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Coding activity 06

Q 1. SELECT name

FROM professors

WHERE age < (SELECT AVG(age) FROM professors);

Q2 . SELECT gs.name

FROM GraduateStudents gs

JOIN Professors p ON gs.supervisor_id = p.id

WHERE gs.department = p.department;

Q 3. SELECT p.name

FROM Professors p

WHERE (SELECT COUNT(*)

FROM Projects prj

WHERE prj.manager_id = p.id) > 2;

Q 4. SELECT p.name

FROM Professors p

JOIN Projects prj ON p.id = prj.manager_id

GROUP BY p.name

HAVING COUNT(prj.id) > 2;

Q5. SELECT (prj.budget - (SELECT AVG(budget) FROM Projects)) AS budget_difference

FROM Projects prj;

Q 6. SELECT name

FROM Professors

WHERE age < (SELECT AVG(age) FROM Professors);

Q 7. SELECT *

FROM Projects prj

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WHERE NOT EXISTS (  
    SELECT *  
    FROM GraduateStudents gs  
    WHERE gs.project_id = prj.id);
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Q 8.

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SELECT *  
FROM Projects  
WHERE budget = (SELECT MAX(budget) FROM Projects);
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Q 9. SELECT gs.*, p.*
FROM GraduateStudents gs
JOIN Professors p ON gs.supervisor_id = p.professor_id;

Q 10. SELECT d.department_name
FROM Professors p
JOIN Departments d ON p.department_id = d.department_id
GROUP BY d.department_name
HAVING AVG(p.age) < 40;

Q 11. SELECT *
FROM Projects
WHERE project_id IN (SELECT project_id FROM ProjectProfessors);

Q 12. SELECT *
FROM Projects
WHERE project_id NOT IN (SELECT project_id FROM ProjectProfessors);

Q 13. SELECT d.department_name
FROM Professors p
JOIN Departments d ON p.department_id = d.department_id
GROUP BY d.department_name

HAVING COUNT(*) > 3 AND MAX(p.age) < 45;

Q 14. SELECT professor_name

FROM Professors

ORDER BY age ASC

LIMIT 5;

Q 15. SELECT professor_name

FROM Professors

WHERE professor_id IN (SELECT manager_id FROM Projects);

Q 16. SELECT graduate_student_name

FROM Graduate_Students AS gs

WHERE EXISTS (

SELECT 1 FROM Professors AS p

WHERE p.professor_id = gs.advisor_id AND p.age < 40

);

Q 17. SELECT DISTINCT p.professor_name

FROM Professors AS p

JOIN Departments AS d ON p.department_id = d.department_id

WHERE d.department_size > 2 AND

EXISTS (

SELECT 1 FROM Projects AS prj

WHERE prj.manager_id = p.professor_id

);

Q 18. SELECT department_name

FROM Departments

WHERE department_id IN (

SELECT department_id FROM Professors

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WHERE time_percentage > 75
);
Q 19. SELECT student_name
FROM Students S
WHERE EXISTS (
    SELECT 1
    FROM Professors P
    WHERE P.professor_id = S.supervisor_id AND P.age = S.age
);
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Q 20. SELECT student_name, age
FROM Students
WHERE age = (SELECT MIN(age) FROM Students) OR
    age = (SELECT MAX(age) FROM Students);
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Q 21. SELECT AVG(budget)
FROM Projects
WHERE project_id IN (
    SELECT project_id
    FROM Sponsorships
    WHERE sponsor_name = 'NSF'
);
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Q 22. SELECT project_name
FROM Projects
WHERE manager_id = (
    SELECT professor_id
    FROM Professors
    WHERE professor_name = '[specified_professor_name]'
);
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