Window functions continued

Start @ 9:03

Recap:

Window fn:
  ↳ Row. num
     Rank
     D. Rank
     Ntile.

Agenda:

Continue Wind. fn
  ↳ Agg. wind. fn
  ↳ window frames
  ↳ lag, lead

Sum (Salary) over ( )

Dept	Salary		
A	10	115	40
A	20	115	40
A	10	115	40
B	50	115	75
B	25	115	75

← Sum (Sales) over (partition by dept)

↑ the entire table is 1 partition

↑ there are 2 partition

Sum (Sales) over (partition by dept)

Sum(Sales) over (partition by dept order by salary)

Dept	Salary		
A	10	60	
A	20	60	
A	30	60	
B	50	75	
B	25	75	

When there is order by in Agg. Window func, there is concept of window frames come into picture.

sum(Sales) over (partition by dept order by salary)
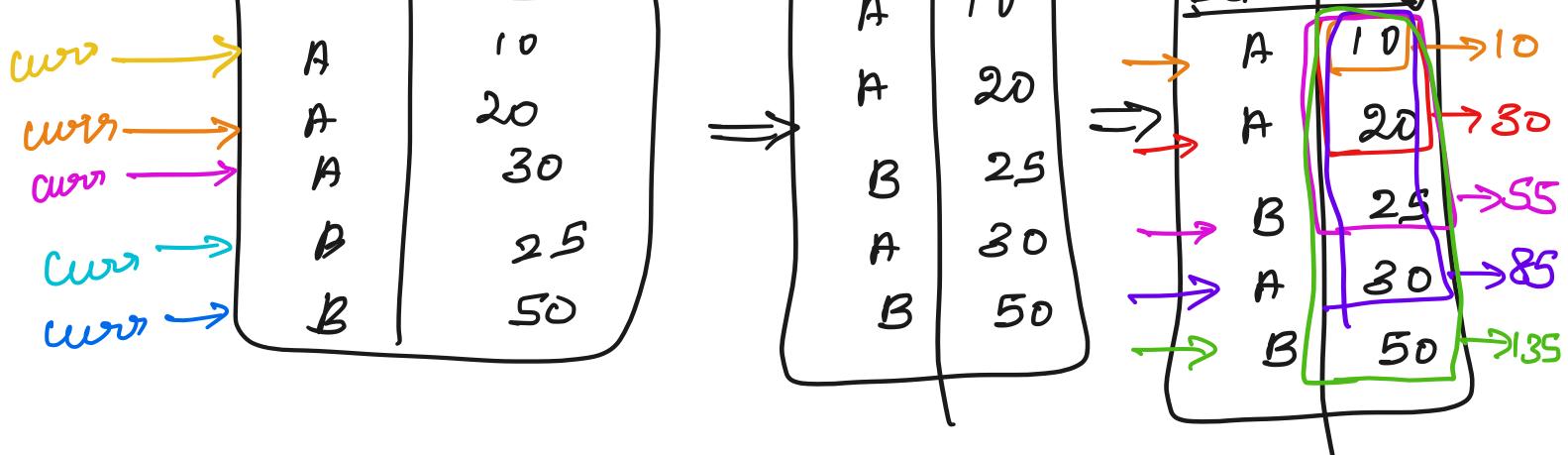
Dept	Salary	Sum (sales)
A	10	10
A	20	30
A	30	60
B	25	25
B	50	75.

curr →
curr →
curr →
curr →
curr →

sum (Sales) over (order by salary)

Dept	Salary

Dept	Salary

Dept	Salary

curr → A | 10
curr → A | 20
curr → A | 30
curr → B | 25
curr → B | 50

⟹

A | 10
A | 20
B | 25
A | 30
B | 50

⟹

→ A | 10 → 10
→ A | 20 → 30
→ B | 25 → 55
→ A | 30 → 85
→ B | 50 → 135

What happens when there is a duplicate in order by column.

sum(Sales) over (partition by dept order by salary)

Dept	Salary	Sum (salary)
A (curr)	10	10
A (curr)	20	50
A (curr)	20	50
B (curr)	25	25
B (curr)	50	75.
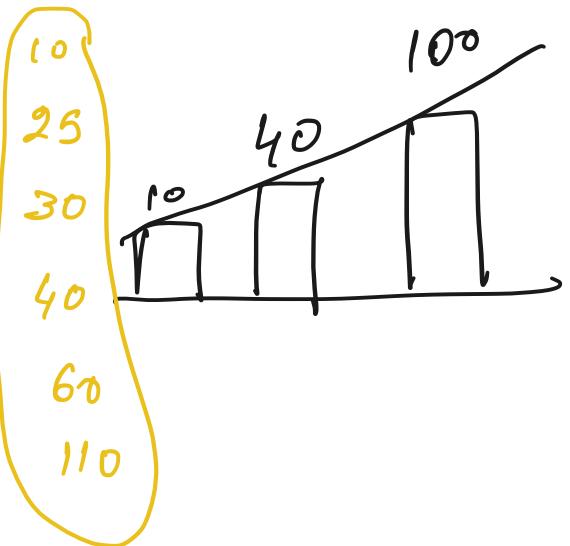
sum(Sales) over (order by salary)

Dept	Salary	Sum (salary)
A (curr)	10	10
A (curr)	20	70
A (curr)	20	70
B (curr)	20	70
B (curr)	25	95

Sales.   sum(Sales) over (order by month)

Pid	month	Sales
P10	Jan	10
P2	Jan	15
P3	Jan	5
P1	Feb	10
P2	Mar	20
P10	Mar	50

30 10
30 25
30 30
40 40
110 60
110 110

Find the cum. contrib of each month to overall sales

Sum(Sales) over (order by month)

month	Sales	Cum. Sales.
Jan	10	10
Feb	30	40
Mar	20	60
April	40	100

cum. % Contribution
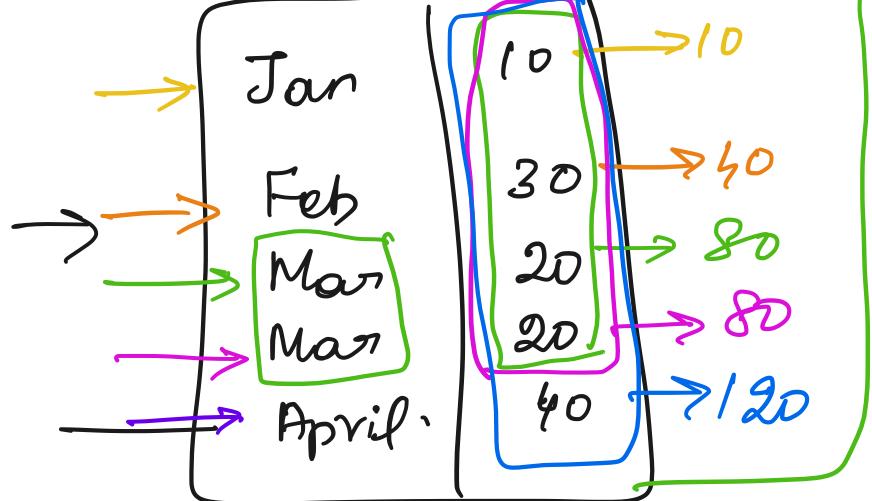
10/100 → 10%

40/100 → 40%

60/100 → 60%

100/100 → 100%

Jan → 90
Feb   20.
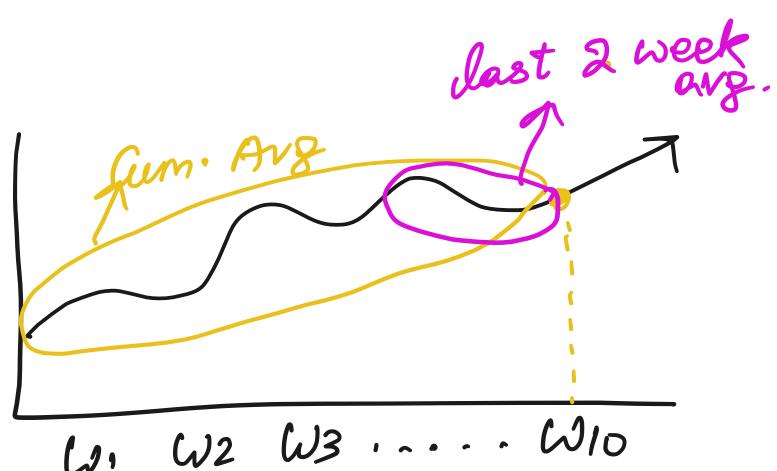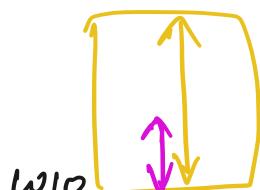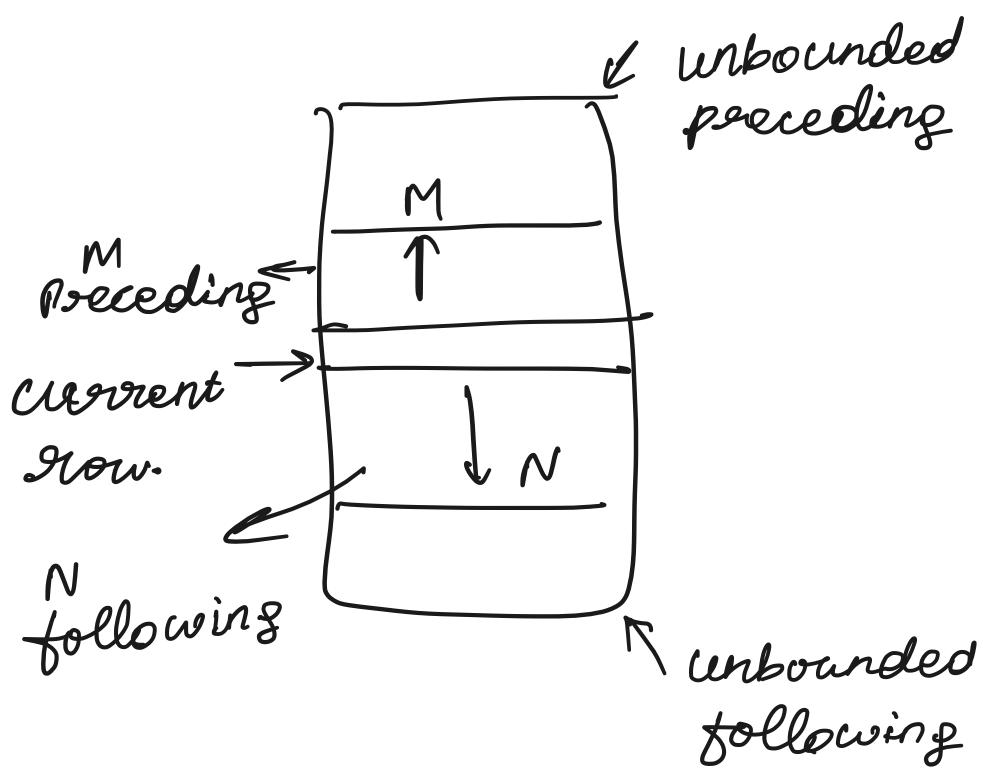
20
90.

Sum(Sales) over (order by month)

month   Sales   Cum. Sales.

→ Jan	10	→ 10
→ Feb	30	→ 40
→ Mar	20	→ 80
→ Mar	20	→ 80
→ April	40	→ 120

Window frames:

M preceding ←

M ↑

current row →

↓ N

N following

← unbounded preceding

↗ unbounded following

W10

last 2 week avg.

Cum. Avg

W1 W2 W3 . . . . . . W10
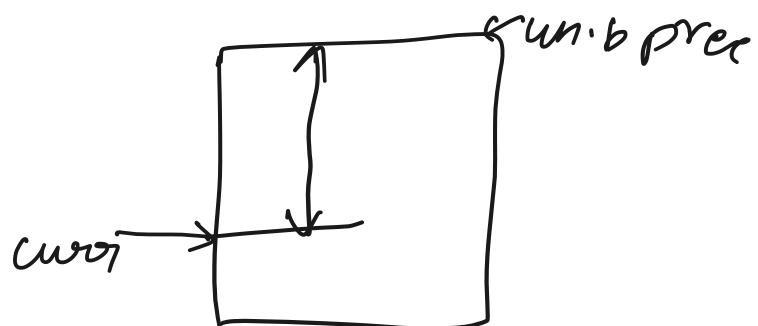
Sum (Sales) over (partition by dept·id order by Sales)

is same as.

Sum (Sales) over (pertition by dept·id order by sales range between unbounded preceding and current row)

← un·b prec

curr →

Sum (sales) over (pertition by dept·id order by sales rows. between unbounded preceding and current row)

sum (Sales) over (order by salary rows between 1 preceding and current row)

Dept	Salary	Sum (salary)
A	10	10
A	20	30
A	20	40
B	20	40
B	25	45

curr →
curr →
curr →
curr →
curr →

Rows → treats each row independently.

Range → logically looks at values and considers all values if it is within the provided range of the current row.