**JOINS**

* CROSS JOIN

SELECT \* FROM session34.users1 t1

CROSS JOIN session34.groups t2

* INNER JOIN (here we can also just JOIN and it will be interpreted as INNER JOIN)

SELECT \* FROM session34.membership t1

INNER JOIN session34.users1 t2

ON t1.user\_id = t2.user\_id

* LEFT JOIN

SELECT \* FROM session34.membership t1

LEFT JOIN session34.users1 t2

ON t1.user\_id = t2.user\_id

* RIGHT JOIN

SELECT \* FROM session34.membership t1

RIGHT JOIN session34.users1 t2

ON t1.user\_id = t2.user\_id

* FULL OUTER JOIN (cannot be performed) but WE can do it

SELECT \* FROM session34.membership t1

LEFT JOIN session34.users1 t2

ON t1.user\_id = t2.user\_id

UNION

SELECT \* FROM session34.membership t1

RIGHT JOIN session34.users1 t2

ON t1.user\_id = t2.user\_id

**SQL Set Operations**

* UNION

SELECT \* FROM session34.person1

UNION

SELECT \* FROM session34.person2

* UNION ALL

SELECT \* FROM session34.person1

UNION ALL

SELECT \* FROM session34.person2

* INTERSECT

SELECT \* FROM session34.person1

INTERSECT

SELECT \* FROM session34.person2

* EXCEPT (set subtraction)

SELECT \* FROM session34.person1

EXCEPT

SELECT \* FROM session34.person2

* SELF JOIN

SELECT \* FROM session34.users1 t1

JOIN session34.users1 t2

ON t1.emergency\_contact = t2.user\_id

* Joining on more than one column

When we need to perform 2 joins because 1 is not sufficient. Ex below explains what id that student has and what year he enrolled. So that the teacher from the class table is matched properly

SELECT \* FROM session34.students t1

JOIN session34.class t2

ON t1.class\_id = t2.class\_id AND t1.enrollment\_year = t2.class\_year

* For the top we can perform LEFT and RIGHT
* Joining more than 2 tables

Q) Find order name and corresponding category name

SELECT \* FROM session34.order\_details t1

JOIN session34.orders t2

ON t1.order\_id = t2.order\_id

JOIN session34.users t3

ON t2.user\_id = t3.user\_id

* Filtering Columns

SELECT t1.order\_id, t1.amount, t1.profit, t3.name FROM session34.order\_details t1

JOIN session34.orders t2

ON t1.order\_id = t2.order\_id

JOIN session34.users t3

ON t2.user\_id = t3.user\_id

Question in filtering columns

1. Find order\_id , name and city by joining users and orders

SELECT t1.order\_id, t2.name, t2.city

FROM session34.orders t1

JOIN session34.users t2

ON t1.user\_id = t2.user\_id

1. Find order\_id, product category by joining order\_details and category

SELECT t1.order\_id, t2.category

FROM session34.order\_details t1

JOIN session34.category t2

ON t1.category\_id = t2.category\_id

* Filtering Rows

Questions in Filtering rows

1. Find all the orders placed in Pune

SELECT \* FROM session34.orders t1

JOIN session34.users t2

ON t1.user\_id = t2.user\_id

WHERE t2.city = 'pune'

1. Find all orders under Chairs category

SELECT \* FROM session34.order\_details t1

JOIN session34.category t2

ON t1.category\_id = t2.category\_id

WHERE t2.category = 'chairs'

* Practice Questions

1. Find all profitable orders

SELECT t1.order\_id, SUM(t2.profit) AS 'profit' FROM session34.orders t1

JOIN session34.order\_details t2

ON t1.order\_id = t2.order\_id

GROUP BY t1.order\_id

HAVING profit > 0

ORDER BY profit DESC

1. Find the customer who has placed max number of orders

SELECT name, COUNT(\*) AS 'num\_orders' FROM session34.orders t1

JOIN session34.users t2

ON t1.user\_id = t2.user\_id

GROUP BY t2.name

ORDER BY num\_orders DESC LIMIT 10

1. Which is the most profitable category

SELECT t2.category, SUM(profit) AS 'sum\_of\_profit' FROM session34.order\_details t1

JOIN session34.category t2

ON t1.category\_id = t2.category\_id

GROUP BY t2.category

ORDER BY sum\_of\_profit DESC LIMIT 10

1. Which is the most profitable state

SELECT state, SUM(profit) AS 'sum\_profit' FROM session34.orders t1

JOIN session34.order\_details t2

ON t1.order\_id = t2.order\_id

JOIN session34.users t3

ON t1.user\_id = t3.user\_id

GROUP BY state

ORDER BY sum\_profit DESC LIMIT 10

1. Find all categories with profit higher than 5000

SELECT t2.category, SUM(profit) AS 'sum\_profit' FROM session34.order\_details t1

JOIN session34.category t2

ON t1.category\_id = t2.category\_id

GROUP BY t2.category

HAVING sum\_profit > 5000