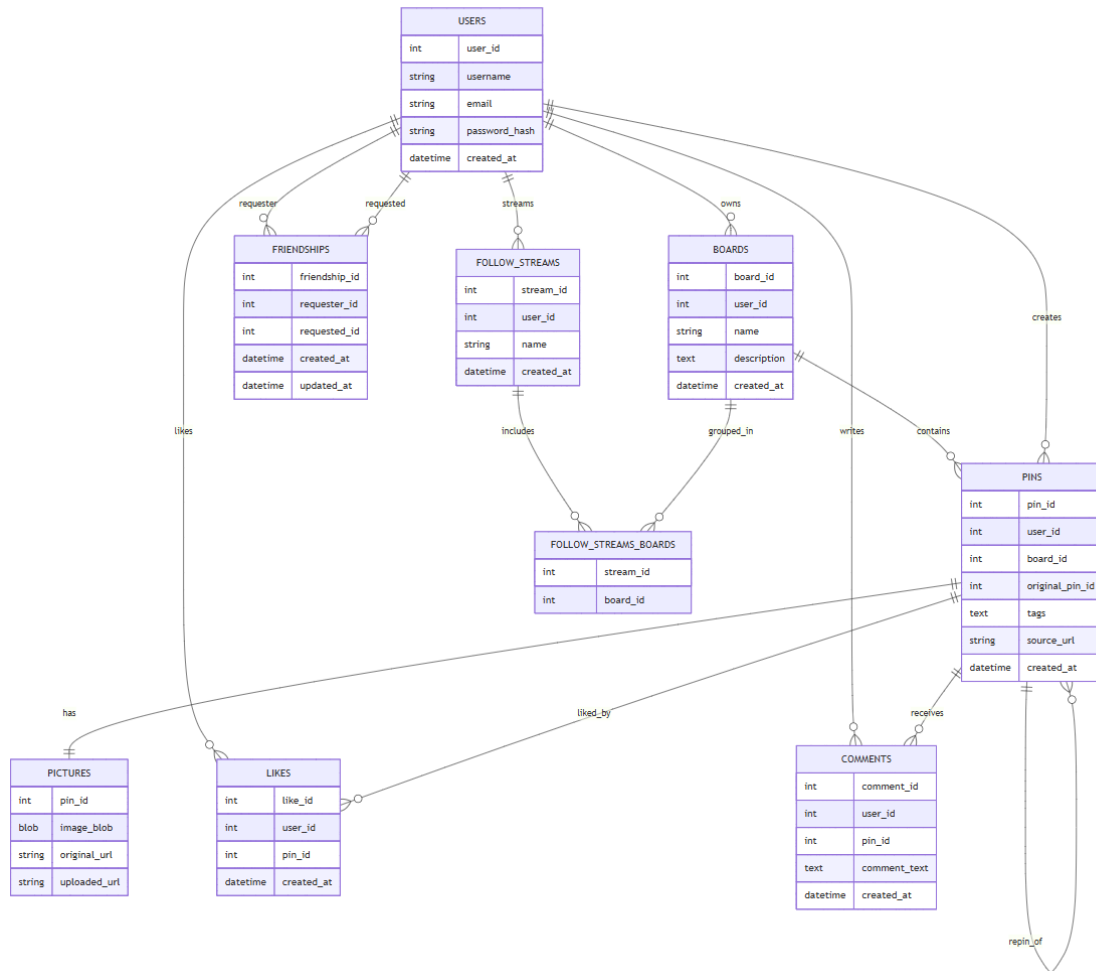


DB-Project-Part 1

ER diagram: (先用着，但建议换个新的)



Relational schema (keys & constraints) with database system:

Primary Key, *Foreign Key*

Users: user_id, username, email, password_hash, created_at;

Boards: board_id, user_id(Users(user_id)), name, description, created_at;

Pins: pin_id, user_id(Users(user_id)), board_id(Boards(board_id)),
original_pin_id(Pins(pin_id)), tags, source_url, created_at;

Pictures: pin_id(Pins(pin_id)), image_blob, original_url, uploaded_url;

Friendships: friendship_id, requester_id(Users(user_id)), requested_id(Users(user_id)), created_at, updated_at;

FollowStreams: stream_id, user_id(Users(user_id)), name, created_at;

FollowStreamsBoards: stream_id(FollowStreams(stream_id)),
board_id(Boards(board_id));

Like: like_id, user_id(Users(user_id)), pin_id(Pins(pin_id)), created_at;

Comments: comment_id, user_id(Users(user_id)), pin_id(Pins(pin_id)), comment_text, created_at;

-- Users Table

```
CREATE TABLE Users (  
    user_id INT AUTO_INCREMENT PRIMARY KEY,  
    username VARCHAR(50) UNIQUE NOT NULL,  
    email VARCHAR(100) UNIQUE NOT NULL,  
    password_hash VARCHAR(255) NOT NULL,  
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP  
);
```

-- Boards Table

```
CREATE TABLE Boards (  
    board_id INT AUTO_INCREMENT PRIMARY KEY,  
    user_id INT NOT NULL,  
    name VARCHAR(100) NOT NULL,  
    description TEXT,  
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,  
    FOREIGN KEY (user_id) REFERENCES Users(user_id) ON DELETE CASCADE  
);
```

-- Pins Table

```
CREATE TABLE Pins (  
    pin_id INT AUTO_INCREMENT PRIMARY KEY,  
    user_id INT NOT NULL,  
    board_id INT NOT NULL,
```

```

    original_pin_id INT,
    tags TEXT,
    source_url VARCHAR(255),
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES Users(user_id) ON DELETE CASCADE,
    FOREIGN KEY (board_id) REFERENCES Boards(board_id) ON DELETE CASCADE,
    FOREIGN KEY (original_pin_id) REFERENCES Pins(pin_id) ON DELETE CASCADE
);

```

-- Pictures Table

```

CREATE TABLE Pictures (
    pin_id INT PRIMARY KEY,
    image_blob BLOB NOT NULL,
    original_url VARCHAR(255),
    uploaded_url VARCHAR(255),
    FOREIGN KEY (pin_id) REFERENCES Pins(pin_id) ON DELETE CASCADE
);

```

-- Friendships Table

```

CREATE TABLE Friendships (
    friendship_id INT AUTO_INCREMENT PRIMARY KEY,
    requester_id INT NOT NULL,
    requested_id INT NOT NULL,
    status ENUM('pending', 'accepted', 'declined') DEFAULT 'pending',
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    updated_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON UPDATE
CURRENT_TIMESTAMP,
    UNIQUE (requester_id, requested_id),
    FOREIGN KEY (requester_id) REFERENCES Users(user_id) ON DELETE CASCADE,
    FOREIGN KEY (requested_id) REFERENCES Users(user_id) ON DELETE CASCADE
);

```

-- FollowStreams Table

```

CREATE TABLE FollowStreams (
    stream_id INT AUTO_INCREMENT PRIMARY KEY,
    user_id INT NOT NULL,
    name VARCHAR(100) NOT NULL,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES Users(user_id) ON DELETE CASCADE
);

```

-- FollowStreamBoards Table

```

CREATE TABLE FollowStreamBoards (
    stream_id INT NOT NULL,
    board_id INT NOT NULL,
    PRIMARY KEY (stream_id, board_id),
    FOREIGN KEY (stream_id) REFERENCES FollowStreams(stream_id) ON DELETE
CASCADE,
    FOREIGN KEY (board_id) REFERENCES Boards(board_id) ON DELETE CASCADE
);

```

```

-- Likes Table
CREATE TABLE Likes (
    like_id INT AUTO_INCREMENT PRIMARY KEY,
    user_id INT NOT NULL,
    pin_id INT NOT NULL,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    UNIQUE (user_id, pin_id),
    FOREIGN KEY (user_id) REFERENCES Users(user_id) ON DELETE CASCADE,
    FOREIGN KEY (pin_id) REFERENCES Pins(pin_id) ON DELETE CASCADE
);

-- Comments Table
CREATE TABLE Comments (
    comment_id INT AUTO_INCREMENT PRIMARY KEY,
    user_id INT NOT NULL,
    pin_id INT NOT NULL,
    comment_text TEXT NOT NULL,
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    FOREIGN KEY (user_id) REFERENCES Users(user_id) ON DELETE CASCADE,
    FOREIGN KEY (pin_id) REFERENCES Pins(pin_id) ON DELETE CASCADE
);

```

Pins and Repins: Repins reference the original pin_id. Deleting the original will delete all repins followed by it. Pin's tags stored as a comma-separated string in Pins for simplicity, enabling keyword search via LIKE.

Image Storage: Each image is stored once per original pin. Repins reference the same image blob. Follow streams are private, but boards/pins are public.