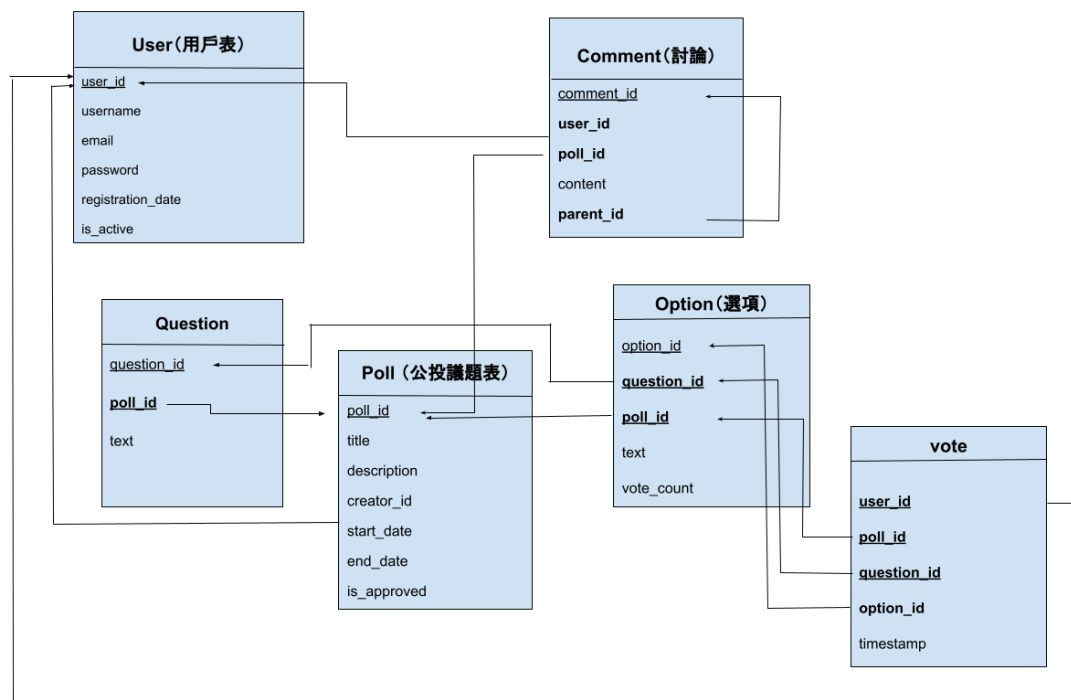
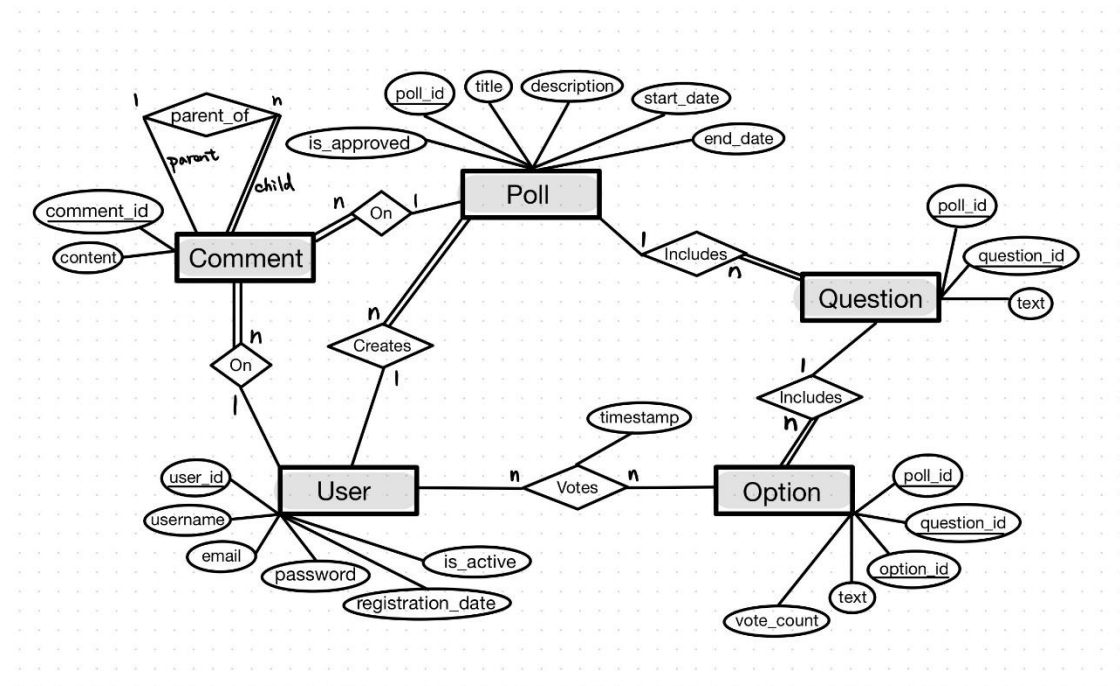


## 資料結構表



## SQL 說明及範例

### 1. 用戶註冊和登錄：

#### (1) 功能

- 用戶可以註冊帳戶，提供用戶名、電子郵件和密碼。
- 用戶可以使用電子郵件和密碼登錄帳戶。

#### (2) 查詢範例

- a. 用戶註冊：

```
INSERT INTO users (username, password, email, created_at)

VALUES ('john_doe', 'password123', 'john@example.com', NOW());
```

- b. 用戶登錄：

```
SELECT * FROM users

WHERE username = 'john_doe' AND password = 'password123';
```

- c. 檢查電子郵件地址是否已經被註冊

```
SELECT * FROM User

WHERE email = 'johndoe@example.com';
```

- d. 禁用用戶

```
UPDATE User

SET is_active = FALSE

WHERE user_id = 1;
```

## 2. 創建公投

### (1) 功能

- a. 已登錄的用戶可以創建新的公投，提供標題、描述、開始日期和結束日期。
- b. 創建公投時，用戶可以添加一個或多個問題，並為每個問題提供選項。
- c. 未審核過的公投可以刪除。

### (2) 查詢範例

- a. 創建新的公投：

```
INSERT INTO poll (title, description, start_date, end_date, user_id,
is_approved)

VALUES ('新公投標題', '新公投描述', '2022-01-01', '2022-01-31', 1, false);
```

- b. 添加問題和選項：

```
-- 先查詢新建公投的 ID
```

```
SELECT poll_id FROM poll WHERE title = '新公投標題';
```

-- 然後添加問題和選項

```
INSERT INTO question (poll_id, content)
```

```
VALUES (1, '問題一的內容');
```

```
INSERT INTO option (question_id, content)
```

```
VALUES (1, '選項一的內容');
```

```
INSERT INTO option (question_id, content)
```

```
VALUES (1, '選項二的內容');
```

c. 刪除未審核的公投

```
DELETE FROM poll WHERE is_approved = false;
```

### 3. 參與公投：

#### (1) 功能

- a. 用戶可以瀏覽公投列表，查看進行中的和已結束的公投。
- b. 用戶可以參與進行中的公投，對每個問題選擇適當的選項。

#### (2) 查詢範例

- a. 查詢進行中的公投：

```
SELECT * FROM Poll
```

```
WHERE start_date <= NOW() AND end_date >= NOW();
```

- b. 查詢已結束的公投

```
SELECT * FROM Poll
```

```
WHERE end_date < NOW();
```

- c. 查詢公投的問題和選項：

```
SELECT q.text AS question_text, o.text AS option_text
```

```
FROM Question q
```

```
JOIN Option o ON q.question_id = o.question_id
```

```
WHERE q.poll_id = 1;
```

- d. 創建新的投票：

```
INSERT INTO Vote (user_id, poll_id, question_id, option_id, timestamp)
```

```
VALUES (1, 1, 1, 2, NOW());
```

- e. 檢查用戶是否已經對某個問題投過票：

```
SELECT * FROM Vote
```

```
WHERE user_id = 1 AND poll_id = 1 AND question_id = 1;
```

- f. 更新現有的投票：

```
UPDATE Vote
```

```
SET option_id = 3, timestamp = NOW()
```

```
WHERE user_id = 1 AND poll_id = 1 AND question_id = 1;
```

4. 查看公投結果：

(1) 功能

- a. 用戶可以查看已結束的公投的結果，包括每個問題的選項投票數和百分比。

(2) 查詢範例

- a. 查詢每個問題的總投票數：

```
SELECT q.text AS question_text, SUM(o.vote_count) AS total_votes
```

```
FROM Question q
```

```
JOIN Option o ON q.question_id = o.question_id
```

```
WHERE q.poll_id = 1
```

```
GROUP BY q.question_id;
```

- b. 查詢每個選項的投票百分比：

```
SELECT q.text AS question_text, o.text AS option_text, o.vote_count,
```

```
CONCAT(ROUND(o.vote_count / SUM(o.vote_count) * 100, 2), '%') AS  
vote_percentage
```

FROM Question q

JOIN Option o ON q.question\_id = o.question\_id

WHERE q.poll\_id = 1;

5. 評論和討論：

(1) 功能

- a. 用戶可以對公投發表評論，與其他用戶進行互動和討論。
- b. 用戶可以查看公投已發表的評論。

(2) 查詢範例

- a. 創建新的評論：

```
INSERT INTO Comment (user_id, content, target_type, target_id,
parent_id)
```

```
VALUES (1, 'This is a comment', 'poll', 1, NULL);
```

- b. 查詢公投的評論：

```
SELECT c.comment_id, c.content, c.timestamp, u.username
```

```
FROM Comment c
```

```
JOIN User u ON c.user_id = u.user_id
```

```
WHERE c.target_type = 'poll' AND c.target_id = 1;
```

- c. 回覆評論：

```
INSERT INTO Comment (user_id, content, target_type, target_id,
parent_id)
```

```
VALUES (2, 'This is a reply', 'poll', 1, 1);
```

- d. 查詢評論及其回覆：

```
SELECT c1.comment_id, c1.content, c1.timestamp, u1.username,
```

```
       c2.comment_id AS reply_id, c2.content AS reply_content, c2.timestamp
AS reply_timestamp, u2.username AS reply_username
```

```
FROM Comment c1
```

```
JOIN User u1 ON c1.user_id = u1.user_id
```

```
LEFT JOIN Comment c2 ON c1.comment_id = c2.parent_id
```

```
LEFT JOIN User u2 ON c2.user_id = u2.user_id
```

```
WHERE c1.target_type = 'poll' AND c1.target_id = 1;
```

6. 個人資料和設置：

(1) 功能

- a. 用戶可以查看自己的個人資料，如用戶名、電子郵件等。
- b. 用戶可以修改帳戶設置，如密碼等。

(2) 查詢範例

- a. 查詢用戶的個人資料：

```
SELECT username, email, registration_date
```

```
FROM User
```

```
WHERE user_id = 1;
```

- b. 更新用戶的密碼：

```
UPDATE User
```

```
SET password = 'newpassword'
```

```
WHERE user_id = 1;
```

- c. 更新用戶的電子郵件地址：

```
UPDATE User
```

```
SET email = 'newemail@example.com'
```

```
WHERE user_id = 1;
```

- d. 檢查用戶名是否已經被使用：

```
SELECT * FROM User
```

```
WHERE username = 'JohnDoe';
```

- e. 檢查電子郵件地址是否已經被使用：

```
SELECT * FROM User
```

```
WHERE email = 'johndoe@example.com';
```

## 7. 管理員功能：

### (1) 功能

- a. 網站管理員可以審核和管理用戶創建的公投，如審核不適當的內容、刪除違規公投等。
- b. 網站管理員可以管理用戶帳戶，如禁用違規用戶。

### (2) 查詢範例

- a. 查詢待審核的公投：

```
SELECT * FROM Poll
```

```
WHERE is_approved = FALSE;
```

- b. 批准公投：

```
UPDATE Poll
```

```
SET is_approved = TRUE
```

```
WHERE poll_id = 1;
```

- c. 刪除公投：

```
DELETE FROM Poll
```

```
WHERE poll_id = 1;
```

- d. 查詢違規用戶：

```
SELECT * FROM User
```

```
WHERE is_active= FALSE;
```

- e. 禁用用戶：

```
UPDATE User
```

```
SET is_active= FALSE;
```

```
WHERE user_id = 1;
```

- f. 解禁用戶：

```
UPDATE User
```

```
SET is_active = TRUE
```

```
WHERE user_id = 1;
```