**CONSULTAS A LA BASE DE DATOS DE UNA UNIVERSIDAD**

**2025-2 G01 Bases de Datos I 11:00**

**Parra Ochoa Alex**



**CONSULTA 1**

**π ID,name (student)**

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**CONSULTA 2**

**π name,ID (σ tot\_cred>59(student))**

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**CONSULTA 3**

**π name, ID (σ dept\_name = 'Comp. Sci.' ∧ tot\_cred ≥ 50 ∧ tot\_cred ≤ 100 (student))**

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**CONSULTA 4**

**σ dept\_name = 'Biology' (course)**

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**CONSULTA 5**

**π course\_id, title (σ credits = 4 (course))**

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**CONSULTA 6**

**π course\_id, title ( σ dept\_name='Biology' ∨ dept\_name='History' (course) )**

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**CONSULTA 7**

**π dept\_name ( σ credits=4 ∨ credits=3 (course) )**

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**CONSULTA 8**

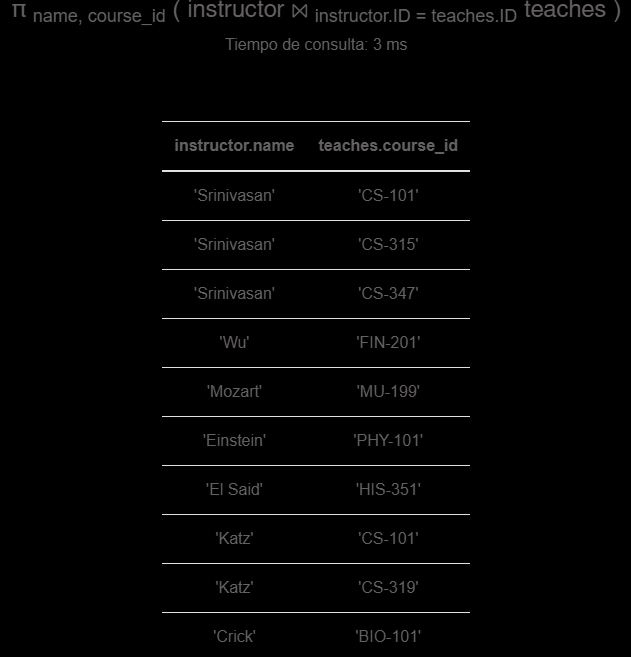
**π dept\_name ( σ credits=4 (course) ) ∩ π dept\_name ( σ credits=3 (course) )**

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**CONSULTA 9**

**π name, course\_id (instructor ⨝ instructor.ID = teaches.ID teaches)**



**CONSULTA 10**

**π name, course\_id ( σ semester='Fall' ( instructor ⨝ instructor.ID = teaches.ID teaches ) )**  
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**CONSULTA 11**

**πsalary,name,course\_id,title(σsalary<=80000∧section.semester='Summer'(instructor⨝course⨝section))**  
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**CONSULTA 13**

**πname,title,dept\_name,year(σdept\_name='Comp. Sci.'∧year=2009(student⨝course⨝section))**

  
**CONSULTA 14**

**π course.title, takes.grade (σ student.name='Chavez' ∧ grade<>'F' (student⨝takes⨝course))**

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**CONSULTA 15**

**π course\_id course - (π course\_id prereq ∪ π prereq\_id prereq)**

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**CONSULTA 16**

**π name (student ⨝ ID = s\_id advisor)**

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**CONSULTA 17**

**π name (student) - π name (student ⨝ ID = s\_id advisor)**

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**CONSULTA 18**

**π name (σ dept\_name = 'Biology' student ⨝ ID = s\_id advisor)**

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**CONSULTA 19**

**π building (σ dept\_name = 'Biology' department)**

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**CONSULTA 20**

**γ dept\_name; COUNT(title)→course\_count(course)**

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**CONSULTA 21**

**γ dept\_name; avg(num\_courses) -> avg\_num\_courses (γ dept\_name, year;** **count(course.course\_id) -> num\_courses (π course\_id, dept\_name (course) ⨝ π course\_id,** **year (section)))**

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**CONSULTA 22**

**π dept\_name, budget (department) - pi d1.dept\_name, d1.budget ( sigma d1.budget <** **d2.budget ( (rho d1 (department)) × (rho d2 (department)) ) )**

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**CONSULTA 23**

**γ course\_id; count(ID)→num\_students (takes) -π t1.course\_id, t1.num\_students (  σ** **t1.num\_students < t2.num\_students ( ρ t1 (γ course\_id; count(ID)→num\_students (takes))  x ρ** **t2 (γ course\_id; count(ID)→num\_students (takes)))**

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**CONSULTA 24**

**γ avg(salary)->avg\_salary (instructor)**

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**CONSULTA 25**

**σ instructor.salary > avg\_sal (instructor x (γ avg(salary) → avg\_sal (instructor)))**

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