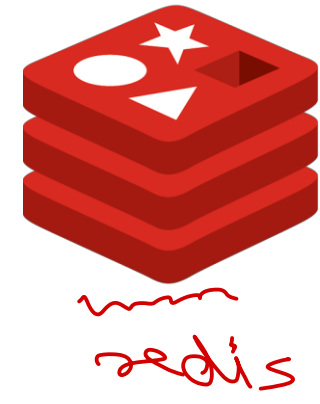
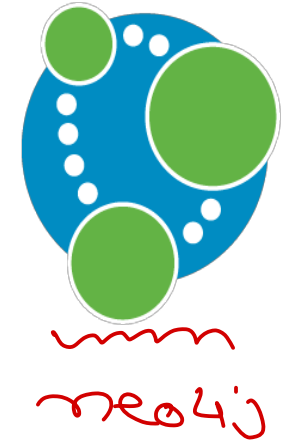
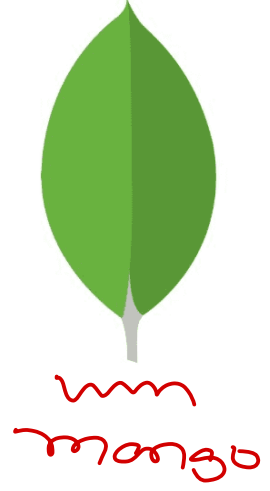


~~SOL~~

→ NoSQL  
~~~~~  
↓

Anti  
~~~~~



# NoSQL Databases

Trainer: Mr. Nilesh Ghule

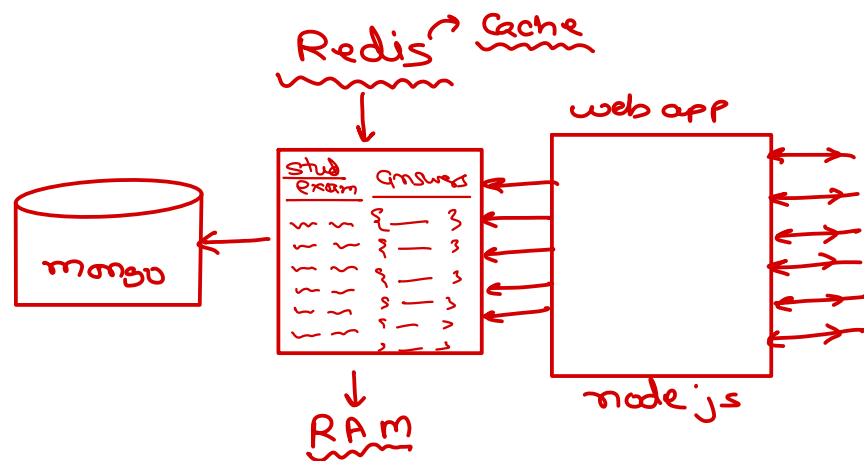
# NoSQL database

- NoSQL databases are non-relational.
- There is no standardization/rules of how NoSQL database to be designed.
- All available NoSQL databases can be broadly categorized as follows:
  - Key-value databases
  - Column-oriented databases
  - Graph databases
  - Document oriented databases



# Key-value database

- Based on Amazon's Dynamo database.
- For handling huge data of any type.
- Keys are unique and values can be of any type i.e. JSON, BLOB, etc.
- Implemented as big distributed hash-table for fast searching.
- Example: redis, dynamodb, riak, ...



Redis : C/C++ → Unix only

- based on data structures
- light weight DS are made available to apps with min/no abstraction.

→ available DS

- list, Set, string, hash map

LPUSH

SADD

SET  
GET

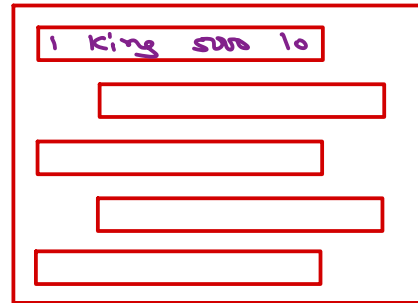
HM



# Column-oriented databases

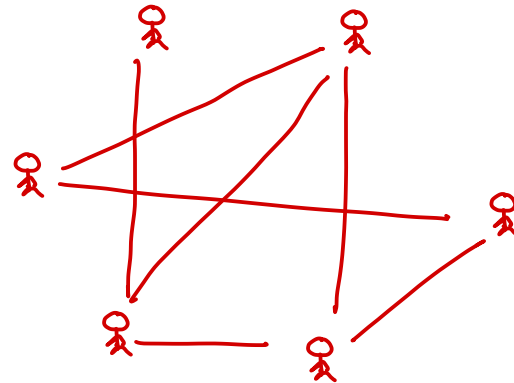
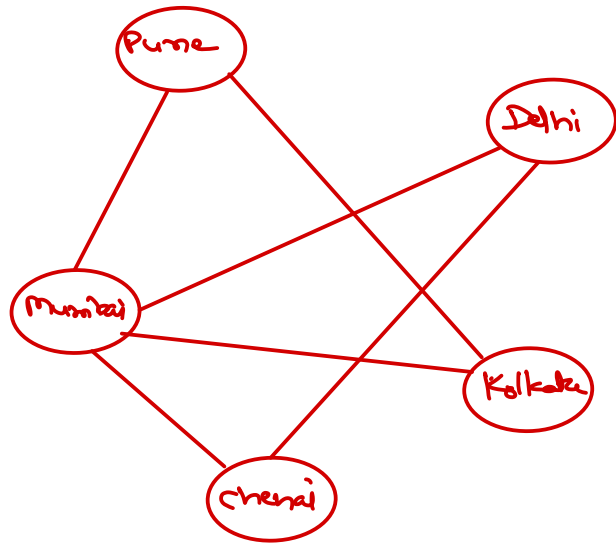
- Values of columns are stored contiguously.
- Better performance while accessing few columns and aggregations.
- Good for data-warehousing, business intelligence, CRM, ...
- Examples: hbase, cassandra, bigtable, ...

ename	sal	deptno	job
1 King	1 5000	1 10	1 P
2 James	2 920	2 30	2 S
3 Smith	3 800	3 20	3 C
...	...	...	...



# Graph databases

- Graph is collection of vertices and edges (lines connecting vertices).
- Vertices keep data, while edges represent relationships.
- Each node knows its adjacent nodes. Very good performance, when want to access all relations of an entity (irrespective of size of data).
- Examples: Neo4J, Titan, ...



# Document oriented databases

CAP

- Document contains data as key-value pair as JSON or XML.
- Document schema is flexible & are added in collection for processing.
- RDBMS tables → Collections
- RDBMS rows → Documents
- RDBMS columns → Key-value pairs in document
- Examples: MongoDb, CouchDb, ...

↓  
CP

↓  
AP

→ fields





Thank you!

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