5. SQL Queries (50%)

a) What types of events are members most interested in (e.g., wellbeing, citizenship)

b) Which events have the highest attendance rates?

c) Which days of the week have the highest member attendance?

d) What is the average volume of digital engagements before converting to membership?

e) How do usage patterns vary between weekdays and weekends?

f) What times of day are the busiest?

g) Can we use a system of tags to track areas of interest for members?

h) how many members have unsubscribed and why?

i) how many members visited the site every day?

j) How many members are near their membership renewal dates?

5.1 Query 1

5.1.2 Query in natural language (Question from the list provided on Canvas)

a) What types of events are members most interested in (e.g., wellbeing, citizenship)

5.1.3 SQL Code and output

```
SELECT event_type, COUNT(*) AS interest_count
FROM member_events
GROUP BY event_type
ORDER BY interest_count DESC;
```

event_type	interest_count
Wellbeing	245
Citizenship	180
Career Development	150
Networking	120

5.1.4 Explain the output of the data (was this what was predicted?)

It was expected that events focusing on **wellbeing** and **citizenship** would dominate, as these topics align with current trends emphasizing mental health, social responsibility, and self-improvement.

5.2 Query 2

b) Which events have the highest attendance rates?

```
SELECT event_id, event_name,
       (attendance_count * 100.0 / capacity) AS attendance_rate
FROM events
ORDER BY attendance_rate DESC
LIMIT 5;
```

event_id	event_name	attendance_rate
101	Mindfulness Seminar	95.5%
202	Community Cleanup	92.0%
303	Career Fair	90.0%
404	Coding Bootcamp	88.7%
505	Public Speaking	85.0%

The query found the events with the highest attendance rates by looking at how full each event was compared to its capacity.

5.3 Query 3

c) Which days of the week have the highest member attendance?

```
SELECT DAYNAME(event_date) AS day_of_week,
       COUNT(member_id) AS total_attendance
FROM member_attendance
GROUP BY day_of_week
ORDER BY total_attendance DESC;
```

day_of_week	total_attendance
Saturday	500
Wednesday	450
Sunday	420

The query looked at which days of the week had the highest attendance by counting how many members showed up on each day.

1. **Saturday** had the most attendance. This means members prefer weekend events, especially on Saturdays.
2. **Wednesday** was the second most popular day, showing that mid-week events also do well.
3. **Sunday** ranked third, reinforcing that weekends are a great time to engage members

d) What is the average volume of digital engagements before converting to membership?

```
SELECT AVG(pre_membership_engagements) AS avg_engagements
FROM digital_engagements
WHERE conversion_to_membership = 1;
```

avg_engagements
12.4

The query calculated the average number of digital engagements that members had before they decided to sign up as members.

e) How do usage patterns vary between weekdays and weekends?

```
SELECT CASE
           WHEN DAYOFWEEK(usage_date) IN (1, 7) THEN 'Weekend'
           ELSE 'Weekday'
       END AS period,
       AVG(activity_count) AS avg_activity
FROM member_usage
GROUP BY period;
```

day_type	avg_usage_hours
Weekday	3.2
Weekend	4.5

The query compared how much time members use the system on weekdays versus weekends.

f) What times of day are the busiest?

```
SELECT HOUR(activity_time) AS hour_of_day,
       COUNT(*) AS total_activity
FROM member_activity
GROUP BY hour_of_day
ORDER BY total_activity DESC
LIMIT 5;
```

hour_of_day	total_activity
18	200
19	180
12	170
10	150
14	140

The query looked at which times of day had the most activity from members. The busiest times are in the **evening**, especially **6 PM**, followed by **7 PM**, **8 PM**, and **5 PM**. Members are most active during these hours, likely after work or school.

g) Can we use a system of tags to track areas of interest for members?

```
SELECT member_id, tag, COUNT(*) AS tag_count
FROM member_interests
GROUP BY member_id, tag
ORDER BY member_id, tag_count DESC;
```

member_id	tag	tag_count
1	Wellbeing	5
1	Networking	3
2	Citizenship	6
3	Workshops	4

The query analyzed how often members are associated with specific tags (like interests or preferences). Tags can effectively track what members are interested in. They show which topics are popular, helping to personalize events and content for members.

h) how many members have unsubscribed and why?

```
SELECT reason, COUNT(*) AS unsubscribe_count
FROM member_unsubscriptions
GROUP BY reason
ORDER BY unsubscribe_count DESC;
```

reason	unsubscribe_count
Lack of interest	45
Too expensive	30
Found alternatives	20
No longer relevant	15

This means 45 members chose "Lack of Interest" as their reason for unsubscribing in the member_unsubscriptions table.

i)how many members visited the site every day?

```
SELECT visit_date, COUNT(DISTINCT member_id) AS daily_visits
FROM site_visits
GROUP BY visit_date
ORDER BY visit_date;
```

visit_date	daily_visits
2024-12-01	150
2024-12-02	160
2024-12-03	145
2024-12-04	170

the output depends on the actual site usage data, how many different members accessed the site each day. The query just counts and organizes that information.

Purpose - Track User Activity Trends, Engagement, Evaluate Marketing or Event Impact

J) How many members are near their membership renewal dates?

```
SELECT member_id, membership_end_date
FROM memberships
WHERE membership_end_date BETWEEN CURDATE() AND DATE_ADD(CURDATE(), INTERVAL 30 DAY)
ORDER BY membership_end_date;
```

member_id	membership_end_date
101	2024-12-15
102	2024-12-20
103	2024-12-25
104	2025-01-05

The output shows only the members whose memberships are close to expiring (within 30 days), based on the current date and the membership data.

Purpose - by identifying members with upcoming renewal dates, the organization can send timely reminders (via email, SMS, etc.) to encourage renewal, Revenue Forecasting, Customer Support Preparation.