```
INSERT INTO User_Post_Relationship (User_Id, Post_Id, Time_of_Sharing_Creation, Shared_Created)  
VALUES(1, 2, '2023-05-19 14:52:53', TRUE), (3, 3, '2023-05-15 16:52:53', TRUE), (2,1, '2023-06-15  
16:52:53', False)
```

Output:

User_Id	Post_Id	Time_of_Sharing_Creation	Shared_Created
1	2	2023-05-19 14:52:53	1
2	1	2023-06-15 16:52:53	0
3	3	2023-05-15 16:52:53	1

Chat Table

We create our chat table using the following

code:

```
CREATE TABLE Chat (  
    Message_Id int(3) UNSIGNED AUTO_INCREMENT PRIMARY KEY,  
    Message text NOT NULL,  
    User1_Id int(4) UNSIGNED NOT NULL,  
    User2_Id int(4) UNSIGNED NOT NULL,  
    Time timestamp NOT NULL,  
    FOREIGN KEY (User1_Id) REFERENCES users(UserId),  
    FOREIGN KEY (User2_Id) REFERENCES users(UserId)  
);
```

Insertion:

```
INSERT INTO Chat(Message, User1_Id, User2_Id, Time) VALUES('Hello', 1, 2,'2020-05-09 16:31:33'),  
('How are you?', 2, 3,'2021-09-10 17:20:34'), ('Hi', 1, 3,'2018-01-16 21:20:20'), ('Call me back', 4,  
5,'2018-02-17 22:20:20')
```

Output:

Message_Id	Message	User1_Id	User2_Id	Time
1	Hello	1	2	2020-05-09 16:31:33
2	How are you?	2	3	2021-09-10 17:20:34
3	Hi	1	3	2018-01-16 21:20:20
4	Call me back	4	5	2018-02-17 22:20:20

Login Table

We create our login table using the following

code:

```
CREATE TABLE login (  
  user_id int(4) UNSIGNED NOT NULL,  
  username varchar(255) NOT NULL,  
  password_hash VARCHAR(255) NOT NULL,  
  FOREIGN KEY (user_id) REFERENCES users(UserId)  
);
```

Insertion:

```
INSERT INTO login(user_id, username, password_hash) VALUES (1,'zainab',SHA2('1234',256)),  
(5,'eyad',SHA2('12345678',256)), (2,'malak',SHA2('12345',256))
```

Output:

user_id	username	password_hash
1	zainab	03ac674216f3e15c761ee1a5e255f067953623c8b388b4459e...
5	eyad	ef797c8118f02dfb649607dd5d3f8c7623048c9c063d532cc9...
2	malak	5994471abb01112afcc18159f6cc74b4f511b99806da59b3ca...

Login Interface

Login	Home Page
<p>Username</p> <input type="text"/>	
<p>Password</p> <input type="password"/>	
<p>Login</p>	
<p>Not yet a member? Sign up</p>	<p>You are now logged in</p> <p>Welcome reem</p> <p>logout</p>

Register Interface

Register
<p>Username</p> <input type="text"/>
<p>Email</p> <input type="text"/>
<p>Password</p> <input type="password"/>
<p>Confirm password</p> <input type="password"/>
<p>Register</p>
<p>Already a member? Sign in</p>