



Database and its Applications

Data Models and Mathematical Foundations

Pooja T S
Computer Applications

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Experiential Learning III: Combined Algebra Operations

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Base Tables for Relational Algebra

► Students Table:

RollNo	Name	Age	Dept
101	Alice	20	CS
102	Bob	22	IT
103	Carol	19	CS
104	David	23	ECE
105	Emma	21	CS



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Base Tables for Relational Algebra

► Courses Table:

CourseID	Title	Dept	Year
C1	DBMS	CS	2024
C2	Networks	CS	2023
C3	AI	IT	2024
C4	Mathematics	ECE	2023
C5	OS	CS	2024



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Base Tables for Relational Algebra

► Enrollments Table:

RollNo	CourseID
101	C1
101	C3
102	C1
102	C5
103	C2
103	C4
104	C1
105	C5



- ▶ Q1: Find students enrolled in DBMS (C1) but not in Maths (C4).
- ▶ Q2: Find students who enrolled in both DBMS (C1) and OS (C5).
- ▶ Q3: Find students who enrolled in either Networks (C2) or AI (C3).
- ▶ Q4: Select students older than 20, then project only their **Name**.
- ▶ Q5: Get students from CS dept who enrolled in at least one course.
- ▶ Q6: Find students enrolled in **all CS department courses**.
- ▶ Q7: List students who enrolled in courses of **different departments**.
- ▶ Q8: Project names of students enrolled in AI (C3).
- ▶ Q9: Find students who took at least one course in 2023.
- ▶ Q10: Select courses in which **more than one student** is enrolled.



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CELEBRATING 50 YEARS

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