Section 2.2:

sequence of operations:

example:

$$\pi_{Course, Section} \left(\sigma_{Instructor = \text{"Gilles"}} (CLASSES) \right)$$

has output

Course	Section
Math 1749	X01
Math 185	X01

now, what would happen, if instead I tried:

$$\sigma_{Instructor = \text{"Gilles"}} \left(\pi_{Course, Section} (CLASSES) \right)$$

problem! the instructor info has been stripped from the table

↑
so nothing to select on

$$\Rightarrow \emptyset \quad \text{or an error message}$$

example: write a sequence of operations to give the

course and section for all courses in room CBA 101

$$\pi_{course, section} \left(\sigma_{Room = \text{"CBA 101"}} (CLASSES) \right)$$

example: give a sequence of operations to list the courses (and only that info) for all 5 hour per week courses

$$\pi_{course} \left(\sigma_{Hours per week = 5} (HOURS) \right)$$

the Join operator: joins two tables

- needs two columns in common between the two tables

Syntax: CLASSES ⋈ FACULTY

this operation gives output:

Course	Section	Instructor	Room	Match! Office	Phone
Math163	B01	Pat	CC121	CBA153	x4547
		Pat			
		Pat		"	
		Leah		CBA151	x4490
		Gilles			
		Gilles			
Math 185	X02	Leah	TB173		

here's the issue:

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has output

Instructor	Office	Phone	Course	Section	Room
Gilles					
Leah					
Pat					

where'd all the extra rows from the second table go?

GONE!

Conclusion: order matters!

example: what would be the output of

$$\pi_{\text{Course, Instructor, HoursPerWeek}}\ \sigma_{\text{Room} = \text{``CBA101''}}(\text{CLASSES} \bowtie \text{HOURS})$$

Course	Instructor	Hours per week
Math 172	Pat	6
Math 185	Gilles	5