

## Curriculum

(SQL)

- ① Intro to DBMS & SQL
- ② Keys
- ③ CRUD
- ④ JOINS → ②
- ⑤ Aggregates →
- ⑥ Subqueries
- ⑦ Index
- ⑧ Transactions → ② → Isolation Levels
- ⑨ Schema Design → ②

(13) days [PSP > 75% to 80%]

[LLD (Backend)]  
↳ SQL  
↳ Project ✓  
↳ LLD

ACID

Isolation Levels

Schema Design → ②

Data Types → String Date

Window fns/Procedures

Query Execution & Optimizn

ER Diag.

Database Normalizn

Recorded Lectures

## SQL 1 : Introduction to DBMS & Relational Model

Agenda →

- ① what is a database?
- ② " " DBMS?
- ③ Diff. types of databases
  - ↳ Relational
  - ↳ Non-Relational
- ④ Relational DB
- ⑤ Keys:
  - ↳ Super Keys
  - ↳ Candidate Keys
  - ↳ Primary Keys
  - ↳ Foreign Keys

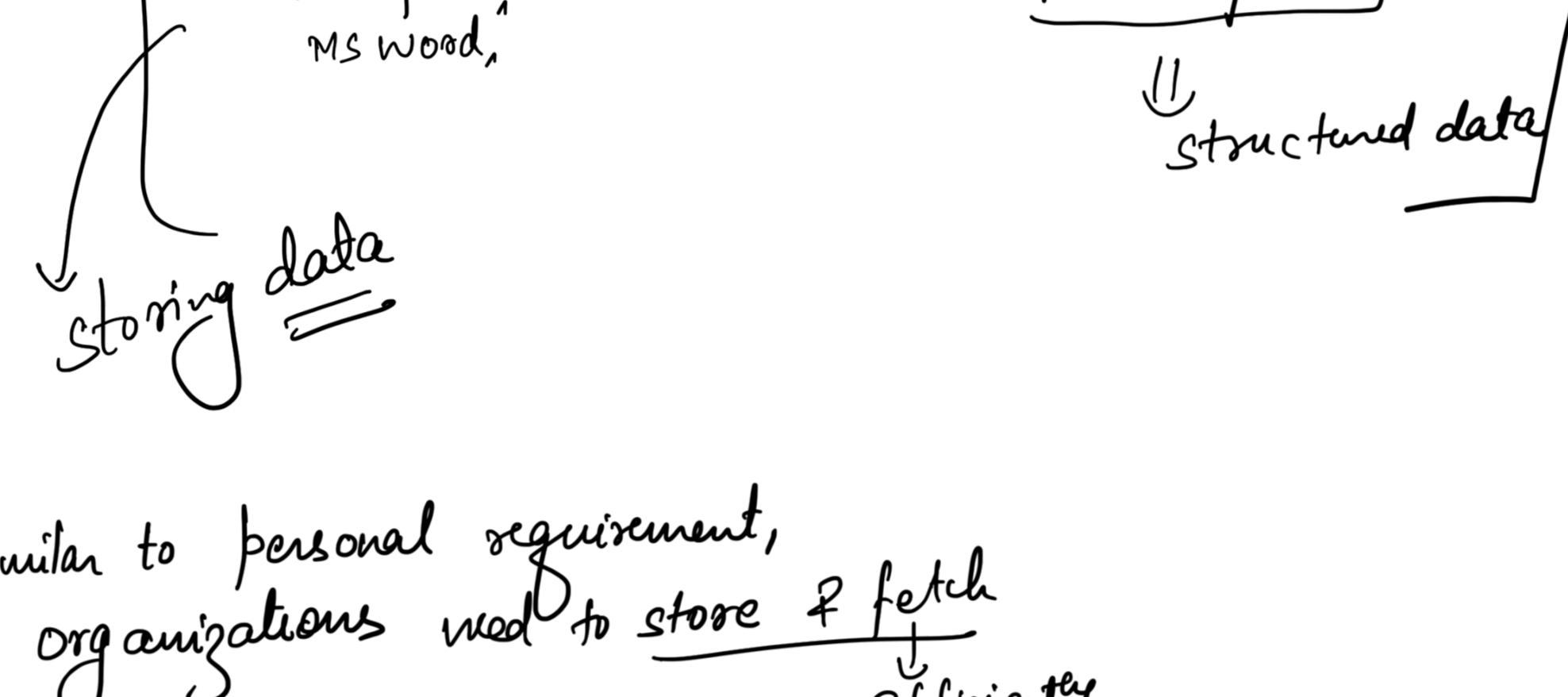
Q what is Database ?

How do you keep note of diff things around you?  
↓  
Storing + fetch (read)

↳ Diary  
↳ Notepad  
↳ Google Doc

Excel → Retrieval

↓  
Sheet views  
row & cols.



③ Similar to personal requirement, organisations need to store & fetch efficiently

Scalar → org.

Students.txt → Students → name, email, psp, batch\_id, resume, attendance, phoneNo, ...  
Content.txt → Content → questions, leaderboard, max, score  
Instructional.txt → Instructor → name, email, batch\_id, TA / Instructor → name, email, batch\_id, attendance, feedback, Course/Batch → id, ...

④ If DB is unknown to you,

Excel → ?  
CRUD →  
easy store (C)  
red difficult

name	psp	id	...
Kartik	001	98	94
Neil	001	74	89

SQL → Files

Create one file per type of item

CSV

Students.txt

1 name, batch\_id, psp, attendance, rank, ...

2 Kartik, 001, 98, 94, ...

3 Neil, 001, 74, 89, ...

"Neil was sick"

③ Difficulties w/ Files

→ Parsing -

↳ Sort

④ In a File → Sequential Read/Write

File (Case)

① Inefficiency reading data is slow, any ordering is not possible

② Sparsity issue

↳ No explicit control (row wise and column wise)

③ Data Integrity Issues

↳ Insertion/deletion

↳ Duplicate

↳ Corruption

④ What is Database ??

Algebra

Multiset

Database → collection of related data.

Students

Students