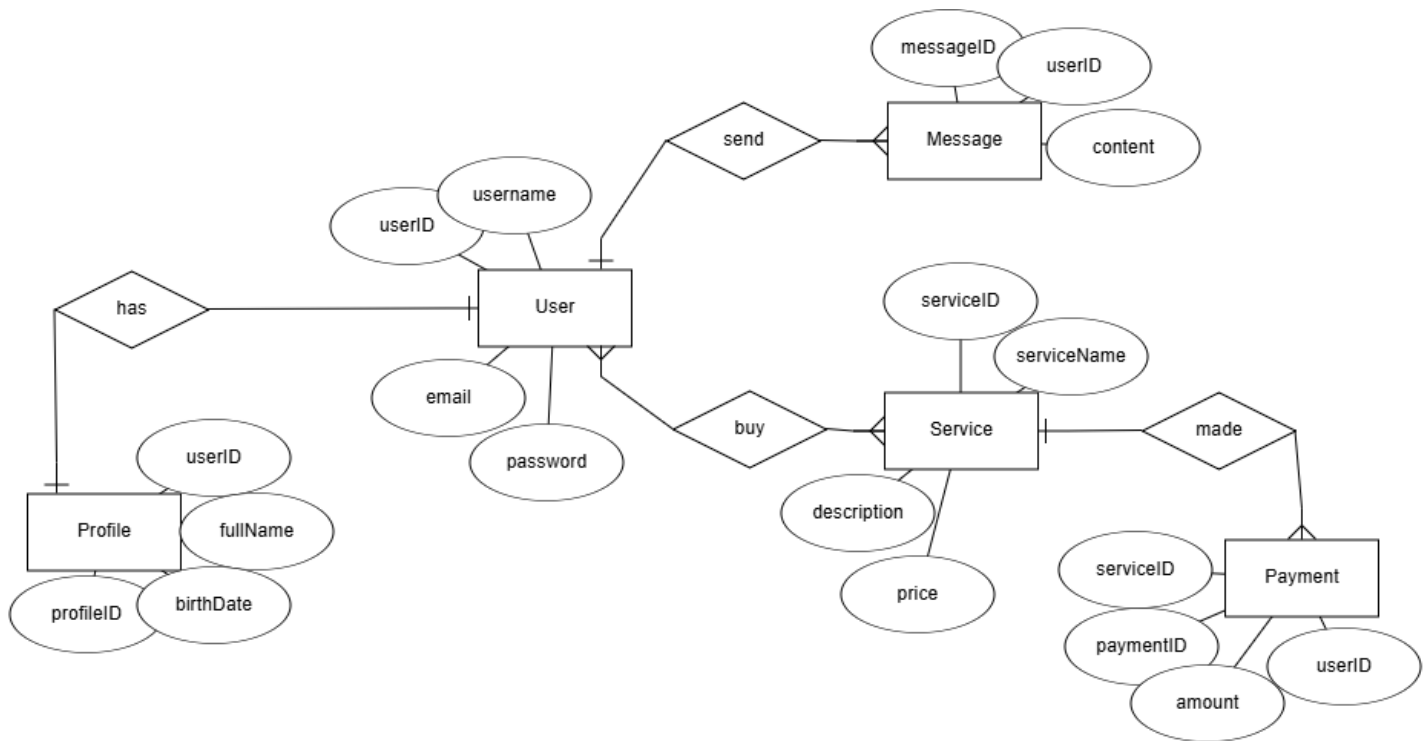


Assignment 4:

1- ER diagram:



2- Table creation:

a- Users table:

```
CREATE TABLE Users (  
    userID INT GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,  
    username VARCHAR2(50) UNIQUE NOT NULL,  
    email VARCHAR2(100) UNIQUE NOT NULL,  
    password VARCHAR2(255) NOT NULL  
);
```

b- Profiles table:

```
CREATE TABLE Profiles (  
    profileID INT GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,  
    userID INT UNIQUE,  
    fullName VARCHAR2(100),  
    date_of_birth DATE,  
    CONSTRAINT fk_profile_user FOREIGN KEY (userID) REFERENCES Users(userID)  
);
```

c- Message table:

```
CREATE TABLE Message (  
    messageID INT GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,  
    userID INT,  
    mContent VARCHAR2(1000),  
    CONSTRAINT fk_message_user FOREIGN KEY (userID) REFERENCES Users(userID) ON DELETE  
    CASCADE  
);
```

d- Service table:

```
CREATE TABLE Service (  
    serviceID INT GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,  
    serviceName VARCHAR2(100),  
    description VARCHAR2(500),  
    price NUMBER(10, 2)  
);
```

e- Payment table:

```
CREATE TABLE Payment (  
    paymentID INT GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,  
    userID INT,  
    serviceID INT,  
    amount NUMBER(10, 2),  
    CONSTRAINT fk_payment_user FOREIGN KEY (userID) REFERENCES Users(userID) ON DELETE CASCADE,  
    CONSTRAINT fk_payment_service FOREIGN KEY (serviceID) REFERENCES Service(serviceID)  
    ON DELETE CASCADE  
);
```

f- UserService table:

```
CREATE TABLE UserService (  
    userID INT,  
    serviceID INT,  
    CONSTRAINT fk_userservice_user FOREIGN KEY (userID) REFERENCES Users(userID) ON DELETE CASCADE,  
    CONSTRAINT fk_userservice_service FOREIGN KEY (serviceID) REFERENCES Service(serviceID)  
    ON DELETE CASCADE,  
    PRIMARY KEY (userID, serviceID)  
);
```

3- Adding 3 record to each table:

a- Users table:

```
INSERT INTO Users (username, email, password) VALUES ('Mohannad', 'moh@gmail.com', 'pwd123');
```

```
INSERT INTO Users ( username, email, password) VALUES ('Abdullah', 'abd@gmail.com', 'pwd456');
```

```
INSERT INTO Users (username, email, password) VALUES ('Deema', 'Deema@gmail.com', 'pwd789');
```

- Result:

	USERID	USERNAME	EMAIL	PASSWORD
1	2	Mohannad	moh@gmail.com	pwd123
2	3	Abdullah	abd@gmail.com	pwd456
3	4	Deema	Deema@gmail.com	pwd789

b- Profiles table:

```
INSERT INTO Profiles (userID, fullName, birthDate) VALUES (2, 'Mohannad', TO_DATE('1990-05-14', 'YYYY-MM-DD'));
```

```
INSERT INTO Profiles (userID, fullName, birthDate) VALUES (3, 'Abdullah', TO_DATE('1992-08-22', 'YYYY-MM-DD'));
```

```
INSERT INTO Profiles (userID, fullName, birthDate) VALUES (4, 'Deema', TO_DATE('1988-03-10', 'YYYY-MM-DD'));
```

- Result:

	PROFILEID	USERID	FULLNAME	BIRTHDATE
1	3	2	Mohannad	14/MAY/90
2	4	3	Abdullah	22/AUG/92
3	5	4	Deema	10/MAR/88

c- Message table:

```
INSERT INTO Message (userID, mcontent) VALUES (2, 'Hello, how are you?');
```

```
INSERT INTO Message (userID, mcontent) VALUES (3, 'Hi, all good. How about you?');
```

```
INSERT INTO Message (userID, mcontent) VALUES (4, 'Hey everyone, I am joining the chat.');
```

- Result:

	MESSAGEID	USERID	MCONTENT
1	2	2	Hello, how are you?
2	3	3	Hi, all good. How about you?
3	4	3	Hi, all good. How about you?
4	5	4	Hey everyone, I am joining the chat.

d- Service table:

```
INSERT INTO Service (serviceName, description, price) VALUES ('Premium Messaging', 'Allows unlimited messages', 9.99);
```

```
INSERT INTO Service (serviceName, description, price) VALUES ('Ad-free Experience', 'Removes all ads', 4.99);
```

```
INSERT INTO Service (serviceName, description, price) VALUES ('Cloud Storage', 'Provides 100GB of cloud storage', 14.99);
```

- Result:

	SERVICEID	SERVICENAME	DESCRIPTION	PRICE
1	1	Premium Messaging	Allows unlimited messages	9.99
2	2	Ad-free Experience	Removes all ads	4.99
3	3	Cloud Storage	Provides 100GB of cloud storage	14.99

e- Payment table:

INSERT INTO Payment (userID, serviceID, amount) VALUES (2, 1, 9.99);
--

INSERT INTO Payment (userID, serviceID, amount) VALUES (3, 2, 4.99);
--

INSERT INTO Payment (userID, serviceID, amount) VALUES (4, 3, 14.99);

- Result:

	⚡ PAYMENTID	⚡ USERID	⚡ SERVICEID	⚡ AMOUNT
1	1	2	1	9.99
2	2	3	2	4.99
3	3	4	3	14.99

f- UserService table:

INSERT INTO UserService (userID, serviceID) VALUES (2, 1);
--

INSERT INTO UserService (userID, serviceID) VALUES (3, 2);
--

INSERT INTO UserService (userID, serviceID) VALUES (4, 3);
--

- Result:

	⚡ USERID	⚡ SERVICEID
1	2	1
2	3	2
3	4	3

4- Updating 1 record from each table:

a- Users table:

```
UPDATE Users SET email = 'moh2@hotmail.com' WHERE userID = 2;
```

- Result:

	USERID	USERNAME	EMAIL	PASSWORD
1	2	Mohannad	<u>moh2@hotmail.com</u>	pwd123
2	3	Abdullah	abd@gmail.com	pwd456
3	4	Deema	Deema@gmail.com	pwd789

b- Profiles table:

```
UPDATE Profiles SET fullName = 'Mohannad Jaradat' WHERE userID = 2;
```

- Result:

	PROFILEID	USERID	FULLNAME	BIRTHDATE
1	3	2	<u>Mohannad Jaradat</u>	14/MAY/90
2	4	3	Abdullah	22/AUG/92
3	5	4	Deema	10/MAR/88

c- Message table:

```
UPDATE Message SET mcontent = 'Hello, this is the updated message' WHERE messageID = 4;
```

- Result:

	MESSAGEID	USERID	MCONTENT
1	2	2	Hello, how are you?
2	3	3	Hi, all good. How about you?
3	4	3	<u>Hello, this is the updated message</u>
4	5	4	Hey everyone, I am joining the chat.

d- Service table:

UPDATE Service SET price = 25.55 WHERE serviceID = 1;

- Result:

	SERVICEID	SERVICENAME	DESCRIPTION	PRICE
1	1	Premium Messaging	Allows unlimited messages	<u>25.55</u>
2	2	Ad-free Experience	Removes all ads	4.99
3	3	Cloud Storage	Provides 100GB of cloud storage	14.99

e- Payment table:

UPDATE Payment SET amount = 50.00 WHERE paymentID = 3;

- Result:

	PAYMENTID	USERID	SERVICEID	AMOUNT
1	1	2	1	9.99
2	2	3	2	4.99
3	3	4	3	<u>50</u>

5- Deleting 1 record from each table:

a- Profiles table:

```
DELETE FROM Profiles WHERE profileID = 5;
```

- Result:

	PROFILEID	USERID	FULLNAME	BIRTHDATE
1	3	2	Mohannad Jaradat	14/MAY/90
2	4	3	Abdullah	22/AUG/92

b- Users table:

```
DELETE FROM Users WHERE userID = 4;
```

- Result:

	USERID	USERNAME	EMAIL	PASSWORD
1	2	Mohannad	moh2@hotmail.com	pwd123
2	3	Abdullah	abd@gmail.com	pwd456

c- Message table:

```
DELETE FROM Message WHERE messageID = 3;
```

- Result:

	MESSAGEID	USERID	MCONTENT
1	2	2	Hello, how are you?
2	4	3	Hello, this is the updated message

d- Service table:

```
DELETE FROM Service WHERE serviceID = 2;
```

- Result:

	SERVICEID	SERVICENAME	DESCRIPTION	PRICE
1	1	Premium Messaging	Allows unlimited messages	25.55
2	3	Cloud Storage	Provides 100GB of cloud storage	14.99

e- Payment table:

```
DELETE FROM Service WHERE serviceID = 1;
```

- Result:

PAYMENTID	USERID	SERVICEID	AMOUNT

f- UserService table:

at this point, UserService table is already empty, because while creating the tables, the foreign keys were set to on delete cascade.

6- Modify 1 of the table's names:

```
RENAME Profiles TO UserProfiles;
```

7- modify 2 column names with their data types:

ALTER TABLE message RENAME COLUMN mcontent TO contnetUpdated;

ALTER TABLE message RENAME COLUMN messageID TO messageIDUpdated;

ALTER TABLE message MODIFY contnetUpdated VARCHAR2(2000);

ALTER TABLE message MODIFY contnetUpdated number(38,1);

8- class diagram:

