

SQL VI - Built-in functions and aggregates

NULL = STUDENTS
NULL?

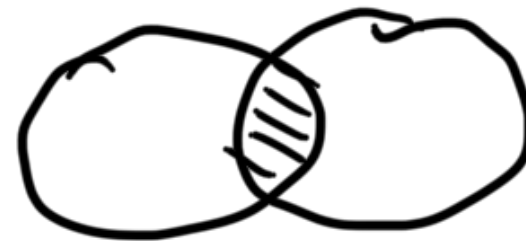
ID	NAME	BATCH_ID
1	S-1	1
2	S-2	1
3	S-3	2
4	S-4	NULL

BATCHES

ID	NAME
1	B-1
2	B-2
3	B-3

LET'S DO SOME JOINS

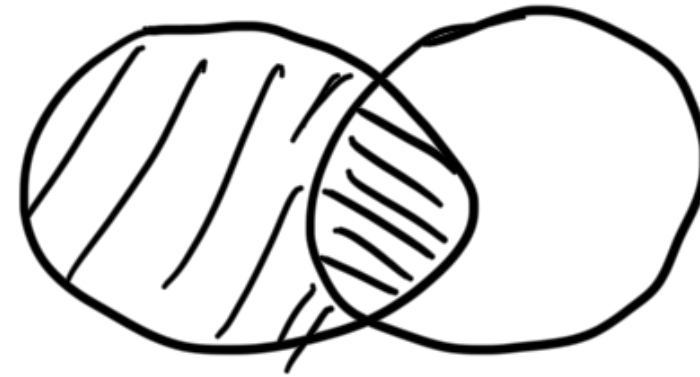
① INNER JOIN



S.ID	S.NAME	BATCH_ID	B.ID	B.NAME

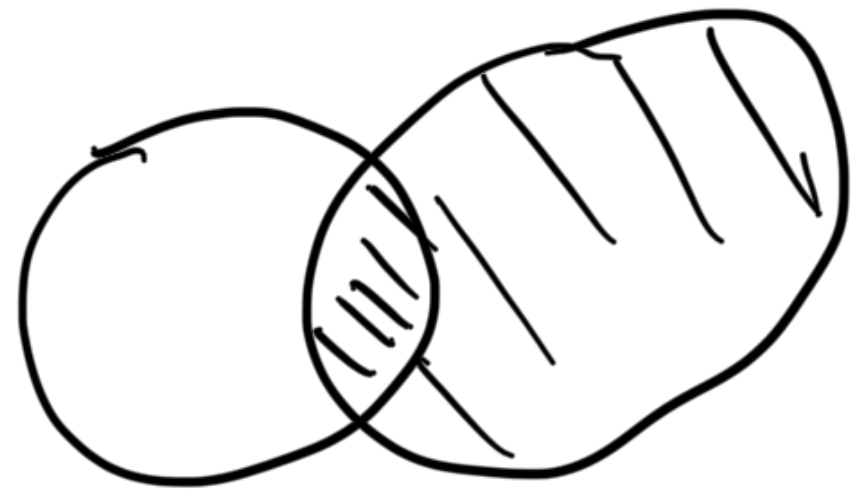
1	S-1	1	1	B-1
2	S-2	1	1	B-1
3	S-3	2	2	B-2

② LEFT JOIN



S.ID	S.NAME	BATCH_ID	B.ID	B.NAME
1	S-1	1	1	B-1
2	S-2	1	1	B-1
3	S-3	2	2	B-2
4	S-4	NULL	NULL	NULL

③ RIGHT JOIN



S.ID	S.NAME	BATCH_ID	B.ID	B.NAME
1	S-1	1	1	B-1

Q	2	S-2	1	1	B-1
	3	-S3	2	2	B-2
	NULL	NULL	NULL	3	B-3

— x — x — x —

④ FULL OUTER JOIN



MYSQL — X

ID	NAME	BID	B.NAME
1	S-1	1	B-1

2	S-2	1	B-1
3	S-3	2	B-2
4	S-4	NULL	NULL
NULL NULL		3	B-3

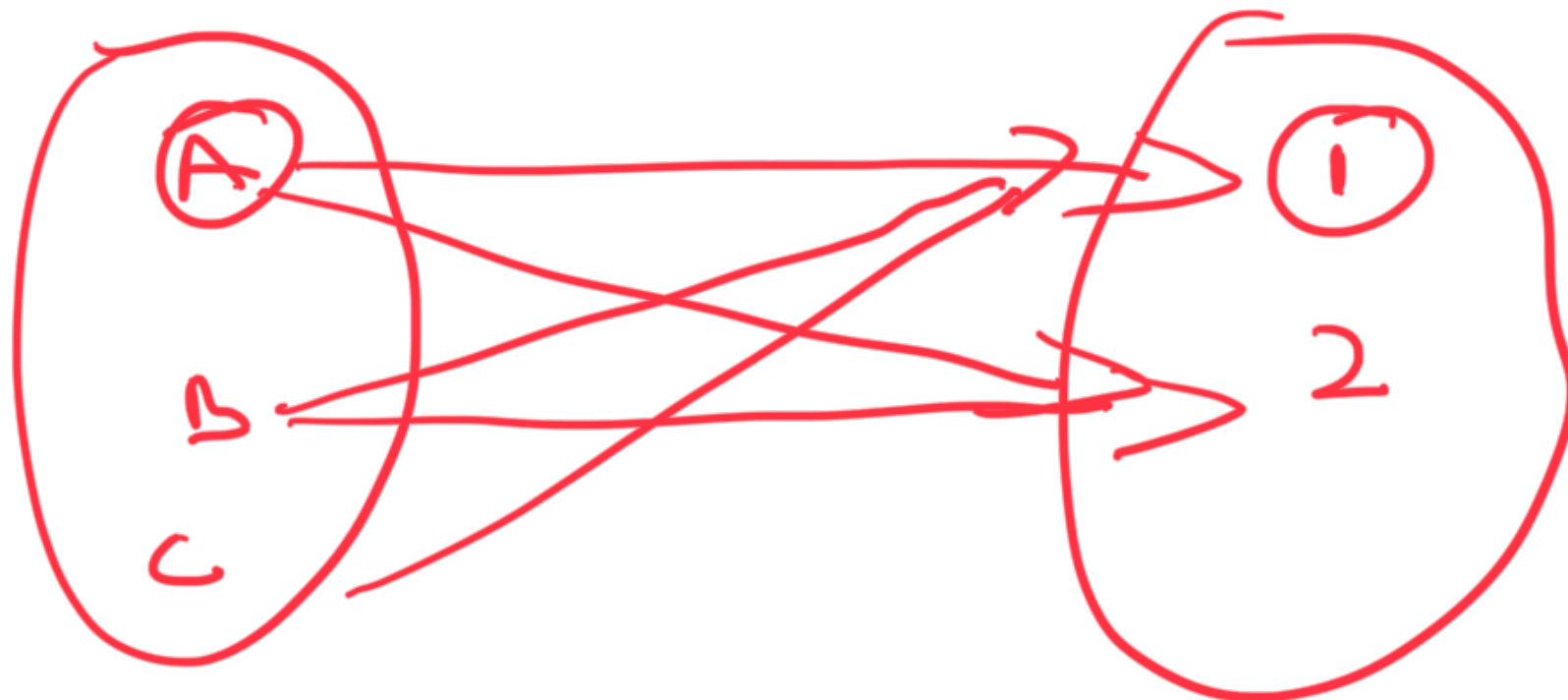
⑤

CROSS JOIN

CROSS JOIN

→ Cartesian Product

→ Permutations



IN * M

A1, A2, B1, B2, C1, C2

CROSS JOIN → INNER

JOIN

w/o condition



Agenda



Builtin functions

→ Numeric
→ String
→ Datetime

+ Date + time + MISC.

②

Aggregation

→ Functions ✓

→ GROUP BY ✓

→ HAVING

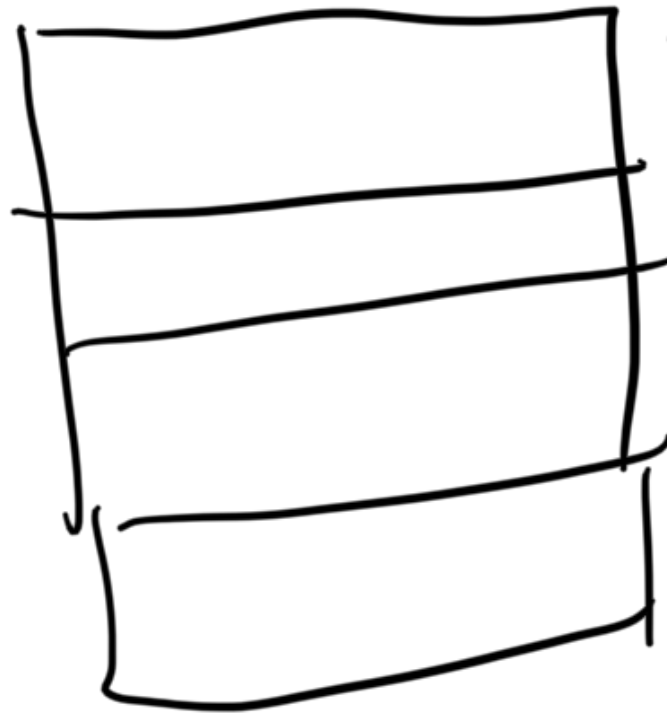
Aggregation

→ Get the top student by IQ

ORDER BY IQ
LIMIT 1

Now
Tribnabas

→ Get the lowest IQ



Single value

→ Aggregation

→ Maximum IQ
→ Minimum IQ
→ AVG
→ SUM
→ COUNT

