

Joins - 1

Agenda \rightarrow ~~Delete~~, ~~Diff. blw~~

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Delete, Truncate, Drop

CRUD



Notes

CRUD
↓
complex Read

Until now

→ Query found data from how many tables
↓
Ans: (1)

film_actor \rightarrow



Joins

not always on PK or FK, ...
combine data from more than one table

- Stitches rows of two tables together. based on certain specified cond.
2 tables @ Scaler | Print name of all students along w/ their batch name

Students

id	name	b_id	psp
1	John	1	80
2	Jane	1	90
3	Jack	2	78

Batches

b_id	name
1	A
2	B

Student	Batch
John	A
Jane	A
Jack	B

can use joins

Now let's stitch the student's rows with the batch's rows in order to get the output.

Students

id	name	b_id	psp
1	John	1	80
2	Jane	1	90
3	Jack	2	78

Batches

b_id	name
1	A
2	B

cross product of two tables

{A, B, C}

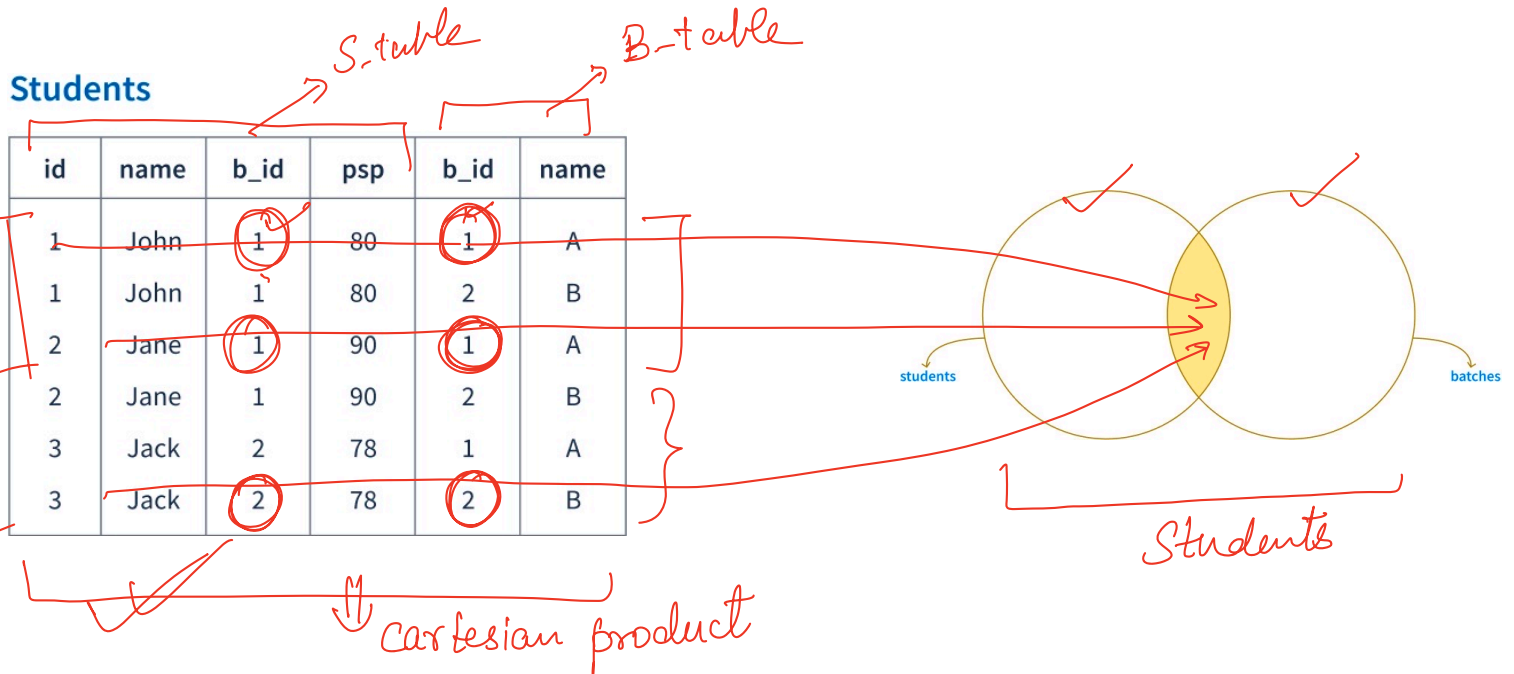
{1, 2}

{A, B, C} {1, 2}

A1, A2
B1, B2
C1, C2



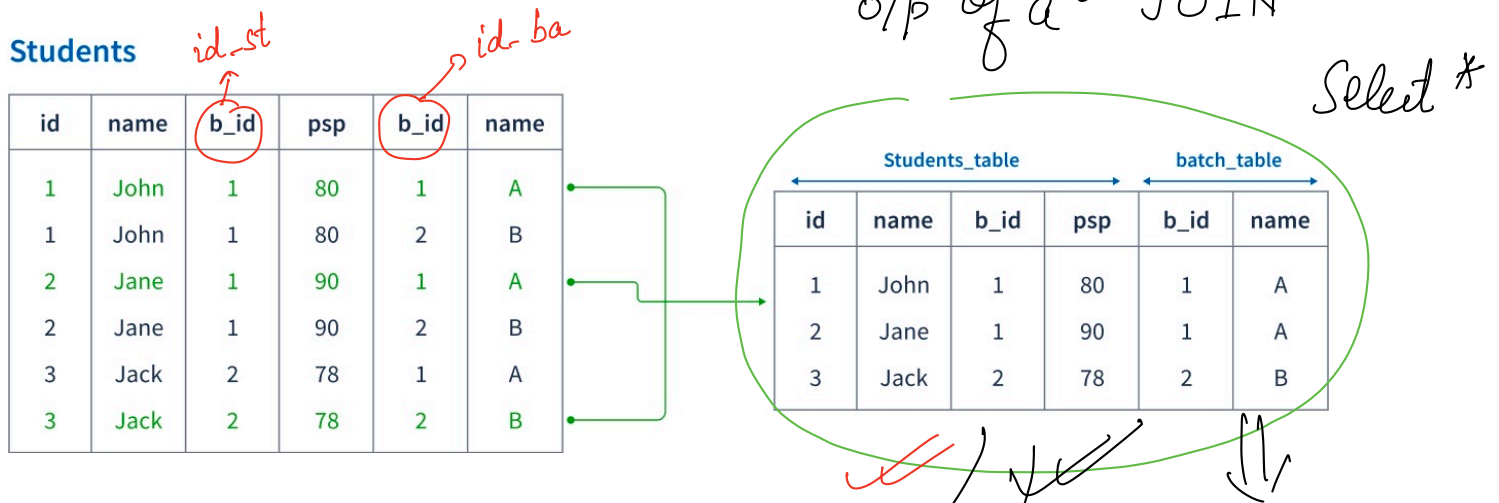
We get the following output



Since this isn't the desired output and we only want data which matches the b_id row of students table with the b_id row of batch table. Hence we filter out the undesired data.

JOIN-CONDITION : Condition that must be true b/w 2 tables for them to be stitched together as final o/p of a JOIN

After filtering we get the following final table :





</> Syntax

SELECT students.name, batches.name

FROM students

JOIN batches

ON students.b_id = batches.b_id

Selecting / fetching data

Joining tables

Conditions for JOIN
↳ ON clauseConditions for Select
↳ WHERE clause

Join-condition $b_id = b_id$

b_id from Students table

b_id of batches table

</> Pseudo-code

```

ans = []
for row1 in students:
    for row2 in batches:
        if row1[b_id] == row2[b_id]:
            ans.add(row1 + row2)
  
```

equal
call conditions

give all indices of ~~arr~~ Arr1 which have same value as in Arr2

> ans is having complete rows & cols.

for rows in ans:

print [rows[name], rows[batch_name]]

Ans: Nested loop

```

ans = []
for i in range(len(Arr1)):
  
```

```

    for (Arr2)
        if (condition)
            ans.add(i)
  
```

Sakila

Aliases in JOIN Query

to tables (AS)

Select f.title, l.name

FROM film f

JOIN language l

ON f.language_id = l.language_id;

For every film, print film-name & lang.

Ans:



Various Kind of JOINS

Self - Joins (Joining the table with itself)

- Here we join the tables with itself.

id

name

buddy_id

buddy-id

Consider the following table :

Students

id	name	buddy_id
1	A	2
2	B	3
3	C	1
4	D	1
5	E	4

< Question > : Get name of all the students along with their buddy names.

Expected Output

name	buddy_id
A	B
B	C
C	A
D	A
E	D



' But how can we get buddy names? '



' By joining the students table with itself.. '



Example

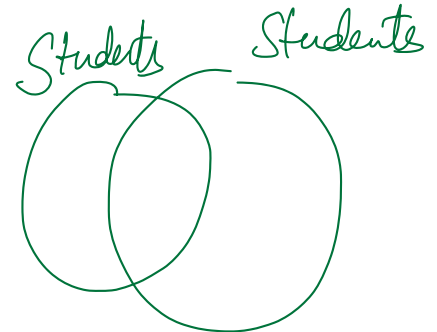
Note : Here students and buddy table are same

Students

id	name	buddy_id
1	A	2
2	B	3
3	C	1
4	D	1
5	E	4

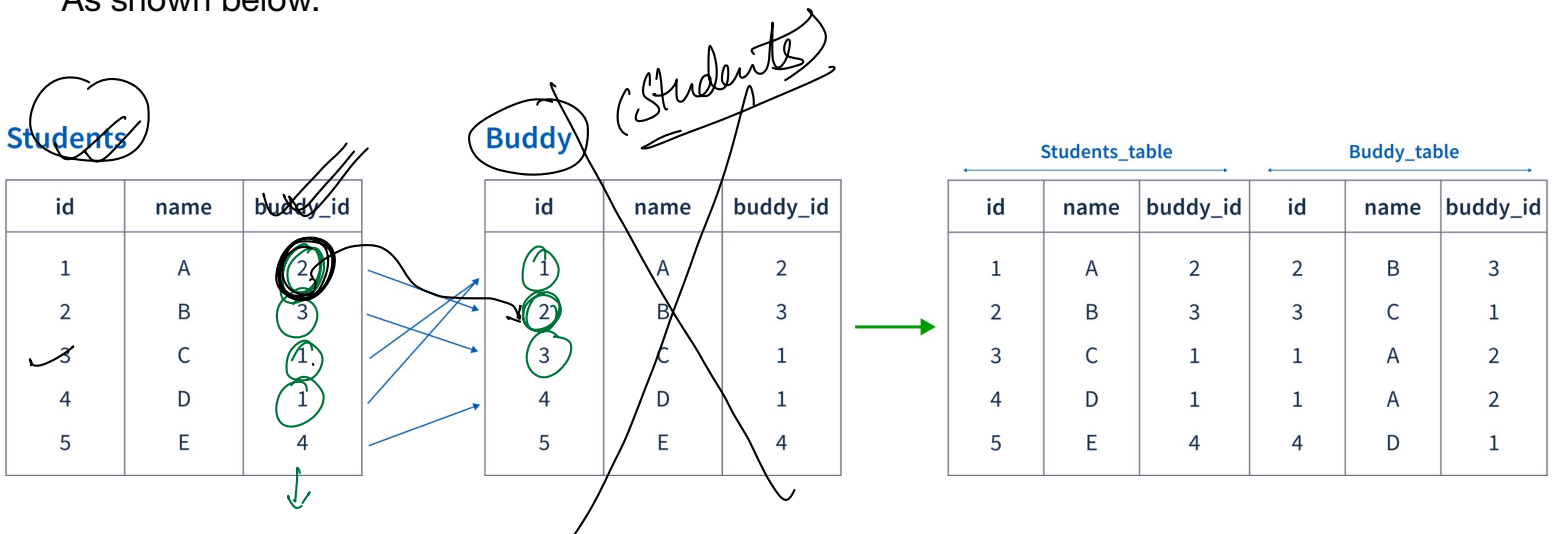
Buddy

id	name	buddy_id
1	A	2
2	B	3
3	C	1
4	D	1
5	E	4



Here we will join the given tables i.e students tables buddy_id with buddy tables id.

As shown below.





MACROS

< / > Syntax

```

SELECT S.name, B.name
FROM students as S
JOIN buddy students as B
ON (S.b_id = B.id)

```

There is no such thing as buddy table
 ↓
 student

↓
 necessarily
 use alias
 (compulsory)

< / > Pseudo-code

```
ans = []
```

```
for row1 in students : ✓
```

```
for row2 in batches : ✓
```

```
if row1 [b_id] == row2 [id] :
```

```
ans.add(row1 + row2)
```

```
print( ans )
```

Summary (of today's session)

↳ Delete

↳ Delete v/s Truncate v/s Drop

↳ Hands-on

↳ JOINS ———→ Intro

↳ SELF-JOIN ↳ Aliasing



Joining multiple tables



*'Do you think we will always get answer just
by joining two tables?'*

Example

Students

id	name	Instructor_id	b_id
1	Jim	1	2
2	Jenny	1	1

Instructors

id	name
1	Rahul
2	Prateek

Batches

b_id	batch_name
1	A
2	B

< Question > : For every student, give their corresponding instructor name and batch name.

name	Instructor_name	batch_name
Jim	Rahul	B



- < Question > :** 1. Is it possible to get this data using just 1 table? or by just joining two tables?
2. What is output of join? Intermediatory table?

Let's join student with batches first

< / > Syntax

```
SELECT ____  
FROM students s  
JOIN  batches b  
ON    s.b_id = b.b_id
```

Intermediatory table

Students_table				batch_table	
id	name	Instructor_id	b_id	b_id	batch_name
1	Jim	1	2	2	B
2	Jenny	1	1	1	A



- Since this is also a table can we join another table to it?

< / > Syntax

SELECT ____

FROM students s

JOIN batches b

ON s.b_id = b.b_id

JOIN instructors i

ON s.instructors_id = i.i_id

Final table

Students_table				batch_table		instructor_table	
id	name	Instructor_id	b_id	b_id	batch_name	id	name
1	Jim	1	2	2	B	1	Rahul
2	Jenny	1	1	1	A	1	Rahul