GROUP 14

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Attached below are some of the SQL queries that we wrote, which will be essential for our website and its functionality. We made some adjustments to the structure of our tables, so we will also be submitting a file with the updated SQL table definitions. Along with the queries, we have attached images showing the results of these queries based on the sample data we currently have. Throughout our work, we used various types of SQL queries, including JOIN, ON, GROUP BY, HAVING, and others, to ensure our database efficiently supports the features of the website.

SQL Queries:

1. Shows the name and details of activities that **Nordmetall College organizes**:
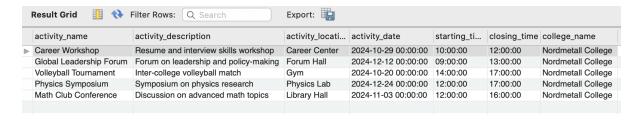
SELECT
    a.activity_name,
    a.activity_description,
    a.activity_location,
    a.activity_date,
    a.starting_time,
    a.closing_time,
    ca.college_name
FROM
    Activity a
JOIN
    College_activities ca ON a.activity_id = ca.activity_id
WHERE ca.college_name = 'Nordmetall College';

activity_name	activity_description	activity_locati...	activity_date	starting_ti...	closing_time	college_name
Career Workshop	Resume and interview skills workshop	Career Center	2024-10-29 00:00:00	10:00:00	12:00:00	Nordmetall College
Global Leadership Forum	Forum on leadership and policy-making	Forum Hall	2024-12-12 00:00:00	09:00:00	13:00:00	Nordmetall College
Volleyball Tournament	Inter-college volleyball match	Gym	2024-10-20 00:00:00	14:00:00	17:00:00	Nordmetall College
Physics Symposium	Symposium on physics research	Physics Lab	2024-12-24 00:00:00	12:00:00	17:00:00	Nordmetall College
Math Club Conference	Discussion on advanced math topics	Library Hall	2024-11-03 00:00:00	12:00:00	16:00:00	Nordmetall College

2. Shows **club activities** along with **the club to which each activity belongs**.

SELECT
    a.activity_name,
    a.activity_description,
    a.activity_location,
    a.activity_date,
    a.starting_time,
    a.closing_time,
    cl.club_name
FROM
    Activity a
JOIN
    Club_activities cl ON a.activity_id = cl.activity_id

activity_name	activity_description	activity_location	activity_date	starting_ti...	closing_time	club_name
Hackathon 2024 - Club Edition	Coding event for club members	Lab 101	2024-10-16 00:00:00	09:00:00	18:00:00	Constructor Volleyball Club
AI Club Hackathon	AI-focused hackathon for club members	Computer Lab	2024-12-08 00:00:00	09:00:00	18:00:00	AI Enthusiasts Club
Math Club Puzzle Challenge	Solve complex math puzzles	Room 101	2024-12-10 00:00:00	10:00:00	12:00:00	Math Puzzle Club
Robotics Club Demo	Demonstration of club-built robots	Engineering Lab	2024-12-15 00:00:00	14:00:00	17:00:00	Constructor Robotics Club
STEM Club Coding Contest	Programming contest for club members	Room 204	2024-12-20 00:00:00	09:00:00	12:00:00	Constructor STEM Club
Finance Club Case Study	Analysis of financial case studies	Business Lab	2024-12-22 00:00:00	11:00:00	13:30:00	Finance and Investment Club
Entrepreneurship Talk	Talk by successful entrepreneur	Business Hall	2024-12-25 00:00:00	10:00:00	12:00:00	Entrepreneurs Club
Science Club Fair	Annual science fair showcasing projects	Exhibition Hall	2024-12-30 00:00:00	09:00:00	17:00:00	Science Club Fair
Cultural Exchange Program	Event to promote cultural exchange	International Lounge	2025-01-05 00:00:00	12:00:00	18:00:00	Cultural Exchange Club
Startup Pitching Contest	Pitch contest for aspiring entrepreneurs	Pitch Lab	2025-01-07 00:00:00	14:00:00	18:00:00	Startup Innovators Club
Engineering Club Showcase	Showcase of engineering projects	Innovation Center	2025-01-12 00:00:00	11:00:00	16:00:00	Innovation Engineers Club
Club STEM Workshop	Special workshop for club members	Auditorium	2024-11-02 00:00:00	10:00:00	14:00:00	Constructor STEM Club
Debate Club Weekly Meeting	Debate Club regular session	Room 102	2024-10-19 00:00:00	16:00:00	18:00:00	Constructor Debate Club
Robotics Club Expo	Robotics display for club members	Engineering Lab	2024-11-11 00:00:00	09:00:00	17:00:00	Constructor Robotics Club

3. Shows **college activities** managed by **college leaders**

SELECT
    a.activity_name,
    a.activity_description,
    cl.leader_name,
    cl.leader_surname
FROM
    Activity a
JOIN
    Manages m ON a.activity_id = m.activity_id
JOIN
    College_leader cl ON m.college_leader_id = cl.college_leader_id

activity_name	activity_description	leader_name	leader_surname
Hackathon 2024	Coding competition	John	Doe
Artificial Intelligence Conference	Conference on AI trends and development	John	Doe
Chemistry Lab Practical	Advanced chemistry lab practical	John	Doe
Global Leadership Forum	Forum on leadership and policy-making	Jane	Smith
Volleyball Tournament	Inter-college volleyball match	Jane	Smith
Business Innovation Summit	Summit on business innovation	Emily	Davis
Karaoke Night	Fun karaoke event	Emily	Davis
Tech Startup Panel	Panel discussion on tech startups	Michael	Brown
STEM Workshop	Hands-on STEM activities	Michael	Brown
Artificial Intelligence Conference	Conference on AI trends and development	Michael	Adams
Physics Symposium	Symposium on physics research	Michael	Adams
Global Leadership Forum	Forum on leadership and policy-making	Anna	Clark
Environmental Science Talk	Talk on environmental sustainability	Anna	Clark
Business Innovation Summit	Summit on business innovation	Diana	Lee
Creative Writing Workshop	Workshop on creative writing techniques	Diana	Lee
Tech Startup Panel	Panel discussion on tech startups	Paul	Stevens
Human Rights Discussion	Discussion on global human rights issues	Paul	Stevens
Physics Symposium	Symposium on physics research	Rachel	Jones
Music Therapy Session	Exploring music as therapy	Rachel	Jones

4. Shows **college activities** and the colleges' names where those activities occur.

SELECT a.activity_name, ca.college_name
FROM Activity a, College_activities ca
Where a.activity_id = ca.activity_id

activity_name	college_name
Hackathon 2024	Mercator College
Career Workshop	Nordmetall College
Artificial Intelligence Conference	Mercator College
Global Leadership Forum	Nordmetall College
Business Innovation Summit	Krupp College
Tech Startup Panel	C3 College
Volleyball Tournament	Nordmetall College
Physics Symposium	Nordmetall College
Environmental Science Talk	Mercator College
Creative Writing Workshop	Krupp College
Human Rights Discussion	C3 College
Music Therapy Session	Krupp College
Chemistry Lab Practical	Mercator College
Karaoke Night	Krupp College
STEM Workshop	Mercator College
Debate Club Meeting	C3 College
Math Club Conference	Nordmetall College
Robotics Expo	Krupp College
Social Night	Mercator College
Basketball Tournament	C3 College

5. Shows the **number** of activities for **each college.**

SELECT college_name, COUNT(activity_id) as activitycount
FROM College_activities
GROUP BY college_name;

college_name	activitycount	
▶ Mercator College	6	
Nordmetall College	5	
Krupp College	5	
C3 College	4	

6. It shows **all activities** on Campus and displays the corresponding **organization responsible** for each activity.

SELECT
    a.activity_name,
    COALESCE(cl.club_name, c.college_name) AS Organizer
FROM
    Activity a
LEFT JOIN Club_activities cl ON a.activity_id = cl.activity_id
LEFT JOIN College_activities c ON a.activity_id = c.activity_id;

activity_name	Organizer
Volleyball Tournament	Nordmetall College
Tech Startup Panel	C3 College
STEM Workshop	Mercator College
STEM Club Coding Contest	Constructor STE...
Startup Pitching Contest	Startup Innovator...
Social Night	Mercator College
Science Club Fair	Science Club Fair
Robotics Expo	Krupp College
Robotics Club Expo	Constructor Robo...
Robotics Club Demo	Constructor Robo...
Physics Symposium	Nordmetall College
Music Therapy Session	Krupp College
Math Club Puzzle Challenge	Math Puzzle Club
Math Club Conference	Nordmetall College
Karaoke Night	Krupp College
Human Rights Discussion	C3 College
Hackathon 2024 - Club Edition	Constructor Volle...
Hackathon 2024	Mercator College
Global Leadership Forum	Nordmetall College
Finance Club Case Study	Finance and Inve...
Environmental Science Talk	Mercator College
Entrepreneurship Talk	Entrepreneurs Club
Engineering Club Showcase	Innovation Engin...
Debate Club Weekly Meeting	Constructor Deba...
Debate Club Meeting	C3 College
Cultural Exchange Program	Cultural Exchang...
Creative Writing Workshop	Krupp College
Club STEM Workshop	Constructor STE...
Chemistry Lab Practical	Mercator College
Career Workshop	Nordmetall College
Business Innovation Summit	Krupp College
Basketball Tournament	C3 College
Artificial Intelligence Conference	Mercator College
AI Club Hackathon	AI Enthusiasts Club

Result 61

7. Shows all activities whose names start with the letter **"C"**, and show whether they are organized by a **college** or a **club** with the specific name of the college or the club

```
SELECT
    a.activity_name,
    COALESCE(cl.club_name, c.college_name) AS Organizer
FROM
    Activity a
LEFT JOIN College_activities c ON a.activity_id = c.activity_id
LEFT JOIN Club_activities cl ON a.activity_id = cl.activity_id
WHERE
    a.activity_name LIKE 'C%';
```

activity_name	Organizer
Career Workshop	Nordmetall College
Creative Writing Workshop	Krupp College
Chemistry Lab Practical	Mercator College
Cultural Exchange Program	Cultural Exchange Club
Club STEM Workshop	Constructor STEM Club

8. Shows all **clubs** that **organize** more than **2 activities.**

```
SELECT
    cl.club_name,
    COUNT(a.activity_id) AS activity_count
FROM
    Club_activities cl
JOIN
    Activity a ON cl.activity_id = a.activity_id
GROUP BY
    cl.club_name
HAVING
    COUNT(a.activity_id) > 1;
```

club_name	activity_count
Constructor Robotics Club	2
Constructor STEM Club	2

9. Counts the total number of **unique clubs** organizing activities on campus

Select COUNT(DISTINCT club_name) AS total_clubs
FROM Club_activities;

total_clubs
12