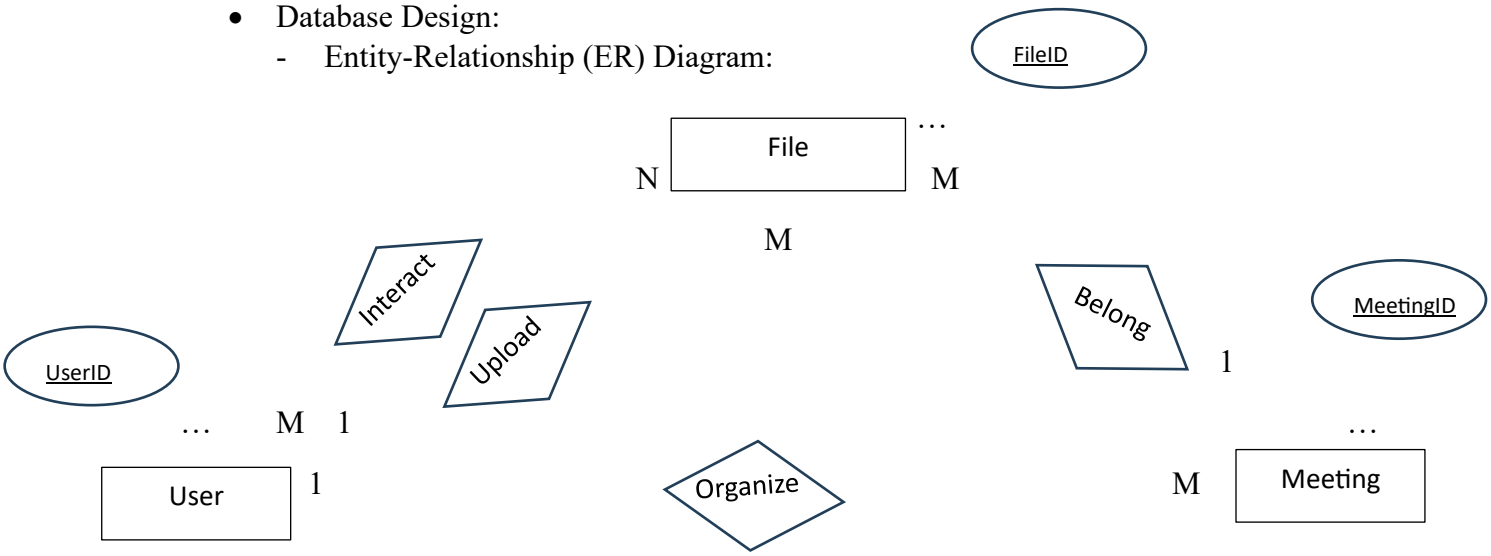
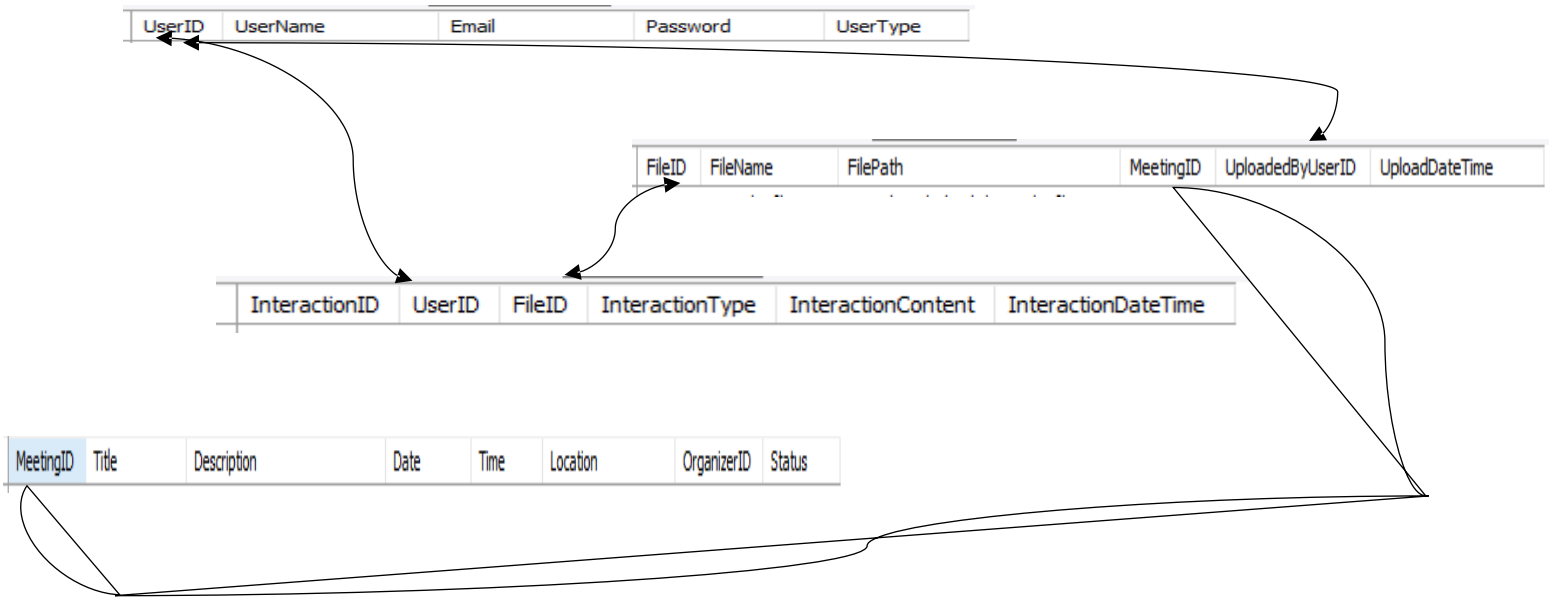
My task was to design a simple database for storing files, meetings, and users' interactions on files for each meeting.

- Database Design:
  - Entity-Relationship (ER) Diagram:



For simplicity and clarity, we do not write all the attributes on the entities, and we will show them in the schemas below:



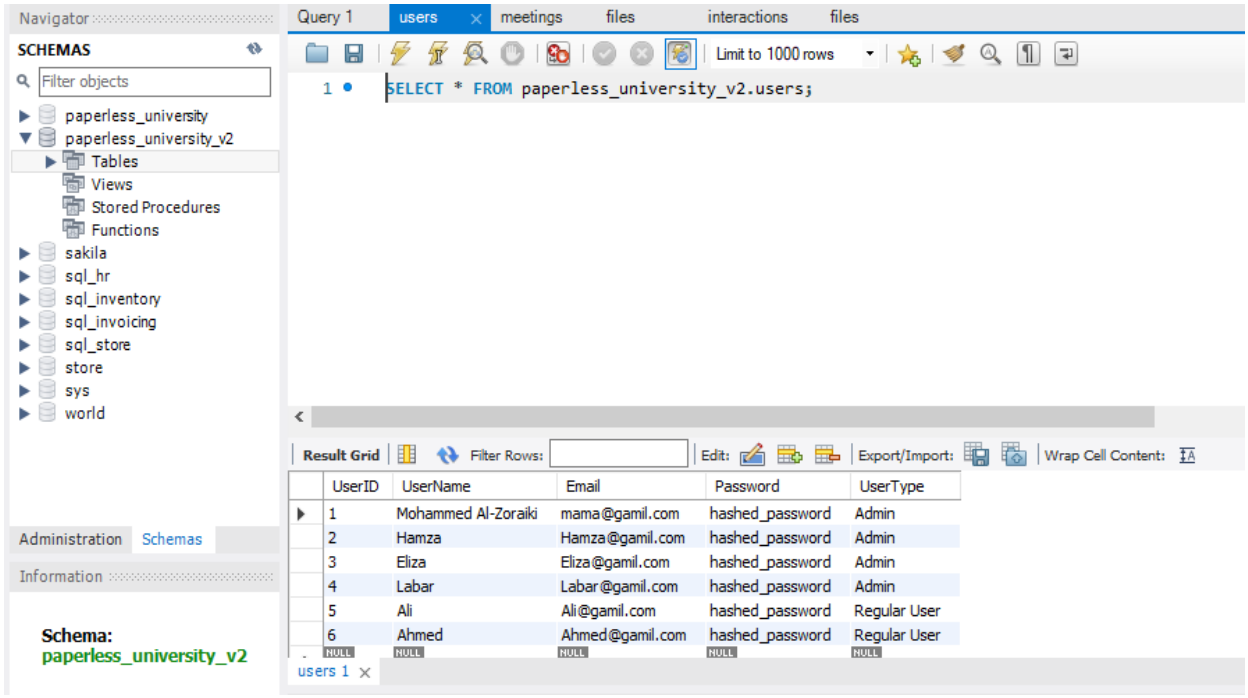
Database Tables:

- We need 4 tables to store different types of information and define relationships between these tables.
- The tables are:
  1. Users Table:
     - UserID (Primary Key)
     - UserName
     - Email
     - Password
     - UserType (Admin or Regular User)
  2. Meetings Table:
     - MeetingID (Primary Key)
     - Title
     - Description
     - Date
     - Time
     - Location
     - OrganizerID (Foreign Key referencing UserID from Users Table)
     - Status (Scheduled, In Progress, Completed, Canceled, etc.)
  3. Files Table:
     - FileID (Primary Key)
     - FileName
     - FilePath
     - MeetingID (Foreign Key referencing MeetingID from Meetings Table)
     - UploadedByUserID (Foreign Key referencing UserID from Users Table)
     - UploadDateTime
  4. Interactions Table:
     - InteractionID (Primary Key)
     - FileID (Foreign Key referencing FileID from Files Table)
     - UserID (Foreign Key referencing UserID from Users Table)
     - InteractionType (Comment, Like, etc.)
     - InteractionContent
     - InteractionDateTime

- Relationships:

  1. Each meeting is associated with one organizer (admin user) (UserID in Meetings Table is a Foreign Key referencing UserID in Users Table).
  2. Each file is associated with one meeting (MeetingID in Files Table is a Foreign Key referencing MeetingID in Meetings Table).
  3. Each interaction is associated with one File and one user (FileID and UserID in Interactions Table are Foreign Keys referencing FileID and UserID in Files and Users Tables, respectively).

- Build the database in MySQL:
  We wrote the SQL commands to build the tables and insert some data samples into each table and we checked relations and database integration, and everything is working just fine. (Code is attached in the files: “Creat_database_v2.sql” and “insert_data_samples_v2.sql”.



- Users Table:

UserID	UserName	Email	Password	UserType
1	Mohammed Al-Zoraiki	mama@gamil.com	hashed_password	Admin
2	Hamza	Hamza@gamil.com	hashed_password	Admin
3	Eliza	Eliza@gamil.com	hashed_password	Admin
4	Labar	Labar@gamil.com	hashed_password	Admin
5	Ali	Ali@gamil.com	hashed_password	Regular User
6	Ahmed	Ahmed@gamil.com	hashed_password	Regular User

- Meetings Table:

MeetingID	Title	Description	Date	Time	Location	OrganizerID	Status
1	Project Kickoff	Meeting to discuss project goals	2023-11-07	20:00:00	Conference Room A	1	Scheduled

- Files Table:

FileID	FileName	FilePath	MeetingID	UploadedByUserID	UploadDateTime
1	example_file.txt	somewhere/uploads/example_file.txt	1	1	2023-11-10 15:00:00

- Interaction Table:

InteractionID	UserID	FileID	InteractionType	InteractionContent	InteractionDateTime
1	3	1	Comment	Great discussion !	2023-11-10 14:30:00
2	4	1	Vote	Agree	2023-11-10 14:30:00
NULL	NULL	NULL	NULL	NULL	NULL

- SQL code for Creating tables:

```
CREATE DATABASE paperless_university_v2;

USE paperless_university_v2;

CREATE TABLE Users  (
    UserID INT PRIMARY KEY,
    UserName VARCHAR(50),
    Email VARCHAR(100),
    Password VARCHAR(255), -- Use appropriate length for password hashes
    UserType ENUM('Admin', 'Regular User')
);

CREATE TABLE Meetings (
    MeetingID INT PRIMARY KEY,
    Title VARCHAR(100),
    Description TEXT,
    Date DATE,
    Time TIME,
    Location VARCHAR(255),
    OrganizerID INT,
    Status ENUM('Scheduled', 'In Progress', 'Completed', 'Canceled'),
    FOREIGN KEY (OrganizerID) REFERENCES Users(UserID)
);

CREATE TABLE Files (
    FileID INT PRIMARY KEY,
    FileName VARCHAR(255),
    FilePath VARCHAR(255),
    MeetingID INT,
    UploadedByUserID INT,
    UploadDateTime TIMESTAMP,
    FOREIGN KEY (MeetingID) REFERENCES Meetings(MeetingID),
    FOREIGN KEY (UploadedByUserID) REFERENCES Users(UserID)
);

CREATE TABLE Interactions (
    InteractionID INT PRIMARY KEY,
    -- MeetingID INT,  -- when the interaction with meeting
    UserID INT,
    FileID INt,
    InteractionType VARCHAR(50),
```

```
    InteractionContent TEXT,
    InteractionDateTime TIMESTAMP,
    -- FOREIGN KEY (MeetingID) REFERENCES Meetings(MeetingID),  -- cancelled
    FOREIGN KEY (UserID) REFERENCES Users(UserID),
     FOREIGN KEY (FileID) REFERENCES Files(FileID)
);
```

- SQL code for Inserting data samples into tables:

```
USE paperless_university_v2;

INSERT INTO Users (UserID, UserName, Email, Password, UserType)
    VALUES (1, 'Mohammed Al-Zoraiki', 'mama@gamil.com', 'hashed_password',
'Admin'),
    (2, 'Hamza', 'Hamza@gamil.com', 'hashed_password', 'Admin'),
    (3, 'Eliza', 'Eliza@gamil.com', 'hashed_password', 'Admin'),
    (4, 'Labar', 'Labar@gamil.com', 'hashed_password', 'Admin'),
    (5, 'Ali', 'Ali@gamil.com', 'hashed_password', 'Regular User'),
    (6, 'Ahmed', 'Ahmed@gamil.com', 'hashed_password', 'Regular User');


INSERT INTO Meetings (MeetingID, Title, Description, Date, Time, Location,
OrganizerID, Status)
    VALUES (1, 'Project Kickoff', 'Meeting to discuss project goals',
'2023-11-7', '20:00:00', 'Conference Room A', 1, 'Scheduled');




INSERT INTO Files (FileID, FileName, FilePath, MeetingID,
UploadedByUserID, UploadDateTime)
VALUES (1, 'example_file.txt', 'somewhere/uploads/example_file.txt', 1, 1,
'2023-11-10 15:00:00');

INSERT INTO Interactions (InteractionID, FileID, UserID, InteractionType,
InteractionContent, InteractionDateTime)
    VALUES (1, 1, 3, 'Comment', 'Great discussion!', '2023-11-10
14:30:00'),
           (2, 1, 4, 'Vote', 'Agree', '2023-11-10 14:30:00');
 -- Mohammed Al-zoraiki
```