Agenda

1. Joins
2. Self join
3. Join on multiple Tables.

Joins

→ combine ?? Join 2 Tables

students

$m = 4$

id	name	batch_id
1	John	1
2	Jim	1
3	Jemmy	2
4	Jack	3

student name:
batch name - ?

John	A
Jim	A
Jemmy	B
Jack	C

batches

$m = 3$

id	name
1	A
2	B
3	C

$n * 3 = (12)$

$m * m$

Print out every student's name along
with their batch's name.

Join : Allows us to combine data
across multiple tables

(, ,) ⟶ (,)
(, ,) ⟶ (,)
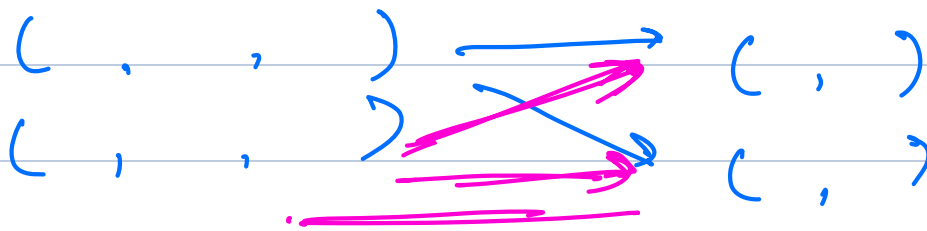
I want to stitch the data of a
row from students table with row
of batch table iff st.batch-id = batch.id

stitching table

students   batches

     batch-id   id

(1   John   1) = 1   A   ✓

1   John   1 ≠ 2   B   ✗

1   John   1 ≠ 3   C.

2   Jim   1 = 1   A   ✓

2   Jim   1 ≠ 2   B

2   Jim   1 ≠ . 3   C.

name (student), name (batch)

intermidiate Table

1	John	1	1	A
2	Jim	1	1	A
3	Jenny	2	2	B
4	Jack	3	3	C

✓

select stu.name, batch.name from Table

*, colms

select [students.name, batches.name]

from students

Join batches (Magic happens / stiching)

→ on students.batch_id = batches.id.
iff   (JOIN condition).

pseudo

ans = [].

for row in students

for row2 in batches

.* if (condition is matched)

ans.append (row1 + row2)

stitched rows.

print (ans)

print (ans['st.name', 'batch.name'])

= equi Join

student.id	student.name	st.batch_id	batch.id,
			batches.name

→ what col should g join on?.

  → Join on columns does NOT have
     to be on keys.

select

from students

join batches

on [st.batch_id < batches.id].

  len(st.name) < len(batches.name)

Break Till 10:25

Self joins

  → we assign buddies to students
                          senior).

students

id	name	buddy_id
1	Jitesh	3
2	Saikat	4
3	Ayushi	2

Print students name along with their buddy's name :-

students

id	name	buddy.
1		-

students S1 (virtual copy)

id	name	buddy
X	alias ✓	

select   S.name , S1. name
from   students S.
Join   students S1
 on   S. buddy_id = S1. id.

Self Join : when we do a join on The Table itself.

employees.

id	name	Phone	manager_id	address
1	Saruesh		4	
2	Saikat		4	
3	kavya		4	
4	Ayuesh			

Saruesh   Ayuesh   (Ayuesh, Saruesh)
Saikat   Ayuesh

$\vdots$

$\vdots$ $\xleftrightarrow{as}$

select e.name , e1.name.
from employees e
Join employees e1.
on $e.id = e_1.manager\_id$.

e $\xleftrightarrow{}$ e1.

✗ ①	Saruesh	4	i	Saruesh	④
	"		2	Saikat	4
			3	Kavya	4
✗ ①	Saruesh	4	4	Ayuesh	Null.
✓ ④	Ayuesh	null	1	Saruesh	④

		e_1			e	
1	Sarnesh	4	1	Sarnesh	4
1	"	"	2	Saibat	
			3		
✓✓ 1	Sarnesh	(4)	(4)	Ayushi	⊗ null