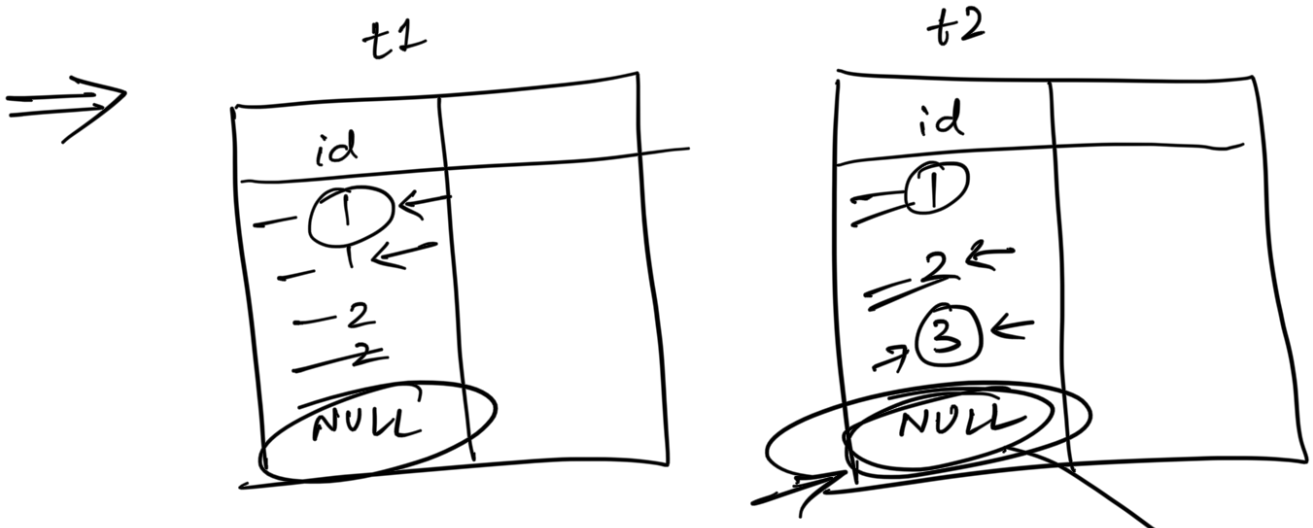


LEFT →

t1.id	t2.id
1	1
1	1
2	2
2	2
NULL	NULL

Right

t1.id	t2.id
1	1
1	1
1	2
2	2
2	3
NULL	NULL
NULL	NULL

Inner

t1.id	t2.id
1	1
1	1
2	2
2	2

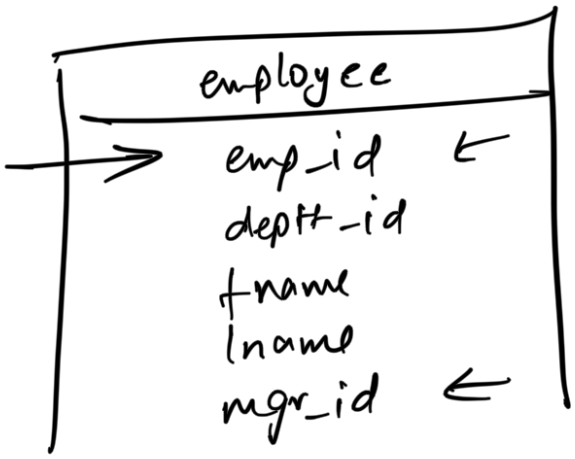
Outer

t1.id	t2.id
1	1
1	1
2	2
2	2
NULL	3
NULL	NULL
NULL	NULL

Agenda :

1. Self Joins & Cross Join ←
2. Correlated Subquery
3. Group By & Aggregation fns.

Q. For each employee, find out the name of their manager from the employee.



employee

emp_id	mgr_id	name
1	3	Tom
2	3	Dick
3	5	Harry
4	2	Navish
5	NULL	Pritesh

mgr_emp

Output

emp_id	manager_name
1	Harry
2	Harry
3	Pritesh

4.		Dick
5		NULL

Self Join

Syntax:

```
SELECT
    emp.emp_id
    mgr.name
FROM employees AS emp
JOIN employees AS mgr
ON emp.mgr_id = mgr.emp_id
```

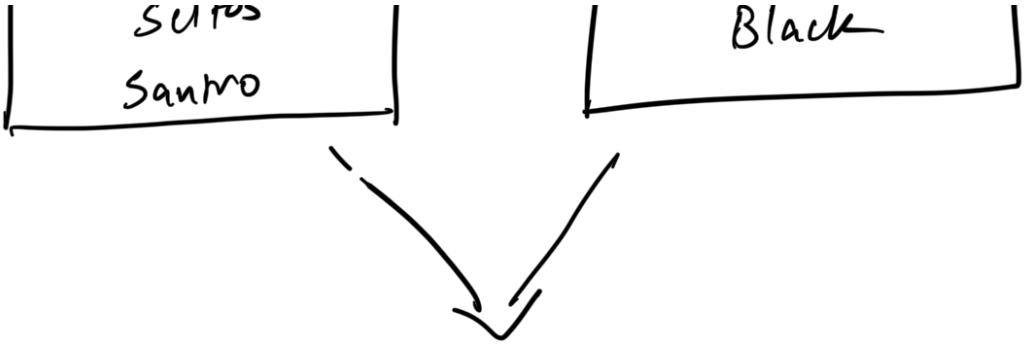
```
SELECT
FROM employees As emp, employees AS mgr
WHERE
```

CROSS JOIN

4 × 3 = 12

Col Model
i10
Suzuki

Color
Red
Blue



Cross Join output ↓

car_model	color
i10	Red
i10	Blue
i10	Black
suzuk	Blu
⋮	Bla

(12)

SELECT *

FROM car_model , color

Q. Get all the employees who are earning more than the average salary of their department.

① How to calculate (their) employee's dept. avg. salary.

Correlated Subquery

SELECT * id ?

e1. salary }

FROM employees AS e1

WHERE e1. salary > SELECT AVG (salary)

FROM employees AS e2

WHERE e1. dept_id = e2. dept_id

GROUP BY

Purchases

SUM (Amt)

date	customer_id	Amt.	Totalamt_perday
21	1	5	14
21	1	2	
21	1	7	
21	2	3	7
21	2	4	
22	1	10	10
22	2	8	8

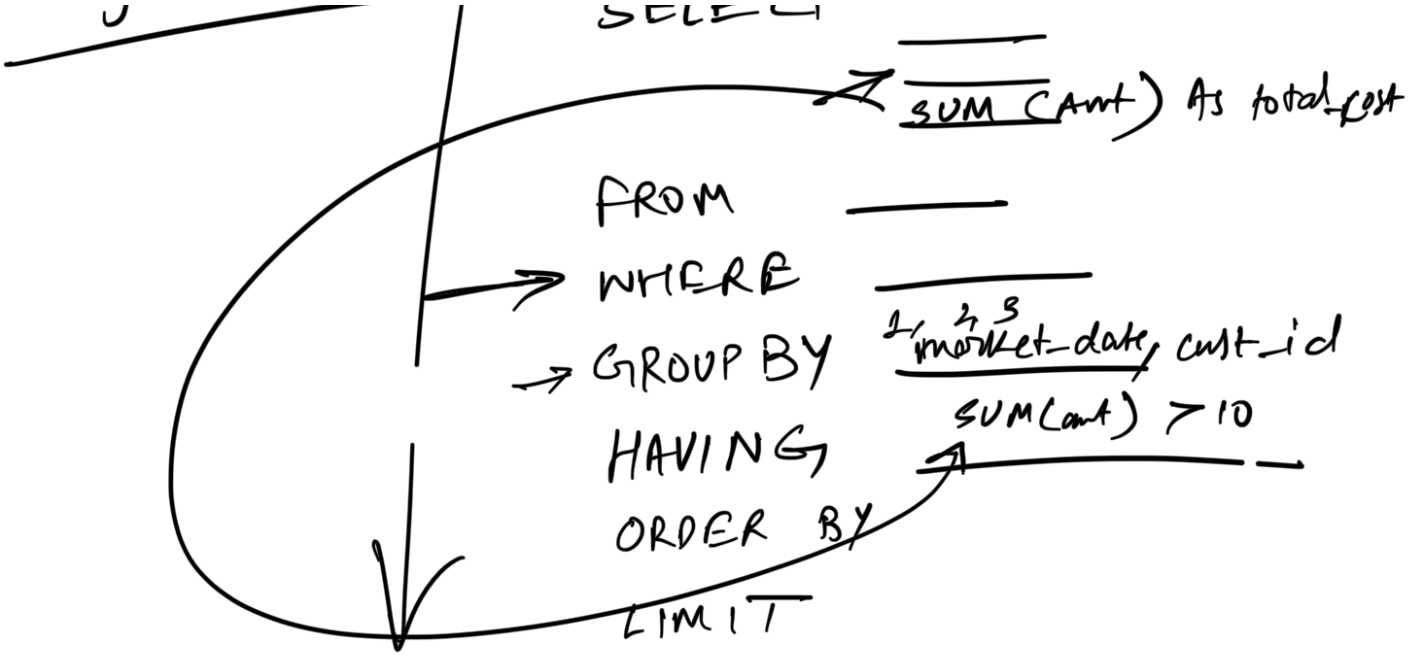
Aggregation (count)

21 - 1 → 1st group → 3

21 - 2

22 - 1 — 1

Syntax:



Q. Get a list of customers who made purchases on each date.

SELECT DISTINCT ✓ Expensive Operation

c_id
date

FROM

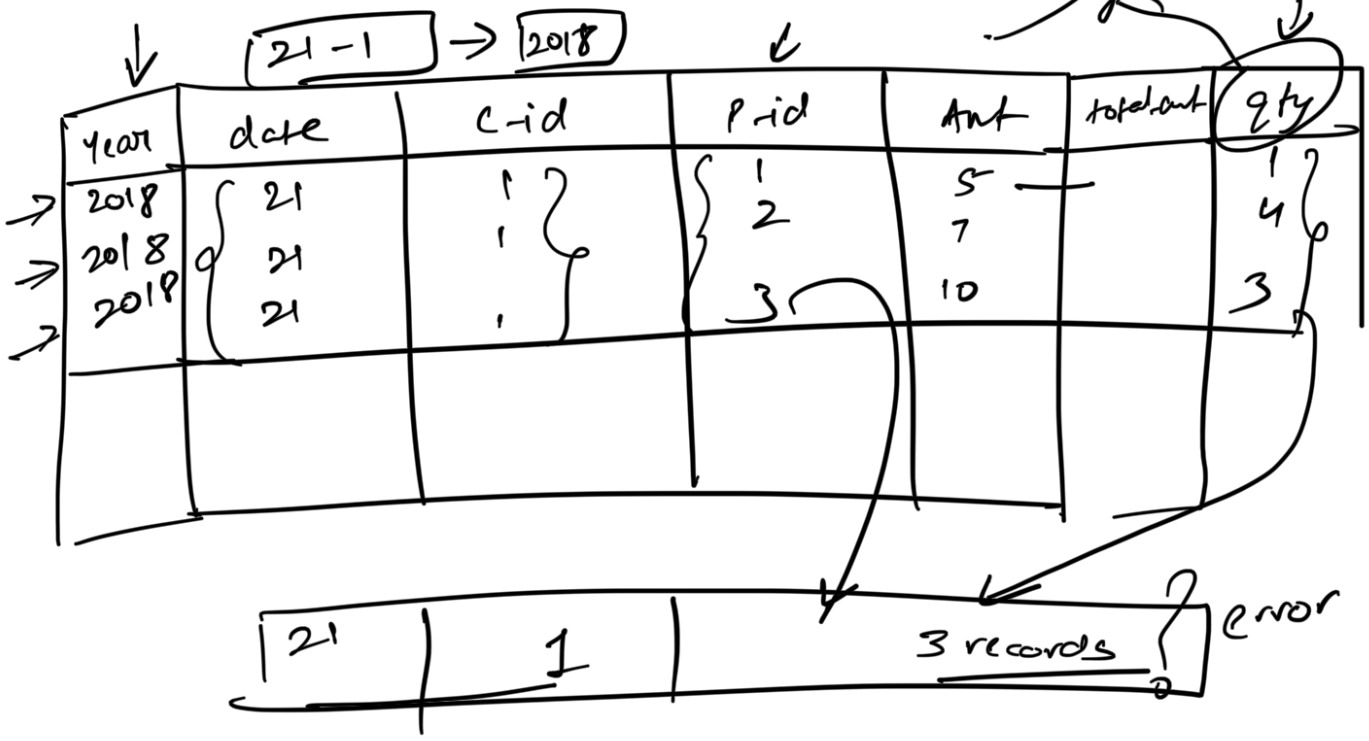
SELECT
cust_id ✓
market_date
FROM purchases
GROUP BY (cust_id, market_date)

LOD

number of purchases

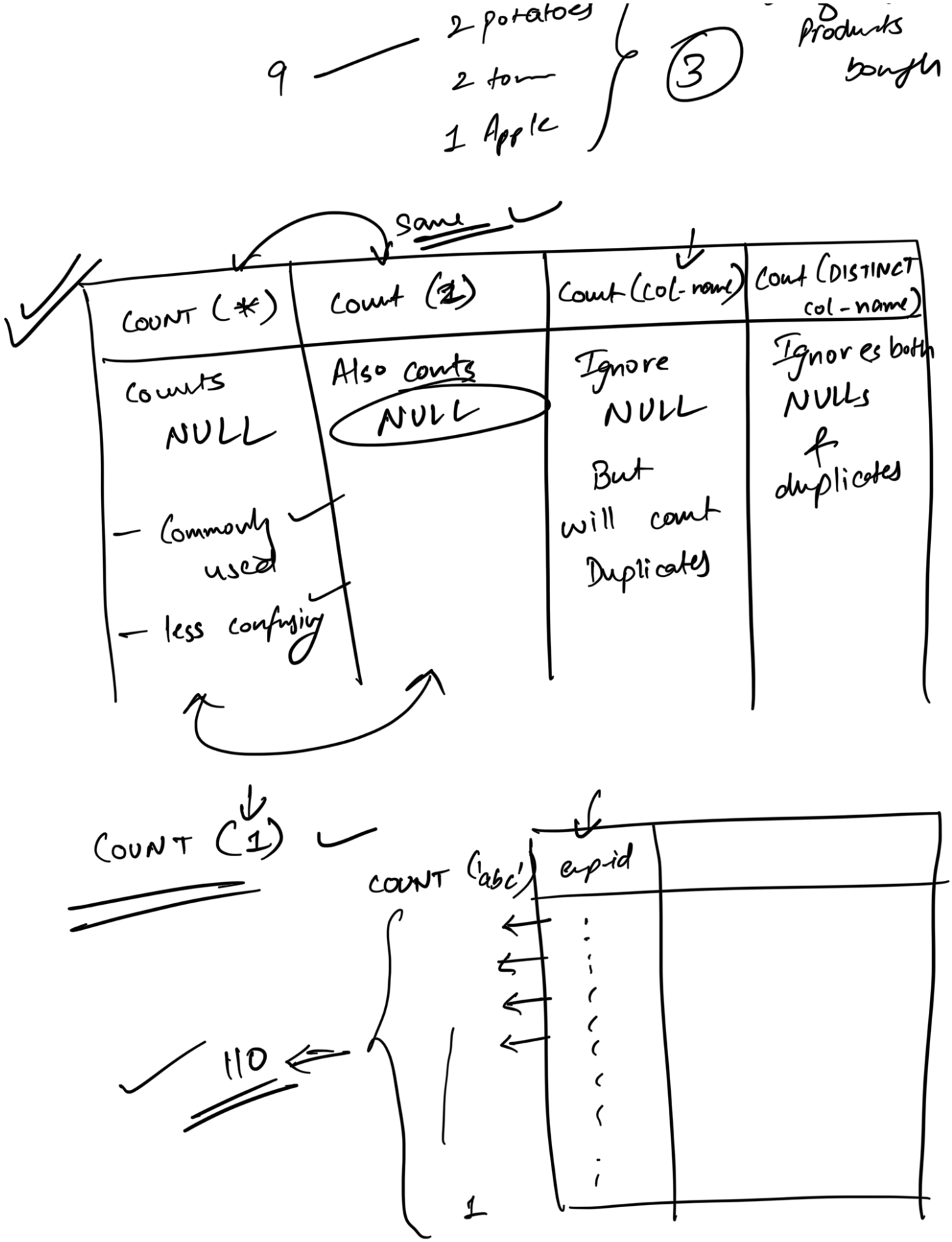
d. Count the number of orders each customer made on each date.

SELECT year,
c_id,
date,
quantity
~~product_id~~
count(*) AS num_purchases
SUM(Amt) AS total
FROM ——
GROUP BY c_id, date, ~~product_id~~



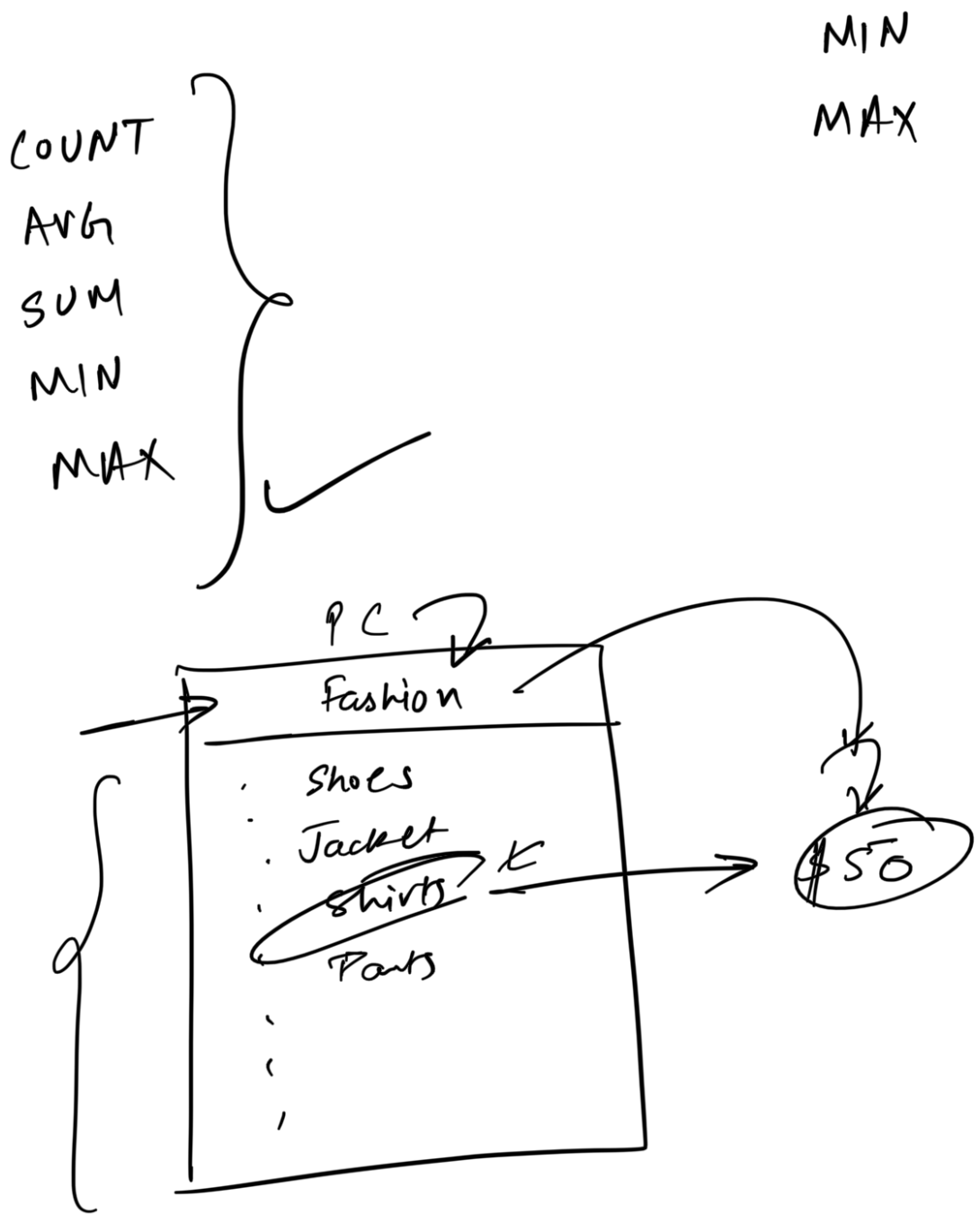
21 - 1 - 1
21 - 1 - 2
21 - 1 - 3

↓ Number of different

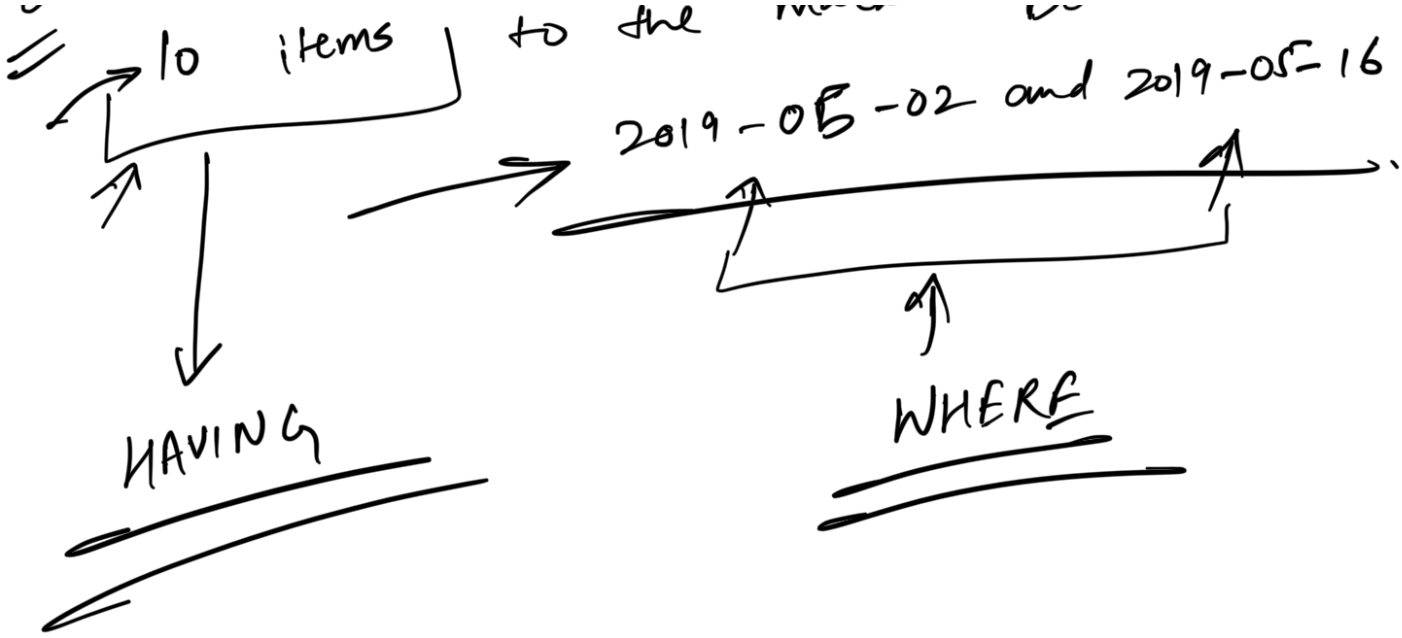


Q Calculate the total amount paid by each customer to each vendor till date.

Q. Get the least & most expensive product per product category.



Q. filter out vendors who brought at least


10 items
to the
2019-05-02 and 2019-05-16
HAVING
WHERE