

# which DB to use SQL or NoSQL? why?

SQL: Structured Query Lang.  $\rightarrow$  used to query Relational DBMS.

↳ table, row, columns & there are relations between the tables.

### Structure

- Table, row, column,
- (pre-determined schema)

### Relation bet' tables

### Scalability

- Sharding is not well supported in Relational DBMS as there might be inter server joins

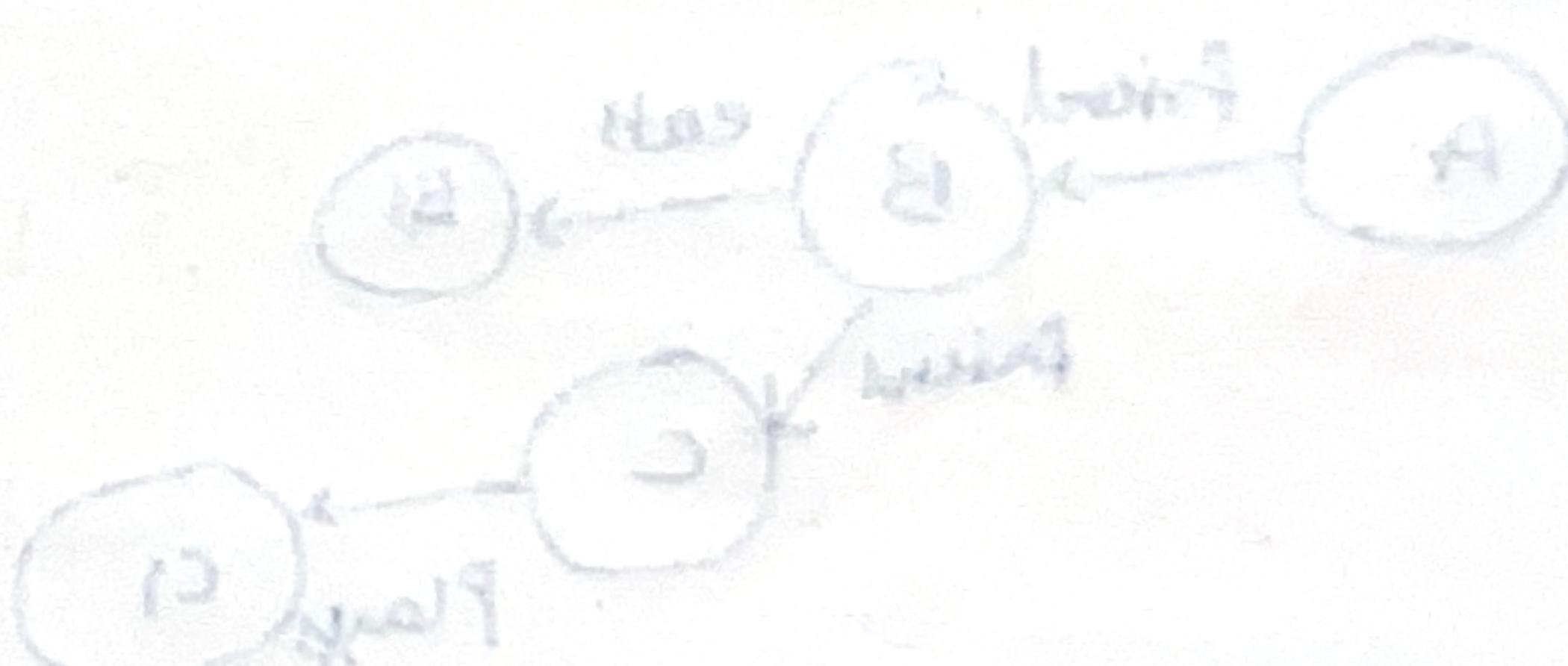
### Nature

- Concentrated or Centralized  $\Rightarrow$  all the data related to one entity are present in one server (same DB)
- Columns and tables

### Property

- Atomicity
- Consistency
- Isolation
- Durability

} Data Integrity / Consistency.



# NoSQL: Not Only SQL

## Structure

① Key-Value DB;

key → Value mapping  
 Search based on key      opaque  
 we can't query value

Nature

⇒ distributed in nature

② Document DB;

key → json/xml

can do query on json as well

Scalability

⇒ supports horizontal scaling

③ Columnwise DB;

key → List of

column1 value1

B  
A  
S  
E

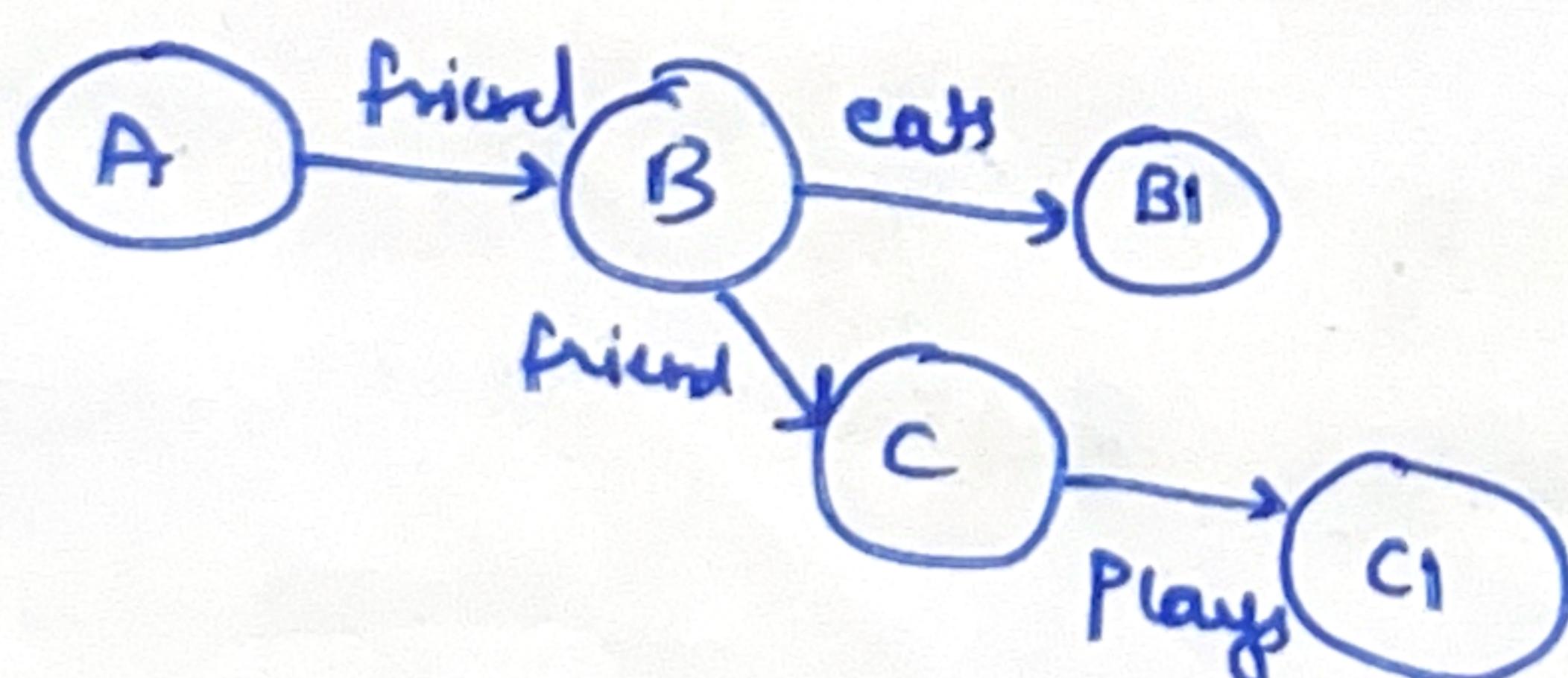
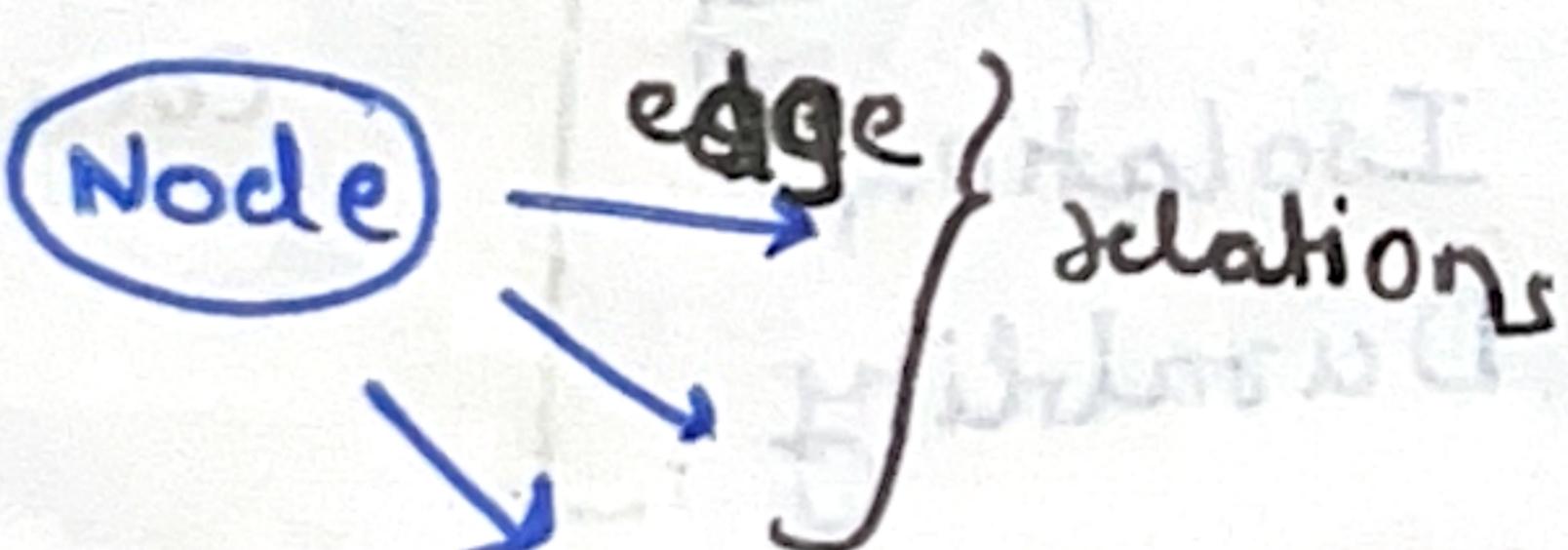
{ Basically Available,  
Safe state  
Eventual consistency }

BA - Highly available

S - State of data can be changed automatically while syncing to achieve correct state

E - eventually becomes consistent.

④ Graph DB



## # Where to Use :

### SQL

- Flexible Query
- Relational nature  
(dependency betw data)
- Data Integrity  
(can't loose single transaction)  
not losing consistency even for a sec.
- can compromise on Availability & Perf.

### NoSQL

- doesn't support complex Query. (basic Query)
- Not high dependency from the data is expected (Not relational)
- do not aim for integrity as base of its design & impl.
- Highly available & almost no downtime but can compromise on consistency a little bit. Extreme fast searching.