# SQL-4

Agenda

~~⓪~~ Views ←

① Indexing ←

② Transactions ←

Naman Bhalla

→ SWE @ Google

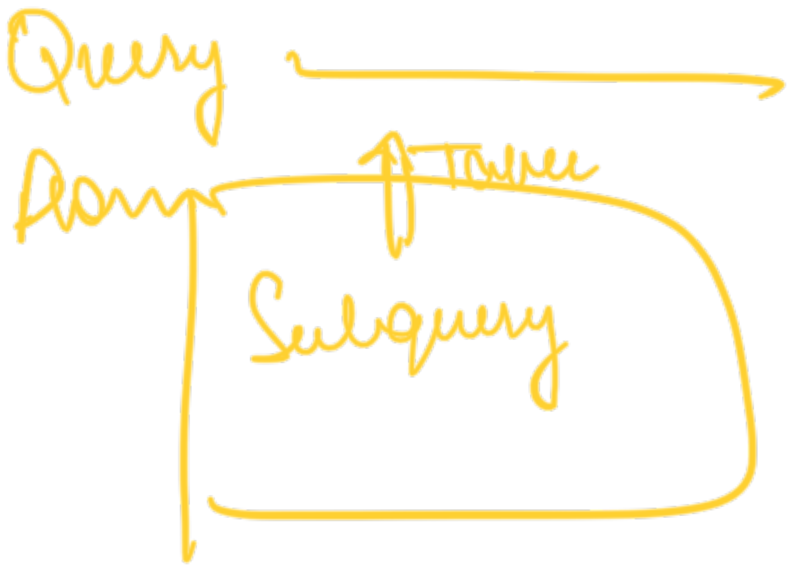
[illegible]

[illegible]

## Subqueries

- → SELECT
- → FROM
- → WHERE

→ result of any SQL query is like a table



## Scaler's DB

students

| id | name | b_id | psp |
|---|---|---|---|
| | | | |

batches

| b_id | name | t_id |
|---|---|---|
| | | |

| id | name |
|---|---|
| | |

Qn Give average psp for all students being taught by a teacher

| | |
|---|---|
| Naman | 87 |
| Satyasai | 95 |
| Tanmay | 89 |

Mobile 150

X

| b_id | t_name | st_id | t_id | psp |
|---|---|---|---|---|
| | | | | |

y

```
Select avg(psp), t_id
from ()
group by t_id
```

```
Select s.id, t.id, t.name, s.psp, b.id

from students s
  join batches b
     b.id = b.b_id
```

```
    on s.b_id = b.id
join teachers t
    on b.t_id = t.id
```

Cross Join

```
select
   from students, teachers
      where
```

$Q^n$ Wee want to get average psp of every batch.

```
Select avg(psp), b_id
  from X =
  group by b_id
```

## View

⇒ View is like a subquery stored in my database

⇒ View acts like a table.

# Transactions

→ a group of SQL statements that we want to be run **atomically** ← complete / None

**Bank**

eg of transaction

transfer 200 rs from A to B

(1) Get current Balance of A

② Temp = A

③ Put balance of A = A - 200

④ Get current balance of B

⑤ Temp = B

⑥ Put new balance of B = B+200

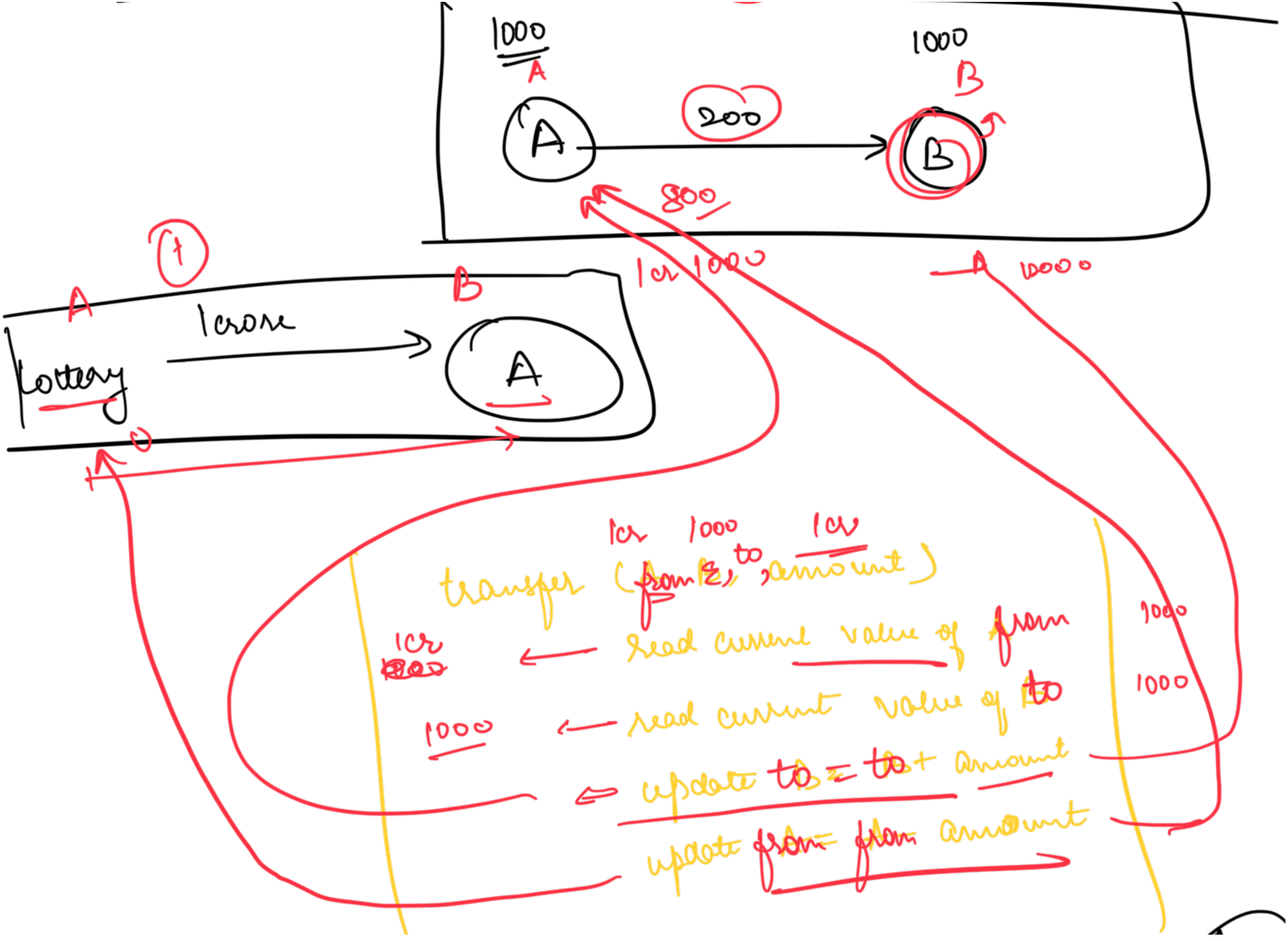
Everything or nothing

A → Atomicity

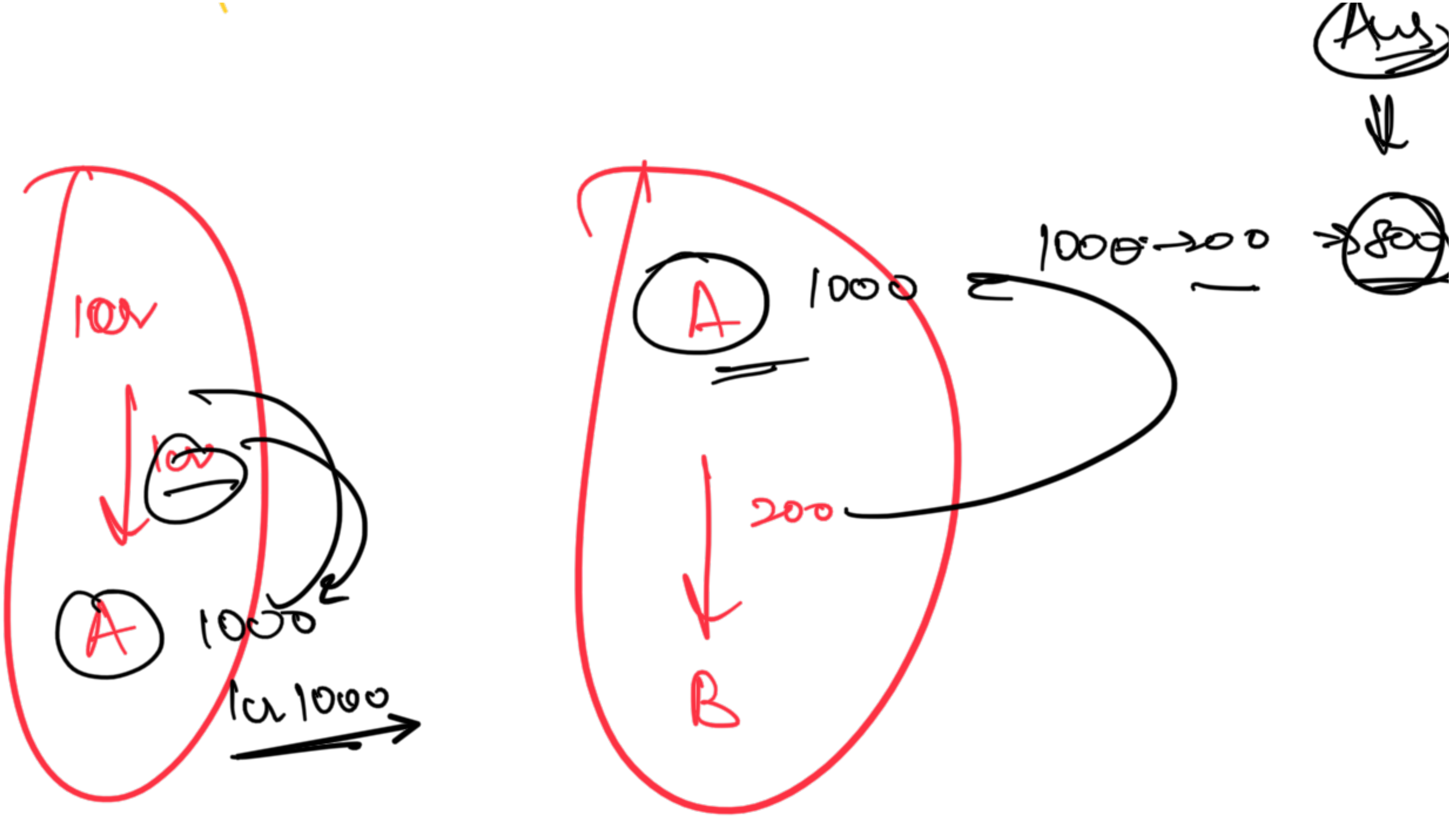
C → Consistency

I → Isolation

D → Durability



```
transfer (from, to, amount)
    read current value of from
    read current value of to
    update to = to + amount
    update from = from amount
```



→ cyclic request for locks

| T1 | T2 |
|---|---|

→ gets lock over 3

gets lock over 7

t

rollback

request lock over 7

⇒ T1 is waiting for t2 to complete

request lock over 3

⇒ T2 is waiting for T1 to complete

⇒ deadlock

→ In MySQL whenever detects deadlock it fails the earlier transaction

A → B fails

B → C succeeds

T1 has lock X

T2 requests lock which leads to deadlo

✓

CN → TTS → Naman

→ MANG → Tarun