CLOUD COMPUTING APPLICATIONS
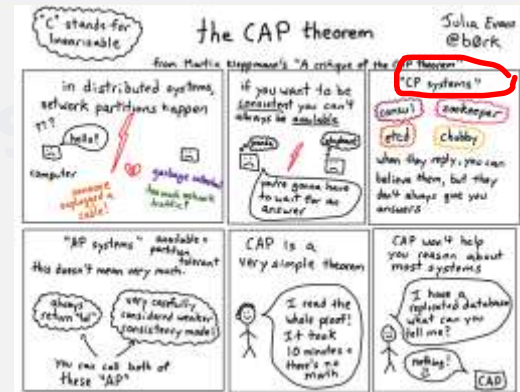
Cloud Databases (DBaaS)

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Overview

- OLTP, SQL
  - Traditional SQL RDBMS
  - Cloud Optimized
- NewSQL
  - Spanner
  - CosmosDB
- NoSQL
  - Key/Value
  - Wide-Column
  - Document
  - Graph
  - In-Memory

NewSQL

- NewSQL is a class of relational database management systems
  - Scalability of NoSQL systems for online transaction processing (OLTP) workloads
  - ACID guarantees of a traditional database system
- SQL as their primary interface
- Components
  - Distributed concurrency control
  - Flow control
  - Distributed query processing
- Automatically split databases across multiple nodes using Raft or Paxos consensus algorithm
- Consistency over availability (CP from CAP)
  - Strong consistency
  - Sacrificing some availability

Four NoSQL Categories

Key-Value

Graph DB

BigTable

Document