

# Term Project

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# **Task 1**

## 1. Team Member Information:

- Jordan Small
- Alirio da Rocha

## 2. Task Assignments:

*It is important to note that throughout the lifecycle of the term and the project, these tasks are subject to change as more information or work becomes available.*

- Jordan will be responsible for constructing entities within the schema, including their respective attributes and constraints.
- Alirio will begin to identify primary and foreign keys, creating relationships between entities—and thus will begin to draft the E-R Diagram.
- Both members of the group will work on populating sample data.

## 3. Proposed Database Application:

Our team has decided to construct a database system for a standalone online chatbox in entirety. Since we do not have a working one in mind, we will reserve efforts to bring this to life with a coding implementation.

The chatbox will allow users to register with a username, password, and corresponding email address. Users will be able to list their personal information such as name, sex, location, and as well will be able to specify their username markup (color, font, etc.).

There will be constraints on message sending, but users will be able to do so in multiple servers and include emojis and basic text manipulation. Users deemed as moderators will have privileges to moderate the chat. Separate schemas will be necessary for the coding implementation, but our focus will be on the user schema.

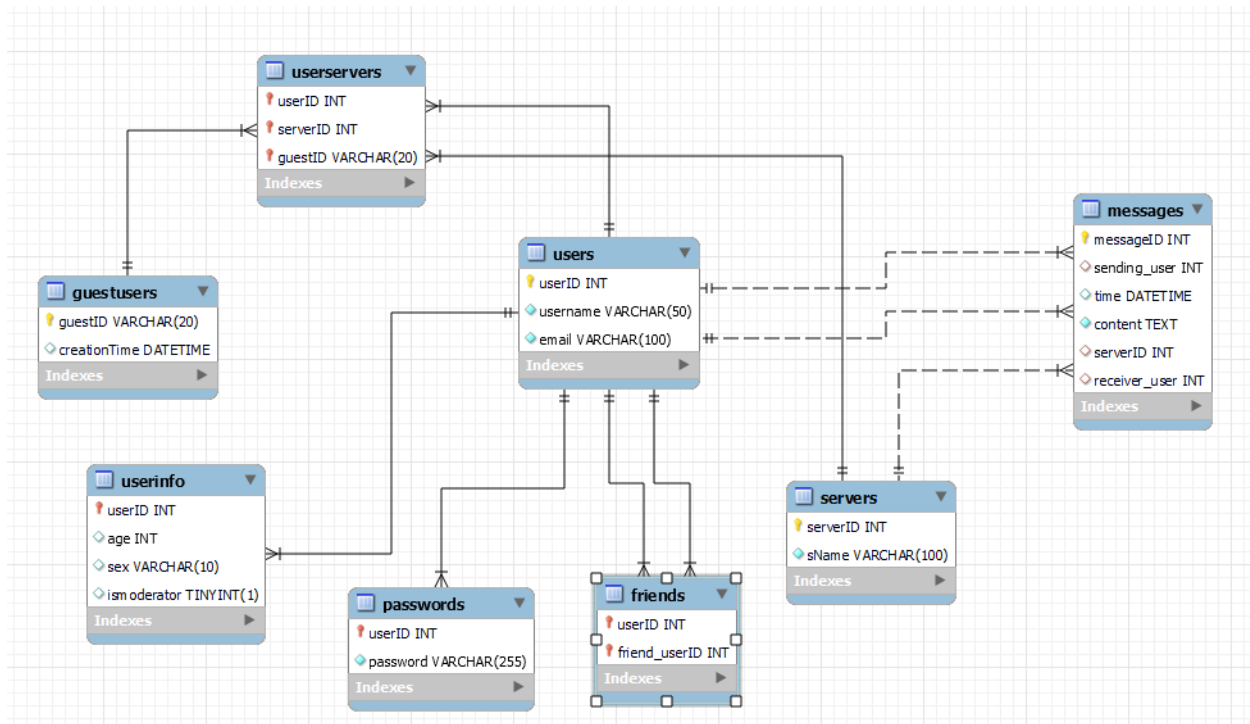
## 4. Functionality Specifications:

We plan to provide complete database functionality for the proposed chatbox system. In doing so, the following tables will be necessary:

- User table: includes user ID/name, email, age, sex, and binary column for moderator (t/f)
- Password table: includes user ID, password, and email
- Message table: includes sending user, date/timestamp, message ID, and message content, and server message was posted to
- Server table: includes server name and message ID
- Emoji table: includes text replacement and location of image on the server

# Task 2

## 1. ER Diagram



## 2. Tables and Constraints

### a. Users

- UserID *Primary Key*
- Username **Not Null Unique**
- Email **Not Null Unique**

### b. Passwords

- UserID *Primary Key + Foreign key referencing userID in users table*
- Password **Not Null**

### c. User info

- UserID *Primary Key + Foreign Key referencing userID in users table*
- Age
- Sex
- IsModerator Boolean

### d. Guest Users

- GuestID *Primary Key + Foreign Key*

- CreationTime **DATETIME**

#### e. Messages

- MessageID *Primary Key*
- Sending\_user *Foreign Key referencing userID in users table*
- Time with DATETIME
- Content **Not Null**
- ServerID *Foreign Key referencing serverID in servers table*
- Receiver\_user *Foreign Key referencing userID in users table*

#### f. Servers

- ServerID *Primary Key*
- SName **Not Null**

#### g. UserServers

- UserID *Primary Key + Foreign Key referencing userID in users table*
- ServerID *Primary Key + Foreign Key referencing serverID in servers table*
- GuestID *Primary Key + Foreign Key referencing guestID in guestUsers table*

#### h. Friends

- UserID *Primary Key + Foreign Key referencing userID in users table*
- Friend\_userID *Primary Key + Foreign Key referencing userID in users table*

### 3. Database Design and ER Diagram

At the design phase of our database application, we produced a highly detailed ER diagram showing both the structure and relationships of the involved entities. The ER diagram can be thought of as a blueprint of the database, in that it structures and provides a clear and concise overview of the data model. Constraints applicable to the database are indicated in this diagram.

### 4. Entity Sets and Their Relationships

There are eight major entities in our database system. These include the User, Passwords, UserInfo, Messages, guestUsers, Friends, userServers, and Servers. Each entity has certain attributes specifying their respective characteristics and constraints. For example, the Users entity's attributes are userID, username, and email, where userID is the primary key. The Passwords entity includes attributes of userID and password and has a one-to-one relationship with the Users entity to maintain the unique password of every user.

The UserInfo entity-- with its attributes such as age, sex, and ismoderator-- as well has a one-to-one relationship with the Users entity. In doing so, the structure will ensure that each user has exactly one set of pertinent information. The Messages entity consists of messageID, sending\_user, time, content, and serverID. It has a one-to-many relationship with both the Users and Servers entities, meaning that each user can send several messages and each server can host several messages.

## 5. Business Rules

Several critical business rules drive the development of our ER diagram. Those business rules ensure the integrity, consistency, and proper functionality of data within our database. Those business rules are as follows:

- a. Uniqueness and Identification: Every userID, username, and email should be unique in the system. This avoids redundant entries into the system and permits correct identification of the users.
- b. Password Management: A user may be associated with only one password; therefore, there is a one-to-one relationship between the entities Users and Passwords.
- c. User Info: A matching entry must exist for every user in the UserInfo table. The age attribute must be a non-negative integer, while the sex is restricted to 'M', 'F', or 'O'. The ismoderator attribute designates whether or not the user has moderator privileges.
- d. Message Integrity: Messages shall be associated with a valid user and optionally with a server, in the case of public messages; or another user, in the case of a private message. The content shall not be empty, and the time must be recorded.
- e. Server Management: Each server shall have a unique ServerID and name, sName. This ensures that servers are uniquely identifiable and thus managed in the database.
- f. Unique Guest IDs: Each time guests log in, a random unique ID is assigned as their guest user ID, such as "guest1234567".
- g. Limited Access: Guest users are only allowed to see the main server, although this could differentiate between the cases of registered and guest users within the application logic, enforcing limited access in the guest case.

## 6. Database Tables

The ER diagram is readily translatable into a concrete SQL table definition, in which structure and relationships are captured as represented on the diagram. Primary keys, foreign keys, and unique constraints are properly placed on applicable entities in each table to maintain the integrity of the data and enforce business rules as defined.

For instance, the User table is defined with userID as the primary key and then there are unique attributes like username and email. The Passwords and UserInfo tables also have userID as the primary key and as a foreign key, relating them to the Users table. Messages have foreign keys referring both to Users and Servers so that messages are correctly associated with users and servers.

The ER diagram and its corresponding database tables are designed keeping principles of business rules in mind. Doing so offers a powerful framework for the management of user accounts/guest accounts, friends, passwords, user information, messages and private messages, and servers on this application. This careful practice also provides for data consistency, integrity, and scalability for support of overall functionality and user experience of this application.

# Task 3

## 1. MySQL Table Creation

Below is a snippet of our DDL used to form our schema. This code will also be included in a pdf upon submission of this report.

```
CREATE TABLE Users (
    userID INT PRIMARY KEY,
    username VARCHAR(50) NOT NULL UNIQUE,
    email VARCHAR(100) NOT NULL UNIQUE
);
CREATE TABLE Passwords (
    userID INT PRIMARY KEY,
    password VARCHAR(255) NOT NULL,
    FOREIGN KEY (userID) REFERENCES Users(userID)
);
CREATE TABLE UserInfo (
    userID INT PRIMARY KEY,
    age INT,
    sex VARCHAR(10),
    ismoderator BOOLEAN,
    FOREIGN KEY (userID) REFERENCES Users(userID)
);
CREATE TABLE Messages (
    messageID INT PRIMARY KEY,
    sending_user INT,
    time DATETIME,
    content TEXT NOT NULL,
    serverID INT,
    receiver_user INT,
    FOREIGN KEY (sending_user) REFERENCES Users(userID),
    FOREIGN KEY (serverID) REFERENCES Servers(serverID),
    FOREIGN KEY (receiver_user) REFERENCES Users(userID)
);
CREATE TABLE Servers (
    serverID INT PRIMARY KEY,
    sName VARCHAR(100) NOT NULL
);
CREATE TABLE UserServers (
    userID INT,
    serverID INT,
    guestID VARCHAR(20),
    PRIMARY KEY (userID, serverID, guestID),
    FOREIGN KEY (userID) REFERENCES Users(userID),
    FOREIGN KEY (serverID) REFERENCES Servers(serverID),
    FOREIGN KEY (guestID) REFERENCES GuestUsers(guestID)
);
CREATE TABLE Friends (
    userID INT,
    friend_userID INT,
    PRIMARY KEY (userID, friend_userID),
    FOREIGN KEY (userID) REFERENCES Users(userID),
    FOREIGN KEY (friend_userID) REFERENCES Users(userID)
);
CREATE TABLE GuestUsers (
    guestID VARCHAR(20) PRIMARY KEY,
    creationTime DATETIME DEFAULT CURRENT_TIMESTAMP
);
```



2. Sample Data Population

To populate random and relevant sample data, we used resources like ChatGPT to ensure candid interactions and usable information. In doing so, we were able to populate over 200 messages from 100 users—all with random information such as name, gender, and email. As discussed earlier in the report, there are separate server ID’s; thus, each server will hold niche conversations. We used this sample data to test our SQL queries in the next section of the report and the results from these queries are also displayed.

3. Queries Showcasing Functions

- i. Display all chat messages containing “hello”
  - **SELECT \***  
**FROM Messages**  
**WHERE content LIKE '%hello%';**

420 •  
421  
422  
423

```
SELECT *  
FROM Messages  
WHERE content LIKE '%hello%';
```

Result Grid    Filter Rows: <input type="text"/>   Edit:      Export/Import:     Wrap Cell Content:						
	messageID	sending_user	time	content	serverID	receiver_user
▶	213	506789	2024-07-03 10:30:00	"Hello there! How's your day going?"	1	607890
	214	607890	2024-07-03 10:45:00	"Hey, just wanted to say hello!"	1	506789
	215	708901	2024-07-03 11:00:00	"Hello, my friend. How have you been?"	2	809012
	216	809012	2024-07-03 11:15:00	"Hi there! Sending a quick hello your way."	2	708901
	217	910123	2024-07-03 11:30:00	"Hello everyone! Ready for another great day?"	3	112234
	218	112234	2024-07-03 11:45:00	"Just dropping by to say hello!"	3	910123
	219	122345	2024-07-03 12:00:00	"Hey! Hello from the other side of the world!"	1	132456
	220	132456	2024-07-03 12:15:00	"Hello, is anyone there?"	1	122345
	221	142567	2024-07-03 12:30:00	"Hello, old friend. It's been a while."	2	152678
	222	152678	2024-07-03 12:45:00	"Hello, world! Here's to a fantastic day."	2	142567
	223	162789	2024-07-03 13:00:00	"Sending a warm hello to you!"	3	172890
	224	172890	2024-07-03 13:15:00	"Hello, stranger! Nice to meet you."	3	162789
	225	182901	2024-07-03 13:30:00	"Hey, remember me? Just wanted to say hello."	1	192012
	226	192012	2024-07-03 13:45:00	"Hello, team! Let's get this project started."	1	182901
	227	202123	2024-07-03 14:00:00	"Hello, dear. How's everything on your end?"	2	212234
	228	212234	2024-07-03 14:15:00	"Hello, from sunny [location]!"	2	202123
	229	222345	2024-07-03 14:30:00	"Hey there, just dropping in to say hello!"	3	232456
	230	232456	2024-07-03 14:45:00	"Hello, gorgeous! Ready for our date?"	3	222345
	231	242567	2024-07-03 15:00:00	"Hello, from your favorite troublemaker!"	1	252678
	232	252678	2024-07-03 15:15:00	"Hello, my love. Thinking of you always."	1	242567

ii. List all male users aged 20+

- **SELECT** Users.userID, Users.username, Users.email, UserInfo.age, UserInfo.sex  
**FROM** Users **INNER JOIN** UserInfo **ON** Users.userID = UserInfo.userID  
**WHERE** UserInfo.sex = 'male'  
**AND** UserInfo.age >= 20;

```
424 • SELECT Users.userID, Users.username, Users.email, UserInfo.age, UserInfo.sex
425 FROM Users INNER JOIN UserInfo ON Users.userID = UserInfo.userID
426 WHERE UserInfo.sex = 'male'
427 AND UserInfo.age >= 20;
428
```

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	userID	username	email	age	sex
▶	132456	oscar_hernandez	oscar.hernandez@outlook.com	33	Male
	152678	trent_nakamura	trent.nakamura@gmail.com	30	Male
	162789	victor_rossi	victor.rossi@yahoo.com	22	Male
	172890	walter_garcia	walter.garcia@gmail.com	29	Male
	192012	zach_mustafa	zach.mustafa@hotmail.com	32	Male
	202123	xavier_johnson	xavier.johnson@gmail.com	26	Male
	203456	bob_jones	bob.jones@yahoo.com	28	Male
	232456	steve_mendes	steve.mendes@outlook.com	25	Male
	242567	tom_fernandez	tom.fernandez@gmail.com	31	Male
	262789	vincent_ramos	vincent.ramos@gmail.com	28	Male
	282901	xander_novak	xander.novak@gmail.com	26	Male
	302123	zeus_dias	zeus.dias@gmail.com	32	Male
	312234	apollo_richards	apollo.richards@hotmail.com	24	Male
	332456	carlos_silva	carlos.silva@yahoo.com	27	Male
	362789	frederic_benoit	frederic.benoit@hotmail.com	25	Male
	382901	hans_muller	hans.muller@yahoo.com	32	Male
	402123	jacob_levine	jacob.levine@gmail.com	29	Male
	405678	dave_kim	dave.kim@gmail.com	30	Male
	422345	lars_olsen	lars.olsen@gmail.com	31	Male
	452678	osamu_yamamoto	osamu.yamamoto@gmail.com	30	Male
	462789	paula_diaz	paula.diaz@hotmail.com	32	Male
	482901	roberto_gomez	roberto.gomez@yahoo.com	29	Male
	512234	ulrika_nordin	ulrika.nordin@hotmail.com	24	Male
	532456	william_brown	william.brown@yahoo.com	28	Male
	552678	zane_thompson	zane.thompson@gmail.com	32	Male

iii. Show all messages from user with ID 102345

- **SELECT** \*  
**FROM** Messages  
**WHERE** sending\_user = 102345;

```

424 • SELECT *
425 FROM Messages
426 WHERE sending_user = 102345;
427
428

```

Result Grid						
		Filter Rows:	Edit:		Export/Import:	Wrap Cell Content:
	messageID	sending_user	time	content	serverID	receiver_user
▶	1	102345	2024-07-03 10:15:00	Brazil played exceptionally well in the last match!	1	203456
	33	102345	2024-07-03 10:47:45	What's your favorite team in Copa America?	1	203456
	65	102345	2024-07-03 11:19:30	Who's your favorite player in Copa America?	1	203456
	97	102345	2024-07-03 11:51:45	Elden Ring's boss fights are challenging.	2	203456
	129	102345	2024-07-03 12:28:30	What's your favorite Copa America match format?	1	203456
	161	102345	2024-07-03 13:00:45	Which Copa America team has the best offense?	1	203456
	193	102345	2024-07-03 13:32:45	What's the best weapon in Elden Ring?	2	203456

iv. Find messages from female users in server ID 1

- **SELECT** Messages.messageID, Messages.sending\_user, Messages.time, Messages.content, Messages.serverID, Messages.receiver\_user  
**FROM** Messages **INNER JOIN** Users **ON** Messages.sending\_user = Users.userID  
**INNER JOIN** UserInfo **ON** Users.userID = UserInfo.userID  
**WHERE** UserInfo.sex = 'female' **AND** Messages.serverID = 1;

```

428 • SELECT Messages.messageID, Messages.sending_user, Messages.time, Messages.content, Messages.serverID, Messages.receiver_user
429 FROM Messages INNER JOIN Users ON Messages.sending_user = Users.userID INNER JOIN UserInfo ON Users.userID = UserInfo.userID
430 WHERE UserInfo.sex = 'female' AND Messages.serverID = 1;
431




```

Result Grid						
		Filter Rows:	Export:		Wrap Cell Content:	
	messageID	sending_user	time	content	serverID	receiver_user
	107	122345	2024-07-03 12:06:45	What's your favorite Copa America stadium?	1	132456
	203	122345	2024-07-03 13:42:30	What's the best Copa America team of all time?	1	132456
	219	122345	2024-07-03 12:00:00	"Hey! Hello from the other side of the world!"	1	132456
	13	142567	2024-07-03 10:27:45	What's your favorite Copa America match so far?	1	152678
	77	142567	2024-07-03 11:31:45	Who do you think will be the top scorer in Copa ...	1	152678
	141	142567	2024-07-03 12:40:45	Which Copa America stadium has the best food?	1	152678
	173	142567	2024-07-03 13:12:45	Have you attended any Copa America matches?	1	152678
	49	182901	2024-07-03 11:03:22	Which team surprised you the most in Copa Am...	1	192012
	113	182901	2024-07-03 12:12:22	Which Copa America team has the best defense?	1	192012
	209	182901	2024-07-03 13:48:45	Who's your favorite Copa America commentator?	1	192012
	225	182901	2024-07-03 13:30:00	"Hey, remember me? Just wanted to say hello."	1	192012
	20	212234	2024-07-03 10:34:10	Yes, it was unforgettable!	1	202123
	84	212234	2024-07-03 11:38:10	I believe Brazil has the best chance.	1	202123
	180	212234	2024-07-03 13:19:12	Alisson Becker is top-notch.	1	202123
	56	252678	2024-07-03 11:10:12	I think Brazil will take the trophy.	1	242567
	120	252678	2024-07-03 12:19:12	Yes, it was spectacular!	1	242567
	152	252678	2024-07-03 12:51:33	Yes, they're always fun!	1	242567
	232	252678	2024-07-03 15:15:00	"Hello, my love. Thinking of you always."	1	242567
	26	272890	2024-07-03 10:40:12	They are playing smart.	1	262789
	90	272890	2024-07-03 11:44:10	The final is going to be epic.	1	262789
	186	272890	2024-07-03 13:25:10	I love Brazil's classic yellow.	1	262789
	95	322345	2024-07-03 11:49:30	Who do you think will be the MVP of Copa Ameri...	1	332456
	191	322345	2024-07-03 13:30:30	Who's your Copa America top scorer prediction?	1	332456
	101	506789	2024-07-03 12:00:00	Who will be the Copa America dark horse this y...	1	607890
	197	506789	2024-07-03 13:36:22	Who's the best Copa America defender?	1	607890

v. Show the male users with the most messages

- **SELECT** Users.userID, Users.username, **COUNT**(Messages.messageID) **AS** num\_messages  
**FROM** Users **INNER JOIN** Messages **ON** Users.userID = Messages.sending\_user  
**INNER JOIN** UserInfo **ON** Users.userID = UserInfo.userID  
**WHERE** UserInfo.sex = 'male'  
**GROUP BY** Users.userID, Users.username  
**ORDER BY** num\_messages **DESC**  
**LIMIT** 10;

```
432 • SELECT Users.userID, Users.username, COUNT(Messages.messageID) AS num_messages
433 FROM Users INNER JOIN Messages ON Users.userID = Messages.sending_user INNER JOIN UserInfo ON Users.userID = UserInfo.userID
434 WHERE UserInfo.sex = 'male'
435 GROUP BY Users.userID, Users.username
436 ORDER BY num_messages DESC
437 LIMIT 10;
438
```

Result Grid			
Filter Rows: <input type="text"/>			
Export:  Wrap Cell Content:  Fetch rows: 			
	userID	username	num_messages
▶	132456	oscar_hernandez	8
	152678	trent_nakamura	8
	162789	victor_rossi	8
	172890	walter_garcia	8
	192012	zach_mustafa	8
	607890	frank_chen	8
	910123	ivan_perez	8
	202123	xavier_johnson	7
	203456	bob_jones	7
	232456	steve_mendes	7

vi. List all messages from July 3 between 10-11am

- **SELECT** \*  
**FROM** Messages  
**WHERE** **DATE**(Messages.time) = '2024-07-03'  
**AND** **HOUR**(Messages.time) = 10  
**AND** **MINUTE**(Messages.time) **BETWEEN** 0 **AND** 59;

439

•

SELECT \*

FROM Messages

WHERE DATE(Messages.time) = '2024-07-03'

AND HOUR(Messages.time) = 10

AND MINUTE(Messages.time) BETWEEN 0 AND 59;

444

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:



	messageID	sending_user	time	content	serverID	receiver_user
▶	1	102345	2024-07-03 10:15:00	Brazil played exceptionally well in the last match!	1	203456
	2	203456	2024-07-03 10:16:30	Yes, their defense was solid!	1	102345
	3	304567	2024-07-03 10:17:45	Anyone tried the new magic system in Elden Ring?	2	405678
	4	405678	2024-07-03 10:18:10	It's really complex but amazing!	2	304567
	5	506789	2024-07-03 10:19:30	Let's plan a Call of Duty session this weekend!	3	607890
	6	607890	2024-07-03 10:20:12	Count me in!	3	506789
	7	708901	2024-07-03 10:21:45	Who do you think will win Copa America this year?	1	809012
	8	809012	2024-07-03 10:22:33	It's hard to say, but Argentina looks strong.	1	708901
	9	910123	2024-07-03 10:23:22	Have you explored the ruins in Elden Ring?	2	112234
	10	112234	2024-07-03 10:24:10	Yes, they are beautifully designed.	2	910123
	11	122345	2024-07-03 10:25:00	Call of Duty's new map is intense!	3	132456
	12	132456	2024-07-03 10:26:30	I can't wait to try it!	3	122345
	13	142567	2024-07-03 10:27:45	What's your favorite Copa America match so far?	1	152678
	14	152678	2024-07-03 10:28:10	Brazil vs Argentina was thrilling!	1	142567
	15	162789	2024-07-03 10:29:30	I discovered a hidden boss in Elden Ring!	2	172890
	16	172890	2024-07-03 10:30:12	Where did you find it?	2	162789
	17	182901	2024-07-03 10:31:45	Let's team up for Call of Duty tonight.	3	192012
	18	192012	2024-07-03 10:32:33	Sounds good, I'll be online.	3	182901
	19	202123	2024-07-03 10:33:22	Did you see that amazing goal in Copa America?	1	212234
	20	212234	2024-07-03 10:34:10	Yes, it was unforgettable!	1	202123
	21	222345	2024-07-03 10:35:00	Elden Ring's lore is so deep.	2	232456
	22	232456	2024-07-03 10:36:30	I love exploring the story.	2	222345
	23	242567	2024-07-03 10:37:45	Ready for another round of Call of Duty?	3	252678
	24	252678	2024-07-03 10:38:10	Always!	3	242567
	25	262789	2024-07-03 10:39:30	Argentina's tactics in Copa America are impressi...	1	272890

- vii. Show passwords from male users registered with a Yahoo email address
- **SELECT** Users.userID, Users.username, UserInfo.sex, Users.email, Passwords.password  
**FROM** Users **INNER JOIN** UserInfo **ON** Users.userID = UserInfo.userID **INNER**  
**JOIN** Passwords **ON** Users.userID = Passwords.userID  
**WHERE** UserInfo.sex = 'male' **AND** Users.email **LIKE** '%@yahoo.%';

```

439 • SELECT Users.userID, Users.username, UserInfo.sex, Users.email, Passwords.password
440 FROM Users INNER JOIN UserInfo ON Users.userID = UserInfo.userID INNER JOIN Passwords ON Users.userID = Passwords.userID
441 WHERE UserInfo.sex = 'male' AND Users.email LIKE '%@yahoo.%';
442

```

Result Grid					
Filter Rows: <input type="text"/>					
Export:  Wrap Cell Content: 					
	userID	username	sex	email	password
▶	162789	victor_rossi	Male	victor.rossi@yahoo.com	rtyu1234
	203456	bob_jones	Male	bob.jones@yahoo.com	pass1234
	332456	carlos_silva	Male	carlos.silva@yahoo.com	jk4lm5no
	382901	hans_muller	Male	hans.muller@yahoo.com	ed4rf5gt
	482901	roberto_gomez	Male	roberto.gomez@yahoo.com	wer123po
	532456	william_brown	Male	william.brown@yahoo.com	mlkj8909
	607890	frank_chen	Male	frank.chen@yahoo.com	fghij345
	672890	leonardo_souza	Male	leonardo.souza@yahoo.com	poi765rt
	712234	pierre_martin	Male	pierre.martin@yahoo.com	rty567pl
	812234	zara_ahmed	Male	zara.ahmed@yahoo.com	uyt345lp
	892012	hassan_al_sheikh	Male	hassan.al_sheikh@yahoo.com	wer098po
	992012	rafael_santos	Male	rafael.santos@yahoo.com	lkj123lo



viii. List all moderators

- **SELECT** Users.userID, Users.username, UserInfo.sex  
**FROM** Users **INNER JOIN** UserInfo **ON** Users.userID = UserInfo.userID  
**WHERE** UserInfo.ismoderator = true;

```

443 • SELECT Users.userID, Users.username, UserInfo.sex
444 FROM Users INNER JOIN UserInfo ON Users.userID = UserInfo.userID
445 WHERE UserInfo.ismoderator = true;

```

Result Grid			
Filter Rows: <input type="text"/>			
Export:  Wrap Cell Content: 			
	userID	username	sex
▶	100123	sophia_hall	Female
	152678	trent_nakamura	Male
	203456	bob_jones	Male
	222345	rachel_khan	Female
	302123	zeus_dias	Male
	402123	jacob_levine	Male
	910123	ivan_perez	Male

ix. Find the timestamp of the message sent from user ID 102345 containing “pineapple”

- **SELECT** time  
**FROM** Messages  
**WHERE** sending\_user = 102345  
**AND** content **LIKE** '%pineapple%';

```

451 • SELECT time
452 FROM Messages
453 WHERE sending_user = 102345
454 AND content LIKE '%pineapple%';

```

Result Grid		Filter Rows:
	time	
▶	2024-07-04 10:30:00	

x. Show all messages from all moderator female users

- **SELECT** Messages.messageID, Messages.sending\_user, Messages.time, Messages.content, Messages.serverID, Messages.receiver\_user  
**FROM** Messages  
**INNER JOIN** Users **ON** Messages.sending\_user = Users.userID  
**INNER JOIN** UserInfo **ON** Users.userID = UserInfo.userID  
**WHERE** UserInfo.sex = 'FEMALE'  
**AND** UserInfo.ismoderator = true;

```

451 • SELECT Messages.messageID, Messages.sending_user, Messages.time, Messages.content, Messages.serverID, Messages.receiver_user
452 FROM Messages
453 INNER JOIN Users ON Messages.sending_user = Users.userID
454 INNER JOIN UserInfo ON Users.userID = UserInfo.userID
455 WHERE UserInfo.sex = 'FEMALE'
456 AND UserInfo.ismoderator = true;

```

Result Grid

Filter Rows:

Export:

Wrap Cell Contents:

	messageID	sending_user	time	content	serverID	receiver_user
▶	21	222345	2024-07-03 10:35:00	Elden Ring's lore is so deep.	2	232456
	53	222345	2024-07-03 11:07:45	Call of Duty's new update added exciting featur...	3	232456
	85	222345	2024-07-03 11:39:30	Elden Ring's character customization is extensive.	2	232456
	117	222345	2024-07-03 12:16:45	Call of Duty's esports scene is growing.	3	232456
	149	222345	2024-07-03 12:48:30	Call of Duty's competitive scene is fierce.	3	232456
	181	222345	2024-07-03 13:20:45	Elden Ring's lore is fascinating.	2	232456
	229	222345	2024-07-03 14:30:00	"Hey there, just dropping in to say hello!"	3	232456

#### 4. User Interface Prototype

Below is a user interface prototype. Many of the visual aspects of this are subject to change, but the layout effectively displays some of the business rules as described their corresponding section in this report.

**AJChat**

ShopLogoutMy profileWelcome, Jack

SiD 1 - Copa America

DefaultPMServer List

[03 JUL 24 02:35 PM] Alex : I love Futbol

[03 JUL 24 12:30 PM] Jack : Just got back from another dog walk.

[03 JUL 24 11:11 AM] Tina : What a game!!!!!!!

[03 JUL 24 10:12 AM] Tina : GOOOOOOOOOOOOOOOOOOOOOOL!!!!

[03 JUL 24 10:12 AM] Alex : I used to have a Dalmation too!!

[03 JUL 24 10:10 AM] Jack : He's a Dalmation named Freckle. So cute

[03 JUL 24 10:07 AM] Jack : I can't-- I am watching my cousin's dog.

[03 JUL 24 10:06 AM] Tom : Want to go to the pub for the final? @Jack

[03 JUL 24 10:05 AM] Jill : I am! Just cooked some popcorn.

[03 JUL 24 10:05 AM] Jack : Hey everyone! Who's watching the game?

Send