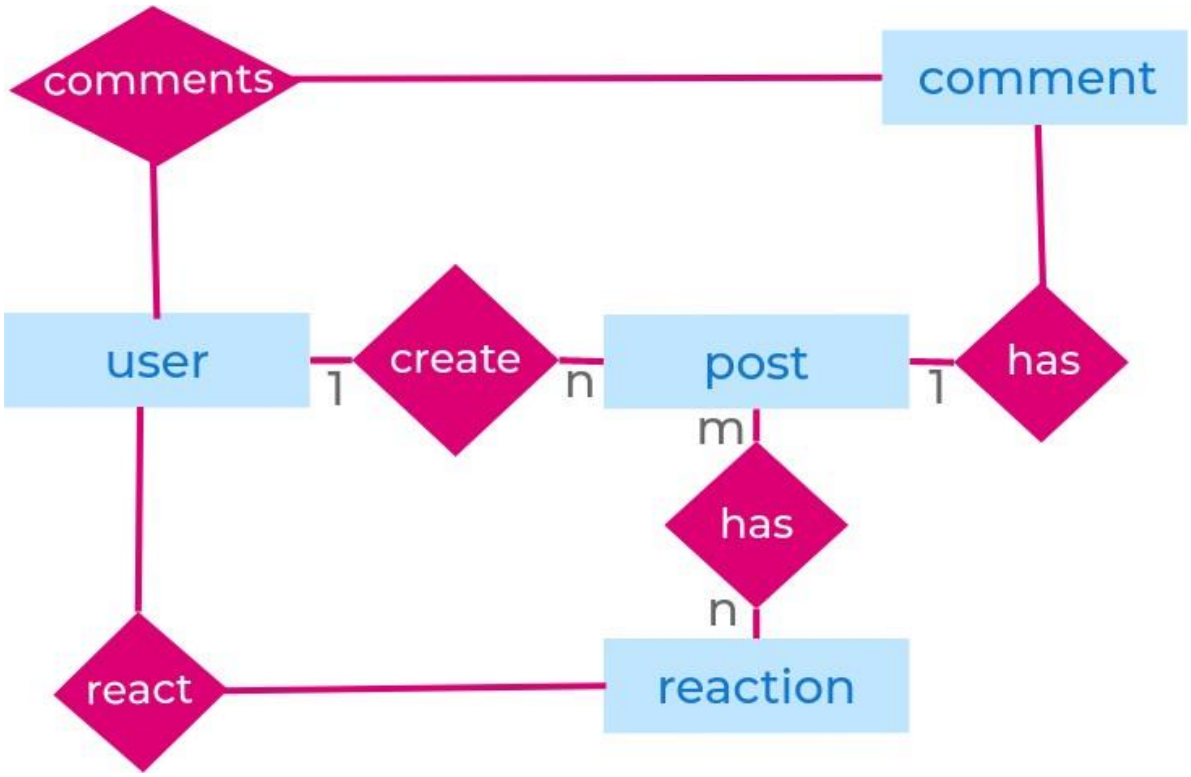
# Coding Practice - 03

In this practice set, let's apply Joins to fetch meaningful data from a sample database of social networking application.

**Database:**

The database contains user, post, comment and reaction tables.




- 1:n relation between user and comment
- 1:1 relation between user and reaction
- 1:n relation between post and comment

**Note**

You can assume that a user may or may not post on the social media platform, i.e., a user can have zero or many posts. Also, a post can have zero or many comments or reactions. So, do take care of this detail while writing various queries on the database, especially, when deciding on INNER JOIN / LEFT JOIN.

Refer the tables in the code playground for a better understanding of the database.

## QUESTIONS

1. Fetch all the posts along with user details.

   **Note:**

   Sort the posts in the descending order of

posted_at

**Expected Output Format:**

| name | age | post_id | content | posted_at |
|---|---|---|---|---|
| ... | ... | ... | ... | ... |

**SELECT user.name, user.age, post.post_id, post.content, post.posted_at FROM user INNER JOIN post ON user.user_id = post.posted_by ORDER BY posted_at DESC;**

2. Fetch the 5 recent posts posted by “James Williams”.

**Note:**

- Condiser that the name of the user is “James Williams”
- Get the recent posts based on `posted_at` column in post table

**Expected Output Format:**

| name | age | post_id | content | posted_at |
|---|---|---|---|---|
| ... | ... | ... | ... | ... |

**SELECT user.name, user.age, post.post_id, post.content, post.posted_at FROM user INNER JOIN post ON user.user_id = post.posted_by WHERE user.name = 'James Williams' ORDER BY posted_at DESC LIMIT 5;**

3. Fetch the total number of posts posted by “James Williams” till date as

posts_count

**Note:**

- Condiser that the name of the user is “James Williams”

**Expected Output Format:**

| posts_count |
|---|
| ... |

SHOW ANSWER

**SELECT count(post.post_id) AS posts_count FROM user INNER JOIN post ON user.user_id = post.posted_by WHERE user.name = 'James Williams';**

4. For every user, fetch the total number of posts posted so far as

posts_count

**Note:**

- If a user does not publish any posts, keep the posts_count as 0.

- Sort the output in the descending order of posts_count, and then in the ascending order of user_id.

**Expected Output Format:**

| user_id | user_name | posts_count |
|---|---|---|
| ... | ... | ... |

**SELECT user.user_id, user.name AS user_name, count(post.post_id) AS posts_count FROM user LEFT JOIN post ON user.user_id = post.posted_by GROUP BY user_name, user.user_id ORDER BY posts_count DESC, user.user_id ASC;**

5. Get all the users details who posted at least 2 posts.

**Note:**

- Sort the output in the descending order of posts_count, and then in the ascending order of user_id.

**Expected Output Format:**

| user_id | user_name | age | gender | posts_count |
|---|---|---|---|---|
| ... | ... | ... | ... | ... |

**SELECT user.user_id, user.name AS user_name, user.age, user.gender, count(post.post_id) AS posts_count FROM user LEFT JOIN post ON user.user_id = post.posted_by GROUP BY user_name, user.user_id HAVING posts_count >= 2 ORDER BY posts_count DESC, user.user_id ASC;**

6. Fetch the active users in January 2021.

**Note:**

- Consider the users as active, if they posted at least 2 posts in January 2021.
- Sort the output in the descending order of posts_count, and then in the ascending order of user_id.

**Expected Output Format:**

| user_id | user_name | posts_count |
|---|---|---|
| ... | ... | ... |

**SELECT user.user_id, user.name AS user_name, count(post.post_id) AS posts_count FROM user LEFT JOIN post ON user.user_id = post.posted_by WHERE strftime("%Y", posted_at) = '2021' AND strftime("%m", posted_at) = '01' GROUP BY user_name, user.user_id HAVING posts_count >= 2 ORDER BY posts_count DESC, user.user_id ASC;**

7. For each post, get the total number of positive reactions as

positive_reactions_count

**Note:**

- Consider the reaction_type "LIKE", "LIT", "WOW" and "LOVE" as positive reactions.
- If the post does not have any positive reactions, keep thepositive_reactions_count as 0.
- Sort the output in the descending order of positive_reactions_count , and then in the ascending order of post_id .

**Expected Output Format:**

| post_id | content | posted_by | positive_reactions_count |
|---|---|---|---|
| ... | ... | ... | ... |

**SELECT post.post_id, post.content, post.posted_by, count(CASE WHEN reaction.reaction_type IN ('LIKE', 'LIT', 'WOW', 'LOVE') THEN 1 ELSE NULL END) AS positive_reactions_count FROM post LEFT JOIN reaction ON reaction.post_id = post.post_id GROUP BY post.post_id ORDER BY positive_reactions_count DESC, post.post_id;**

8. For each post, get the total number of positive reactions and negative reactions as

   positive_reactions_count and negative_reactions_count respectively.

   **Note:**

   - Consider the reaction_type "LIKE", "LIT", "WOW" and "LOVE" as positive reactions, and "DISLIKE" as a negative reaction.
   - If the post does not have positive_reactions, keep the positive_reactions_count as 0.
   - If the post does not have any negative_reactions, keep the negative_reactions_count as 0.
   - Sort the output in the ascending order of post_id.

   **Expected Output Format:**

| post_id | content | positive_reactions_count | negative_reactions_count |
|---|---|---|---|
| ... | ... | ... | ... |

**SELECT post.post_id, post.content, count(CASE WHEN reaction.reaction_type IN ('LIKE', 'LIT', 'WOW', 'LOVE') THEN 1 ELSE NULL END) AS positive_reactions_count, count(CASE WHEN reaction.reaction_type IN ('DISLIKE') THEN 1 ELSE NULL END) AS negative_reactions_count FROM post LEFT JOIN reaction ON reaction.post_id = post.post_id GROUP BY post.post_id ORDER BY post.post_id;**

9. A general manager from the social networking site would like to review the content in all the posts that have more negative reactions over positive reactions.

   **Note:**

   - Consider the reaction_type "LIKE", "LIT", "WOW" and "LOVE" as positive reactions, and "DISLIKE" as a negative reaction.
   - Output must contain rows in the ascending order of post_id.

   **Expected Output Format:**

| post_id | content | positive_reactions_count | negative_reactions_count |
|---|---|---|---|
| .... | .... | .... | .... |

**SELECT post.post_id, post.content, count(CASE WHEN reaction.reaction_type IN ('LIKE', 'LIT', 'WOW', 'LOVE') THEN 1 ELSE NULL END) AS positive_reactions_count, count(CASE WHEN reaction.reaction_type IN ('DISLIKE') THEN 1 ELSE NULL END) AS negative_reactions_count FROM post INNER JOIN reaction ON reaction.post_id = post.post_id GROUP BY post.post_id HAVING positive_reactions_count < negative_reactions_count ORDER BY post.post_id;**

10. Get all the comment details for the post with post_id = 5.

Note:

- Output must contain comments in the ascending order of commented_at.

Expected Output Format:

| comment_id | comment_content | commented_by | commented_at |
|---|---|---|---|
| ... | ... | ... | ... |

**SELECT comment_id, comment_content, commented_by, commented_at FROM COMMENT WHERE post_id = 5 ORDER BY commented_at;**

11. Fetch all the posts posted by the user with user_id = 98, along with the comments for the posts.

Note:

- Output must contain posts in the ascending order of post_id, and then in the descending order of commented_at.
- If there is no comment for a post, keep the comment_id and comment_content as NULL.

Expected Output Format:

| post_id | posted_by | content | posted_at | comment_id | comment |
|---|---|---|---|---|---|

**SELECT t.post_id AS post_id, t.posted_by AS posted_by, t.content AS content, t.posted_at AS posted_at, t.comment_id AS comment_id, t.comment_content AS comment_content, t.commented_at AS commented_at FROM (post LEFT JOIN COMMENT ON COMMENT.post_id = post.post_id) AS T LEFT JOIN user ON user.user_id = t.posted_by WHERE user_id = 98 ORDER BY post.post_id ASC, COMMENT.commented_at DESC;**

12. Fetch all the posts and their comments count, for the posts posted by the user with user_id = 98.

Note:

- Output must contain posts in the ascending order of post_id.
- If there is no post for a user, keep the content, posted_at values as NULL.
- If there is no comment for a post, keep the comments_count values as 0.

Expected Output Format:

| post_id | posted_by | content | posted_at | comments_count |
|---|---|---|---|---|
| ... | ... | ... | ... | ... |

**SELECT t.post_id AS post_id, t.posted_by AS posted_by, t.content AS content, t.posted_at AS posted_at, count(t.comment_id) AS comments_count FROM (post LEFT JOIN COMMENT ON COMMENT.post_id = post.post_id) AS T LEFT JOIN user ON user.user_id = t.posted_by WHERE user_id = 98 GROUP BY post.post_id ORDER BY post.post_id ASC;**

13. For each user, get all the posts posted, and the total comments count for each post, along with user_details.

Note:

- Sort the output in the ascending order of user_id, and then in the ascending order of post_id.
- If there is no post for a user, keep the content, posted_at values as NULL
- If there is no comment for a post, keep the comments_count value as 0.

Expected Output Format:

| user_id | name | post_id | content | posted_at | comment |
|---|---|---|---|---|---|
| ... | ... | ... | ... | ... | ... |

**SELECT user_id AS user_id, t.name AS name, t.post_id AS post_id, t.content AS content, t.posted_at AS posted_at, count(COMMENT.comment_id) AS comments_count FROM (user LEFT JOIN post ON user.user_id = post.posted_by) AS T LEFT JOIN COMMENT ON COMMENT.post_id = t.post_id GROUP BY post.post_id, user.user_id ORDER BY user.user_id ASC, post.post_id ASC;**

14. For each user, get all the posts posted, and the total reactions count for each post, along with user_details.

Note:

Sort the output in the ascending order of user_id, and then in the ascending order of post_id.If there is no post for a user, keep the content, posted_at as NULL.

If there is no reaction for a post, keep the reactions_count as 0.

Expected Output Format:

| user_id | name | post_id | content | posted_at | Reactions_count |
|---|---|---|---|---|---|
| ... | ... | ... | ... | ... | ... |

**SELECT t.user_id AS user_id, t.name AS name, t.post_id AS post_id, t.content AS content, t.posted_at AS posted_at, count(reaction.reaction_id) AS reactions_count FROM (user LEFT JOIN post ON user.user_id = post.posted_by) AS T LEFT JOIN reaction ON reaction.post_id = t.post_id GROUP BY post.post_id, user.user_id ORDER BY user.user_id ASC, post.post_id ASC;**