

Q1. Find all the ongoing/unfinished steps. Display the title of these steps and full names of the users who are taking these steps.

```
SELECT DISTINCT title, CONCAT(first_name, ' ', last_name) AS user_full_name
FROM step_taken
INNER JOIN user ON userID = user_id
INNER JOIN step ON stepID = step_id
WHERE when_finished IS NULL;
```

	title	user_full_name
▶	Being with difficulty	Alice Smith
	Doing and being	Alice Smith
	Compassion for others	Dan Williams
	Introduction to depression	Dan Williams
	Introduction to mindfulness	Eve Brown
	Introduction to depression	Eve Brown
	Introduction to mindfulness	Frank Jones
	Rumination	Heidi Taylor
	Doing and being	Heidi Taylor
	Triggers and warning signs	Heidi Taylor

23 rows returned

Q2. List the themes and the number of the steps associated with these themes. Display the theme name and number of associated steps sorted in descending order.

```
SELECT name, COUNT(step_id) AS number
FROM step_theme RIGHT JOIN theme ON themeID = theme_id
GROUP BY name
ORDER BY number DESC;
```

	name	number
▶	Anxiety	13
	Depression	12
	Mindfulness	10
	Social Anxiety	10
	Your Strengths	5
	Self Compassion	4
	Meditation	0

7 rows returned

Q3. Which step is the least popular based on the average rating given by users? Display the title and ID of the step and its average rating (formatted to 2 decimal places). Only include those steps which are rated by at least one user.

```
SELECT DISTINCT title, stepID, ROUND(AVG(rating), 2) AS rating_value
FROM step_taken  INNER JOIN step ON stepID = step_id
GROUP BY stepID
HAVING COUNT(stepID) > 0
ORDER BY rating_value
LIMIT 1;
```

	title	stepID	rating_value
1	Strengths for work and study	139	1.00

1 rows returned

Q4. Find the steps that are taken the greatest number of times. Display the ID, title and count of the times the step has been taken. In case of ties, display all the steps with the same number of times taken.

```
SELECT stepID, title, COUNT(*) AS times
FROM step_taken INNER JOIN step ON stepID = step_id
GROUP BY stepID
HAVING times =
    ( SELECT MAX(times)
      FROM   ( SELECT COUNT(*) AS times
                FROM step_taken
                GROUP BY step_id) AS greatest_steps);
```

	stepID	title	times
▶	122	Introduction to depression	11
	141	Doing and being	11

2 rows returned

Q5. Who is the most followed user between age of 15 and 18? Display the age (as an integer), first name, and last name of such user along with the number of followers.

```
SELECT TIMESTAMPDIFF(YEAR, DOB, CURDATE()) AS age, first_name, last_name, COUNT(*) AS followers
FROM user_follow INNER JOIN user ON userID = followed_user_id
GROUP BY userID
HAVING 14 < age < 19 AND followers =
(SELECT MAX(followers)
FROM (SELECT TIMESTAMPDIFF(YEAR, DOB, CURDATE()) AS age, COUNT(following_user_id) AS followers
      FROM user_follow INNER JOIN user ON userID = followed_user_id
      GROUP BY userID
      HAVING 14 < age < 19) following_num);
```

	age	first_name	last_name	followers
▶	17	Grace	Wilson	7

1 rows returned

Q6. Find all steps that are never taken or are taken exactly once? Display the id and title of these steps along with the indication how many times the step has been taken (0 or 1).

```
SELECT stepID, title, COUNT(step_id) AS times_being_taken
FROM step LEFT JOIN step_taken ON stepID = step_id
GROUP BY stepID
HAVING times_being_taken < 2;
```

	stepID	title	times_being_taken
▶	54	Body and breath	0
	55	Tuning in	0
	56	Anchor yourself	1
	57	Everyday mindfulness	0
	67	Mindful movement	1
	68	Mindful emotions	0
	69	Mindful thoughts	0
	70	Heartfulness	1
	113	Things that go bump in the night	0
	116	The banshee	0

20 rows returned

Q7. Find users who started taking step ‘*Doing and being*’ after they had started the step ‘*Panic*’ but have never completed ‘*Panic*’. Display the user ID, first name and last name.

```
SELECT DISTINCT userID, first_name, last_name
FROM (  SELECT user_id, when_started AS pa_time
        FROM step_taken  INNER JOIN step ON step_id = stepID
        WHERE title = 'Panic' AND when_finished IS NULL) panic
NATURAL JOIN
(  SELECT user_id, when_started AS dab_time
    FROM step_taken  INNER JOIN step ON step_id = stepID
    WHERE title = 'Doing and being') doing_and_being
INNER JOIN  user ON userID = user_id
WHERE TIMEDIFF(pa_time,dab_time) < 0;
```

	userID	first_name	last_name
▶	11	Kath	Anderson
	12	Lee	Thomas
	23	Arlie	Lancaster

3 rows returned

Q8. What finished steps were completed both by a user with first name "Alice" and a user with first name "Bob"? Display the ID and title of such steps along with the number of times each user has completed these steps.

```
SELECT *
FROM (SELECT step_id, title, COUNT(step_id) AS Bob
      FROM step_taken
      INNER JOIN user ON userID = user_id
      INNER JOIN step ON stepID = step_id
      WHERE first_name = 'Bob' AND when_finished IS NOT NULL
      GROUP BY step_id) bob
NATURAL JOIN
(SELECT step_id, title, COUNT(step_id) AS Alice
      FROM step_taken
      INNER JOIN user ON userID = user_id
      INNER JOIN step ON stepID = step_id
      WHERE first_name = 'Alice' AND when_finished IS NOT NULL
      GROUP BY step_id) alice
GROUP BY step_id;
```

	step_id	title	Bob	Alice
▶	136	Coping with strengths	1	1

1 rows returned



Q9. Find the top two users with the highest number of interests. For those two users, find out the common steps taken by both of them. Display the titles of the common steps they have taken and the number of times those steps are taken by each user.

```
SELECT *
FROM (SELECT title, COUNT(*) AS FIRST_ONE
      FROM step_taken  INNER JOIN step ON stepID = step_id
      NATURAL JOIN (SELECT user_id
                    FROM user_interest
                    GROUP BY user_id
                    ORDER BY COUNT(interest_id) DESC
                    LIMIT 1) first_user
      GROUP BY step_id) top_1
NATURAL JOIN (SELECT title, COUNT(*) AS SECOND_ONE
              FROM step_taken  INNER JOIN step ON stepID = step_id
              NATURAL JOIN (SELECT user_id
                            FROM (SELECT ROW_NUMBER() OVER () AS id, user_id
                                FROM (SELECT user_id
                                      FROM user_interest
                                      GROUP BY user_id
                                      ORDER BY COUNT(interest_id) DESC
                                      LIMIT 2) top2) assigned_user
                            WHERE id = 2) second_user
              GROUP BY step_id) top_2;
```

	title	FIRST_ONE	SECOND_ONE
►	Navigating physical symptoms	1	1
	Chameleon dreams	1	1
	Dark skies, bright stars	1	1
	Beautiful broken things	1	1
	What ifs	1	1
	Perfectly rolled	1	1

6 rows returned

Q10. For each user taking a step, calculate how many other users have taken the same step. We are only interested in the cases where the step is performed by at least 5 other users. Display the user ID, number of other users (at least 5 other users) who are taking the same step and the title of the taken step.

```
SELECT DISTINCT user_id AS ID, (other_num - 1) AS other_users, title
FROM step_taken
      INNER JOIN step ON step_id = stepID
      NATURAL JOIN (SELECT step_id, COUNT(DISTINCT user_id) AS other_num, title
                    FROM step_taken  INNER JOIN step ON step_id = stepID
                    GROUP BY step_idHAVING other_num > 6) count_others
ORDER BY ID;
```

	ID	other_users	title
▶	1	6	Doing and being
	2	6	Doing and being
	8	6	Doing and being
	11	6	Doing and being
	12	6	Doing and being
	17	6	Doing and being
	23	6	Doing and being

7 rows returned