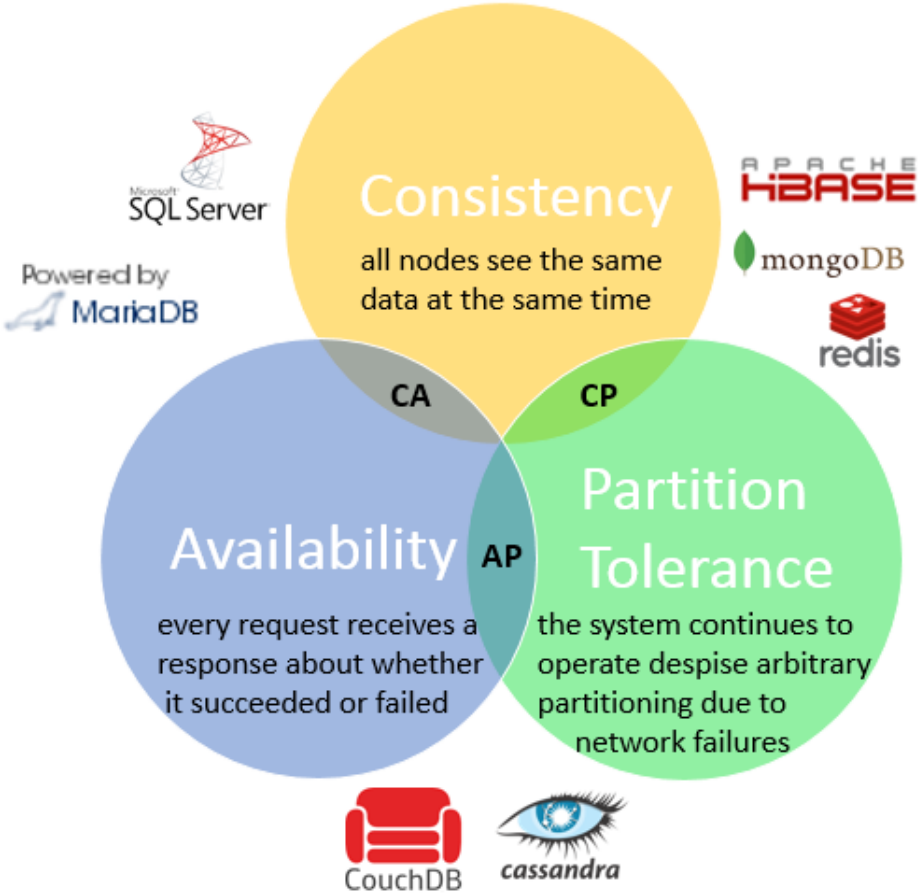
CIERRE TÉCNICAS AVANZADAS DE BASE DE DATOS

SERGIO ÁLVAREZ

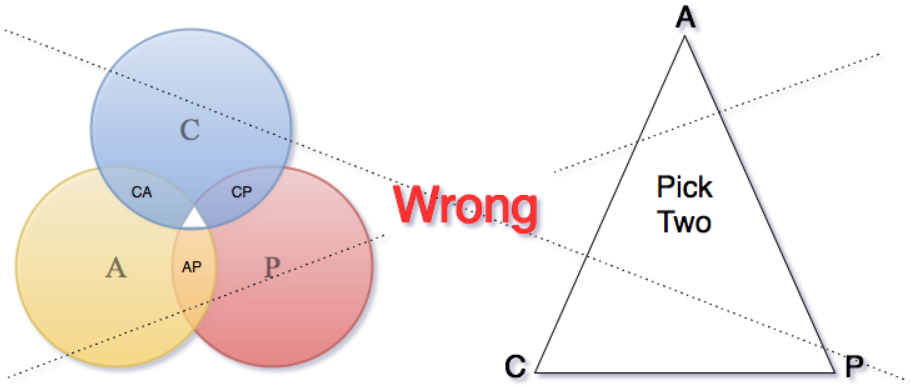
VERSIÓN 1.2

CONCEPTOS BÁSICOS

TEOREMA DE CAP

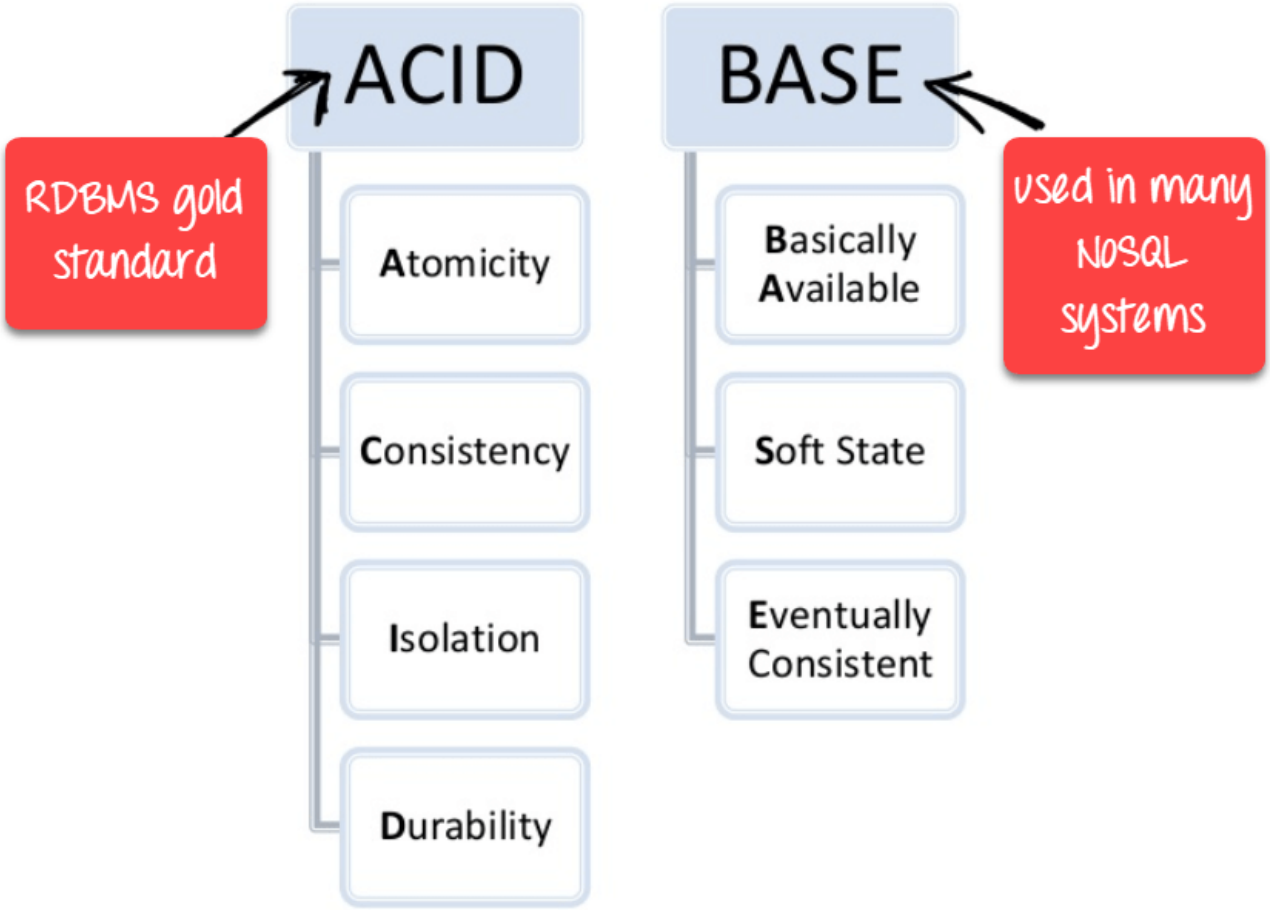


ANTI TEOREMA DE CAP



In the event of a partition choose one

ACID VS BASE

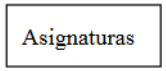


PROCESO DISEÑO

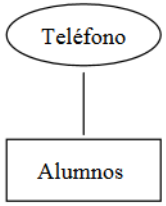
MODELO LÓGICO

MODELO ENTIDAD RELACIÓN

- Tipos de entidades: Rectángulos.

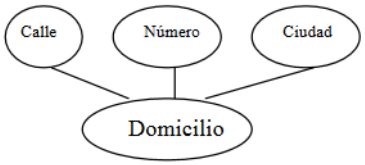


- Atributos: Elipses. Se conectan mediante líneas a los tipos de entidades o tipos de relación.

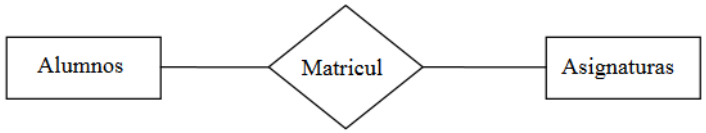


- Atributos multivalorados: Una elipse con doble línea:

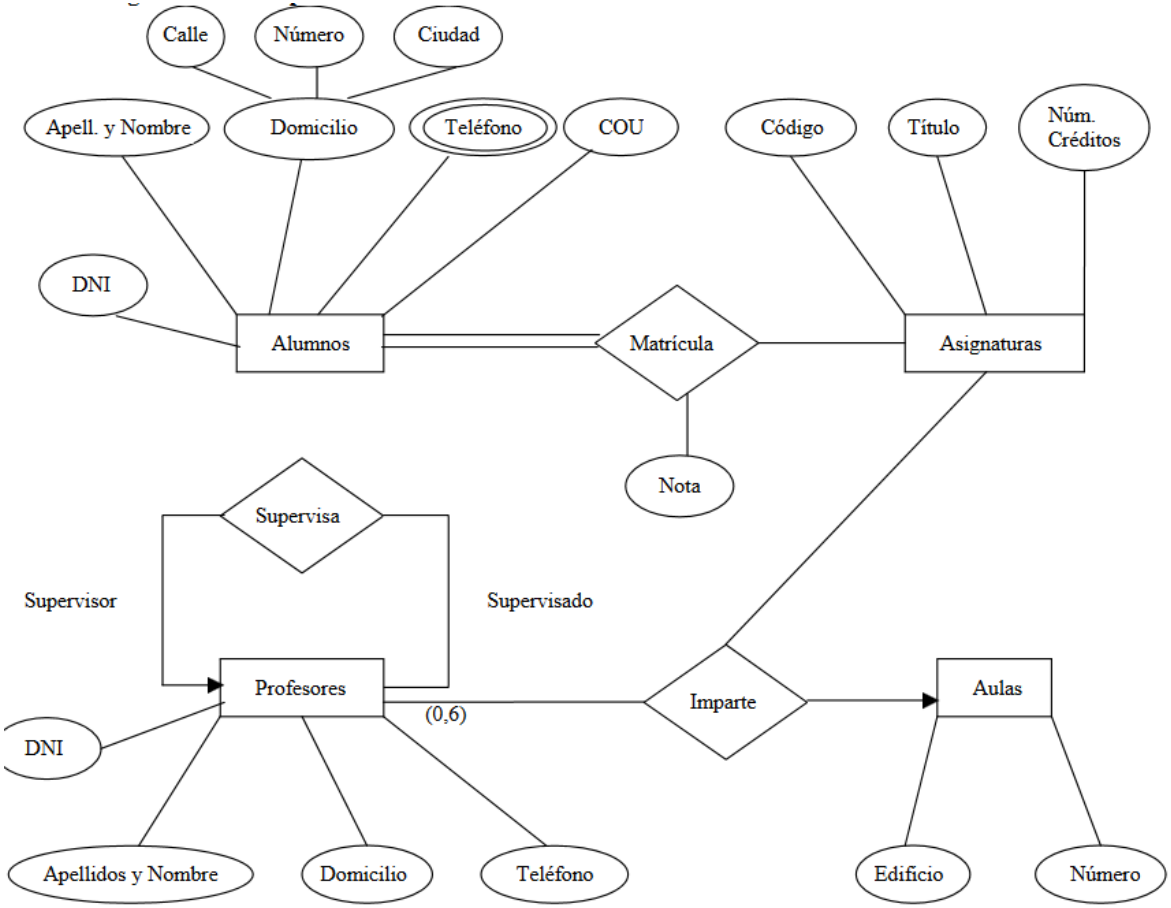
- Atributos compuestos. Los componentes de un atributo se representan a su vez como atributos:



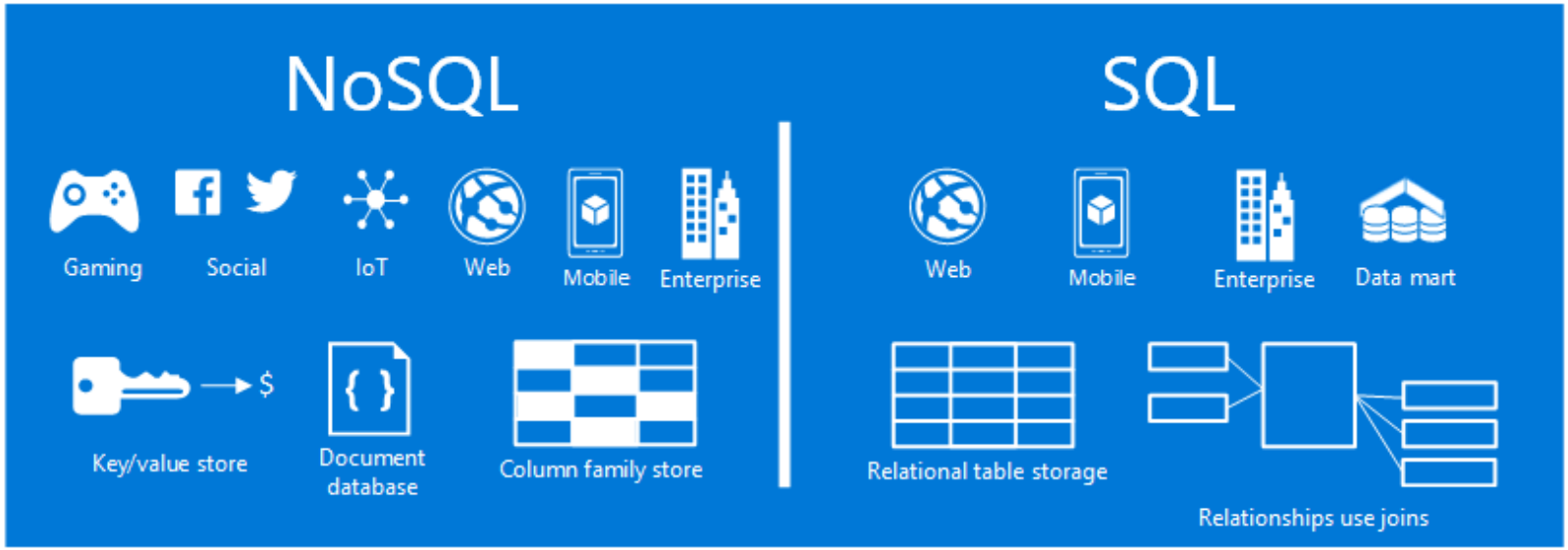
- Tipos de Relación: Rombos conectados a los tipos de entidades que relacionan.



MODELO ENTIDAD RELACIÓN



NOSQL VS SQL



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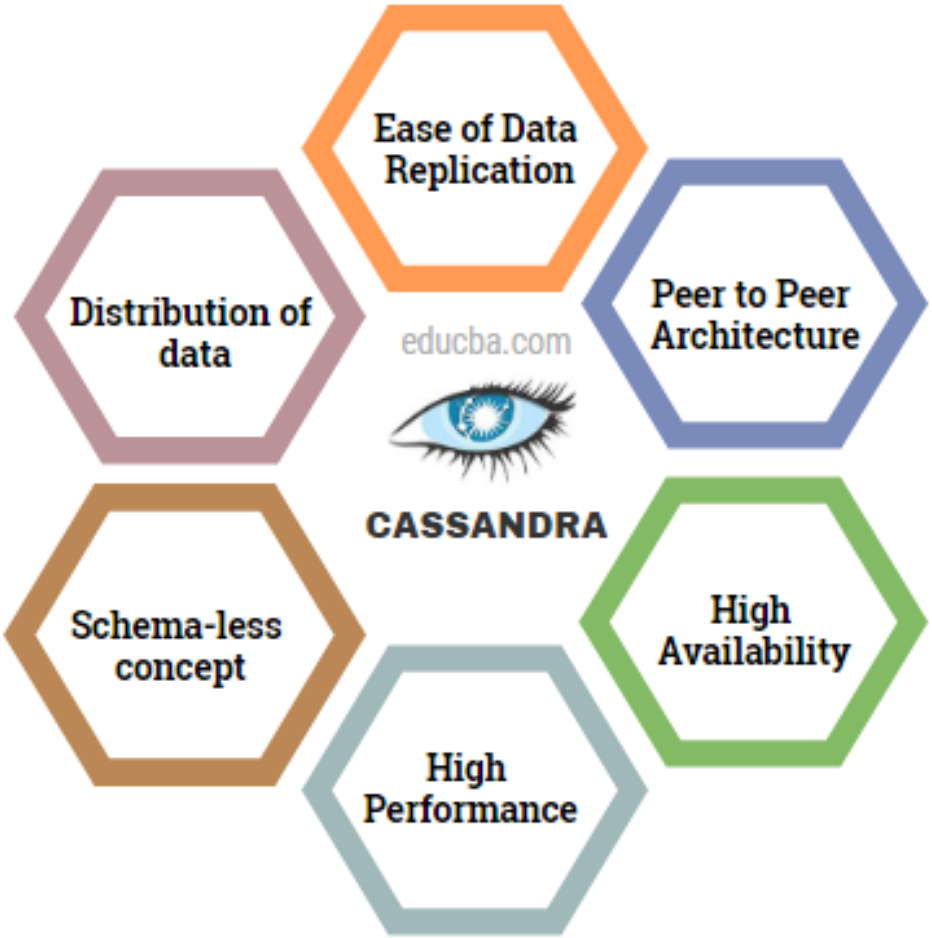
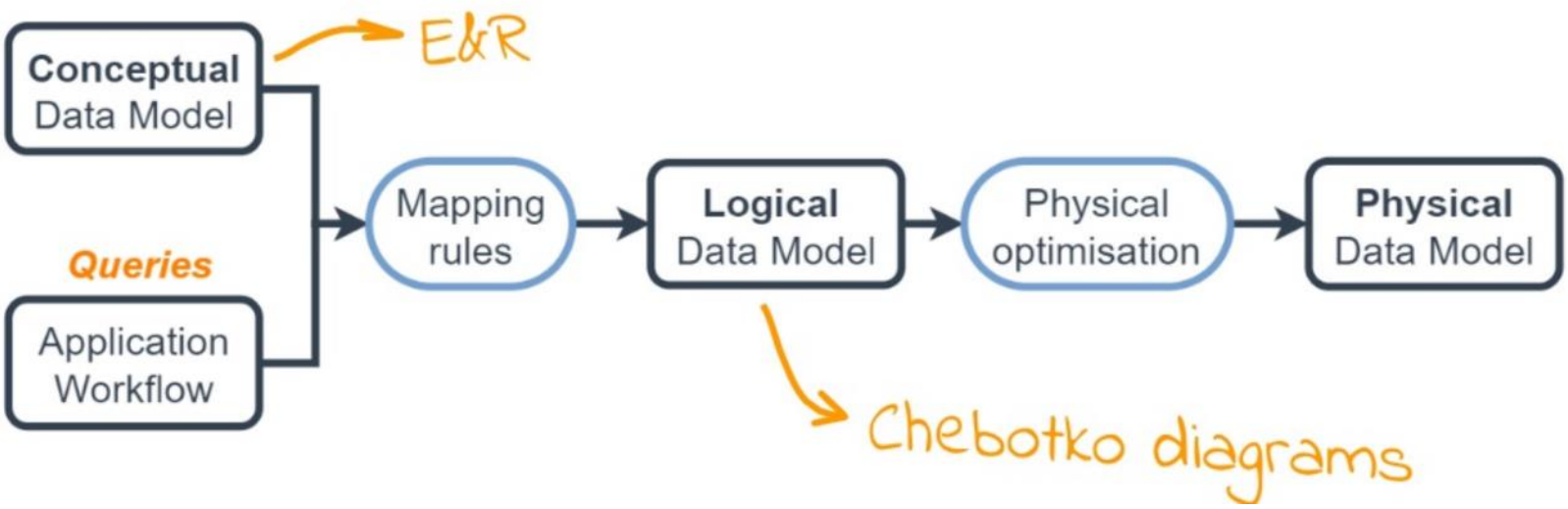
NOSQL – APACHE CASSANDRA

QUE ES CASSANDRA



APACHE CASSANDRA



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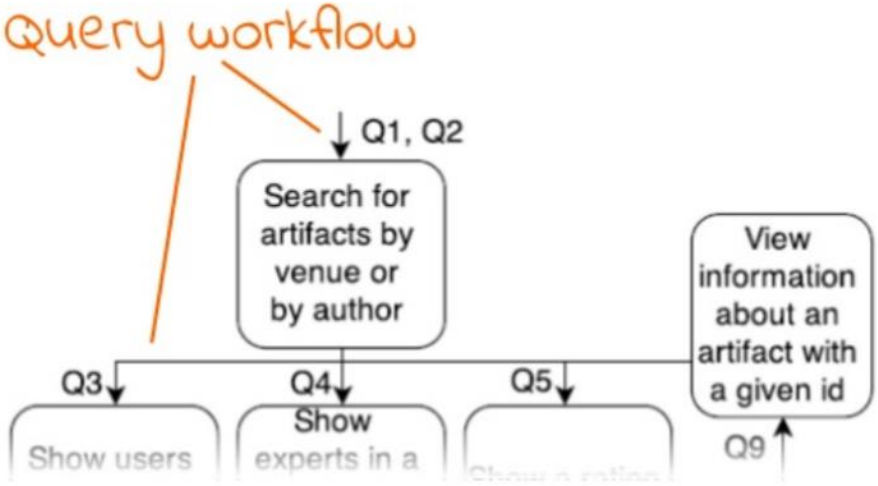
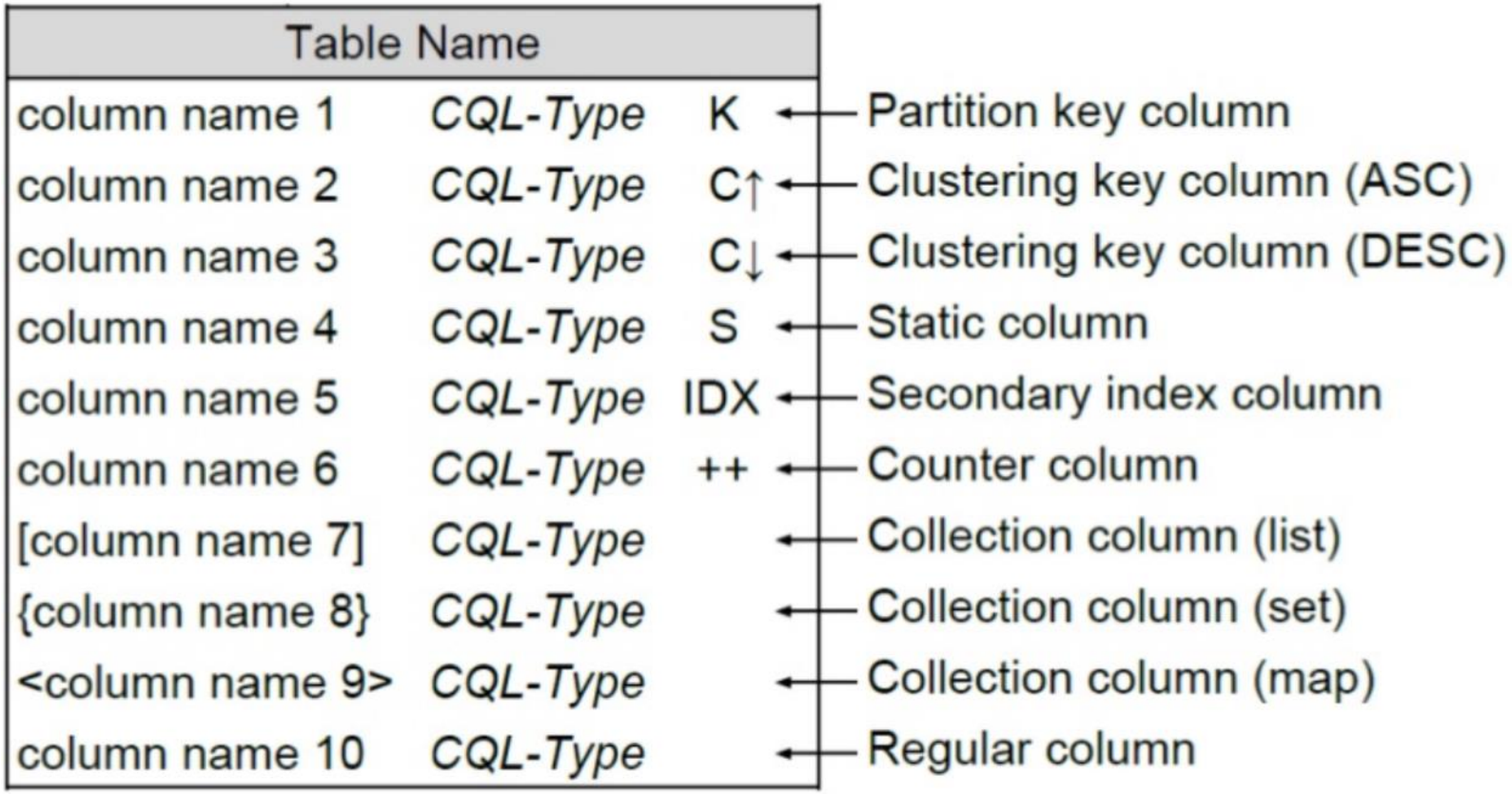
APACHE CASSANDRA



Query list

Q1: Find artifacts published in a venue with a given name after a given year. Order results by year (DESC).
Q2: Find artifacts published by a given author. Order results by year (DESC).
Q3: Find users who liked a given artifact.
Q4: Find users who liked a given artifact and who have expertise in a certain area.

APACHE CASSANDRA

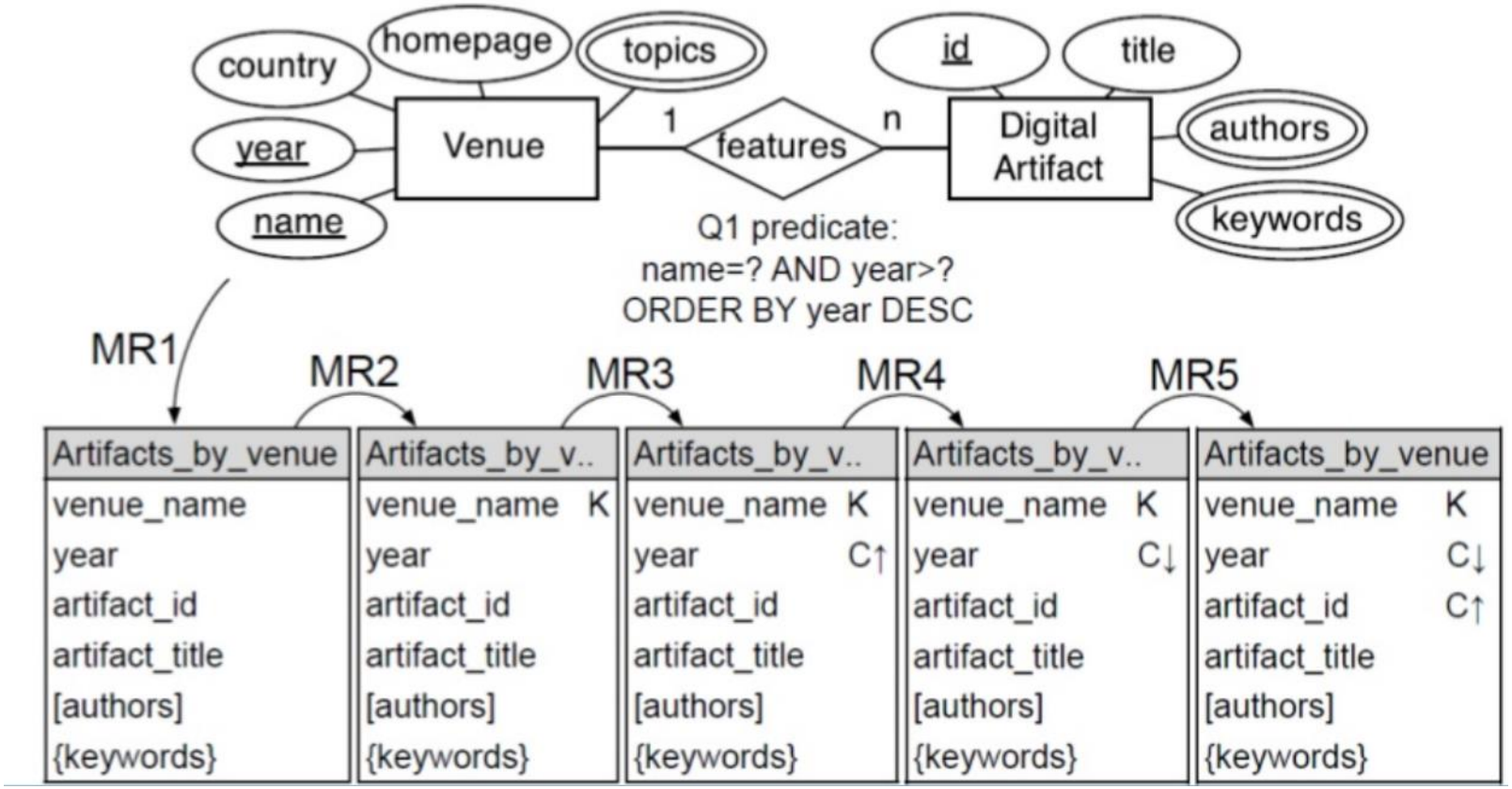


APACHE CASSANDRA

```
CREATE TABLE actors_by_video (
  video_id uuid,
  actor_name text,
  character_name text,
  PRIMARY KEY ((video_id), actor_name, character_name)
);
```

actors_by_video		
video_id	uuid	K
actor_name	text	C↑
character_name	text	C↑

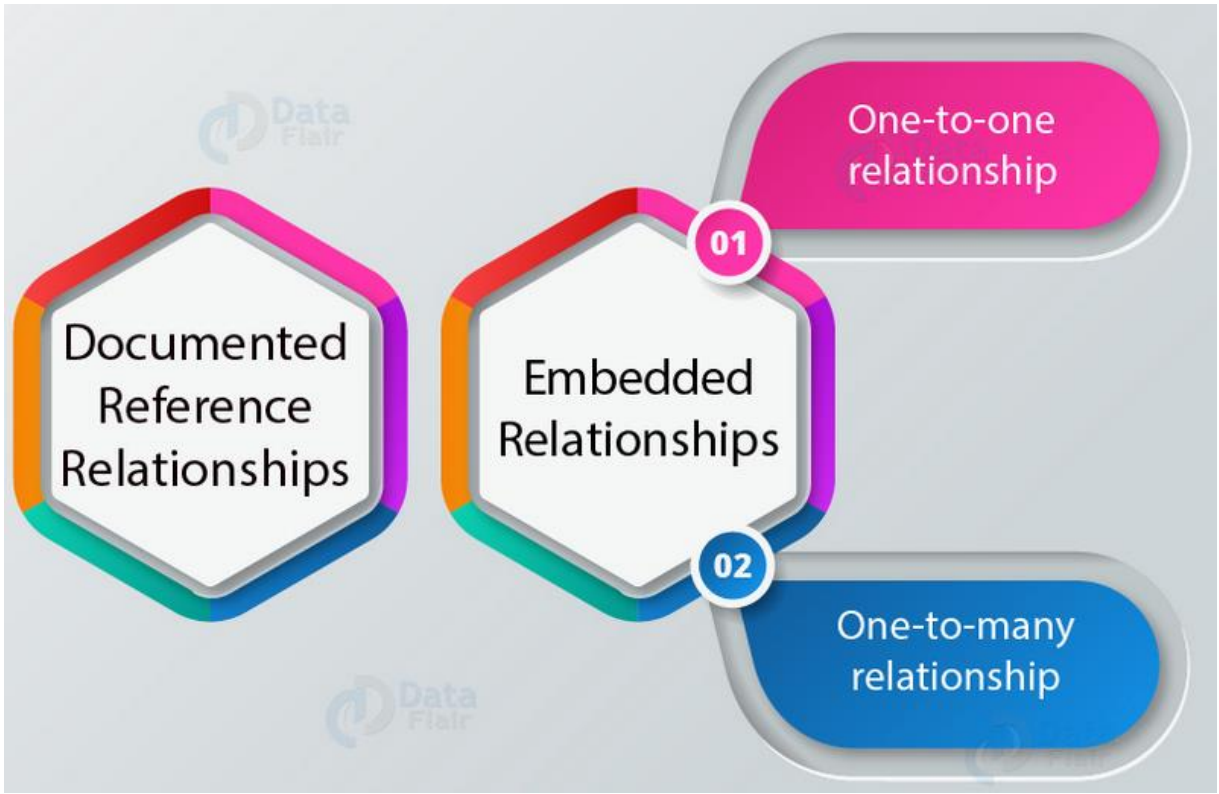
APACHE CASSANDRA



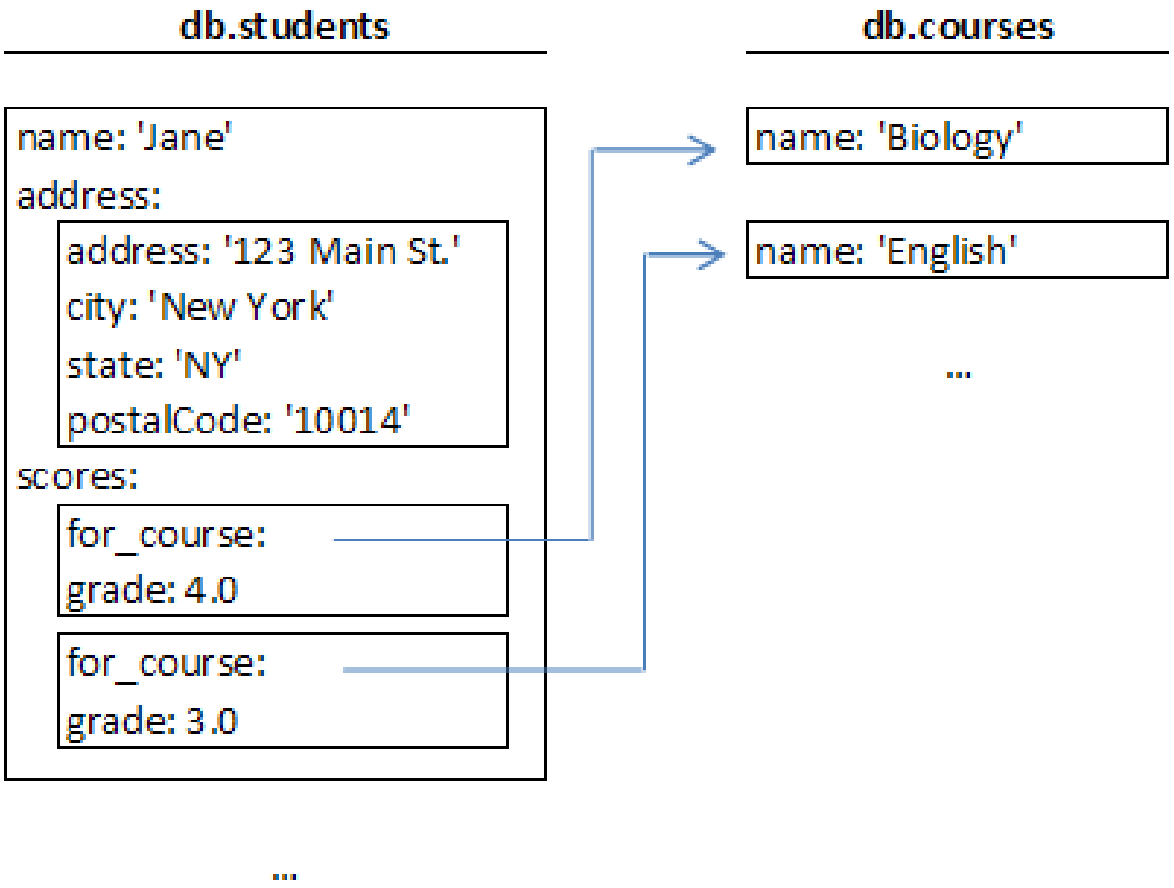
NOSQL – MONGO

QUE ES MONGO

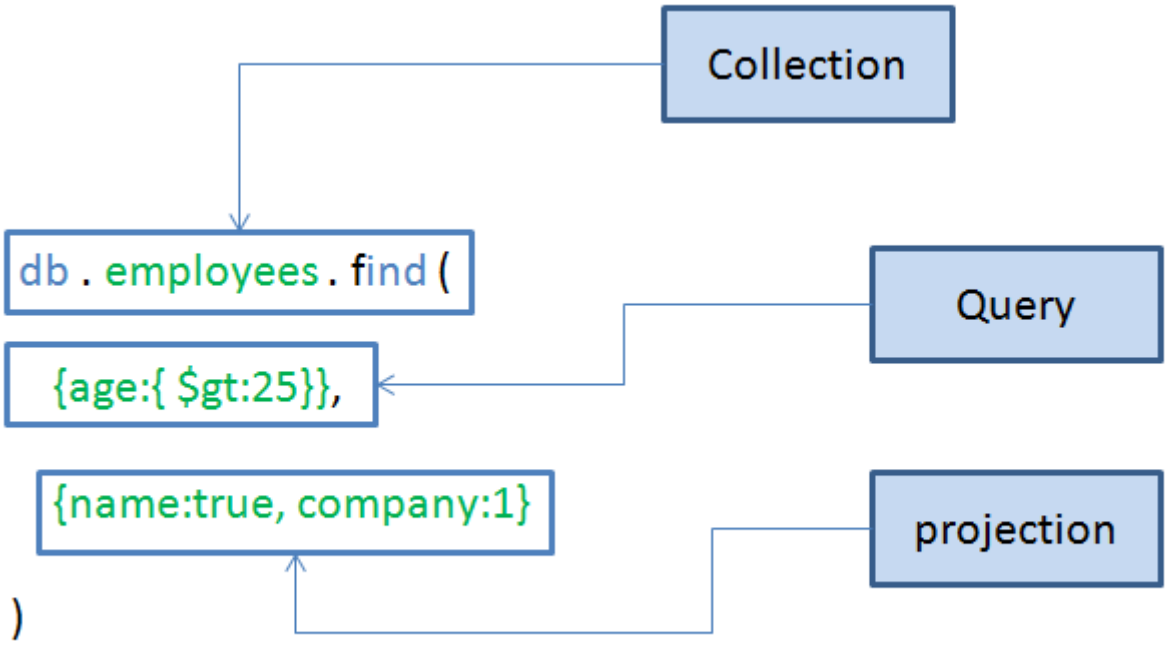
MONGODB RELATIONSHIPS (EMBEDDED & REFERENCE)



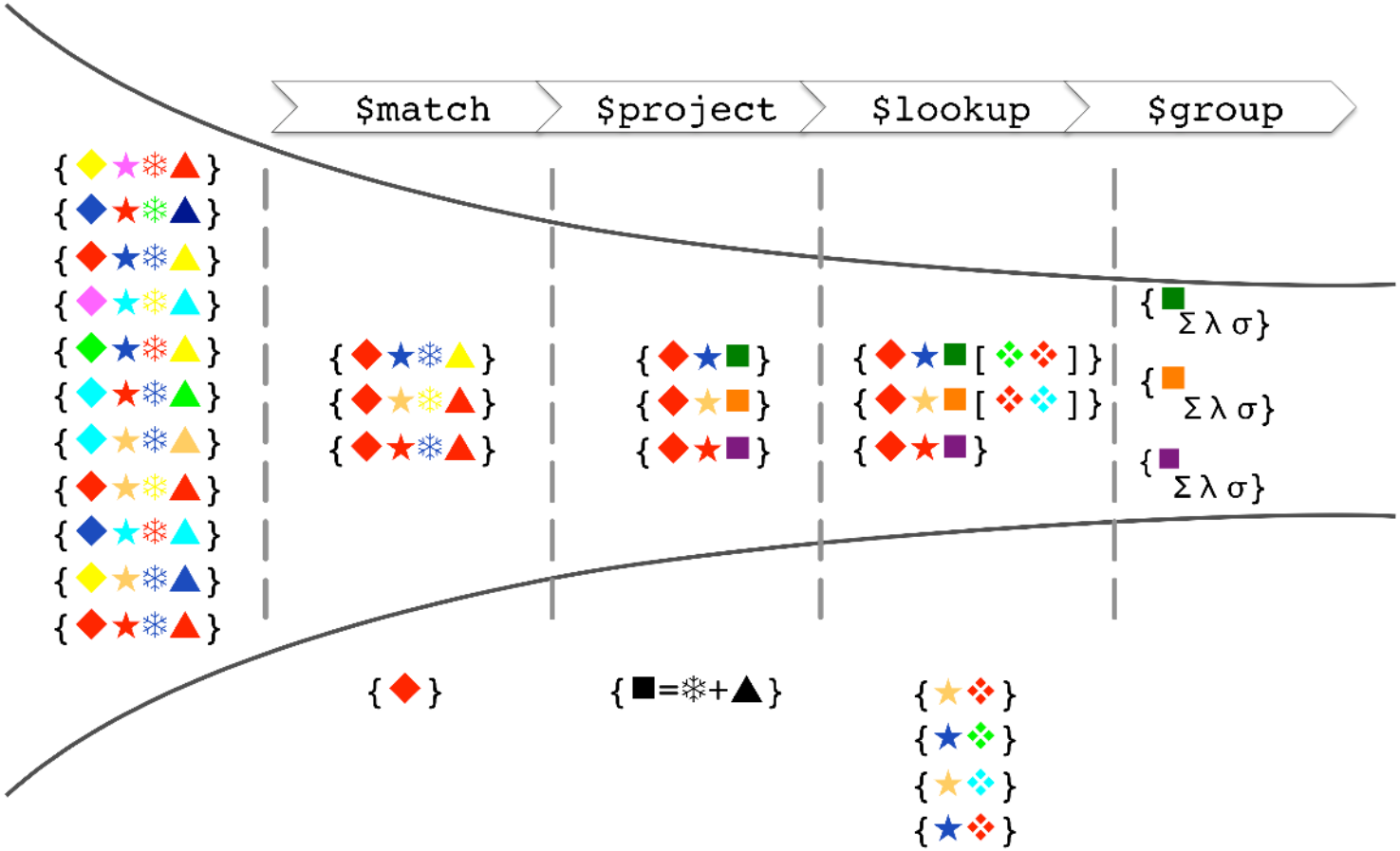
MONGODB RELATIONSHIPS (EMBEDDED & REFERENCE)



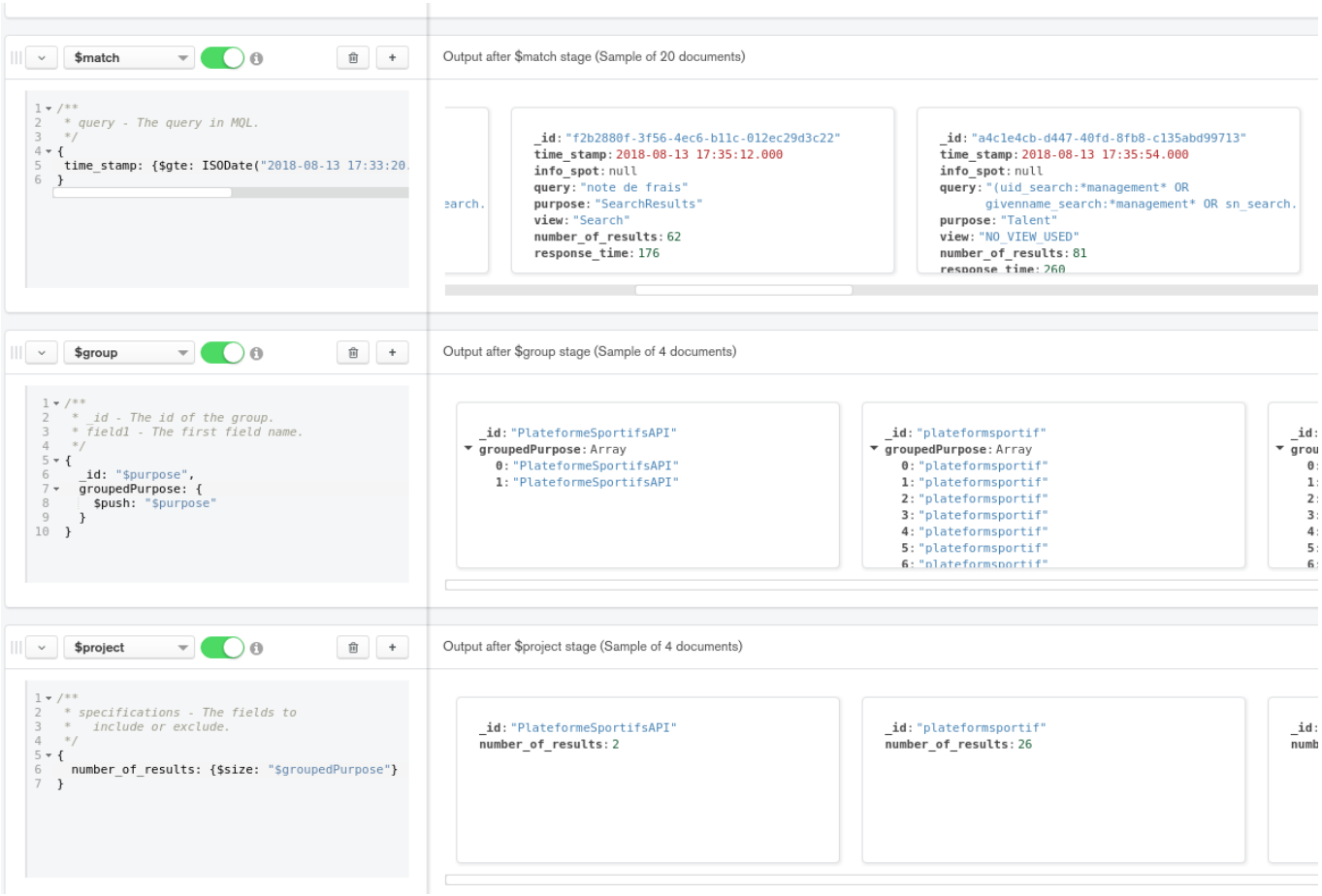
CONSULTAS



CONSULTAS AVANZADAS

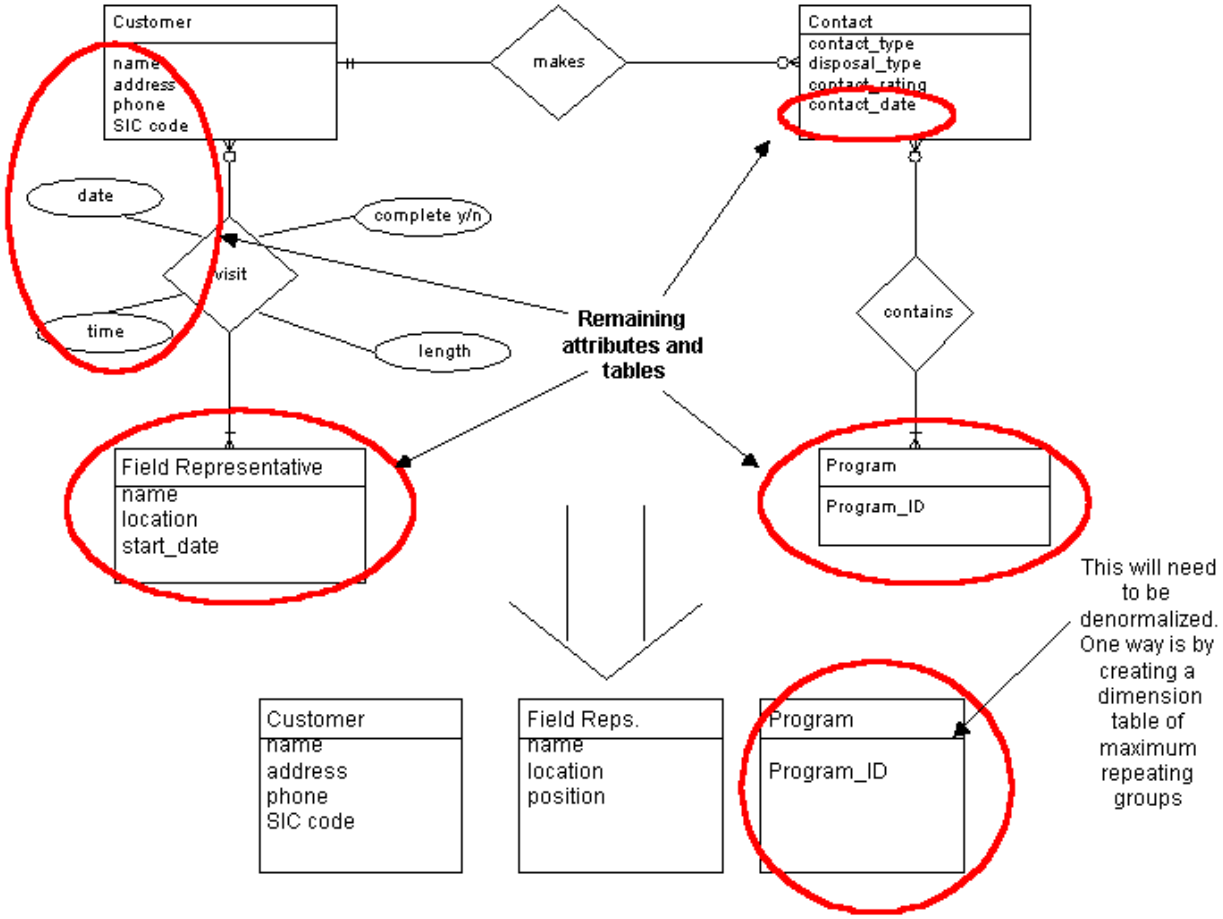


CONSULTAS AVANZADAS

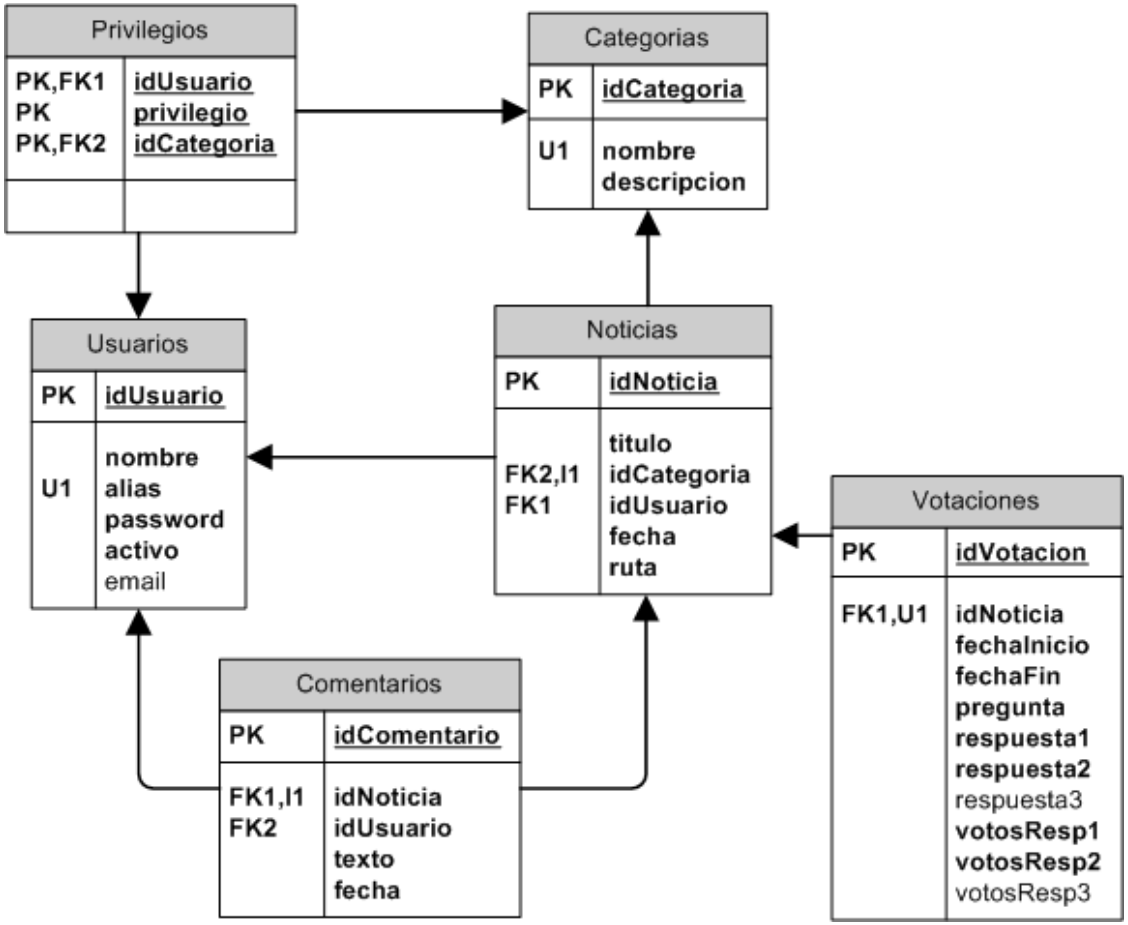


BASES DE DATOS RELACIONALES

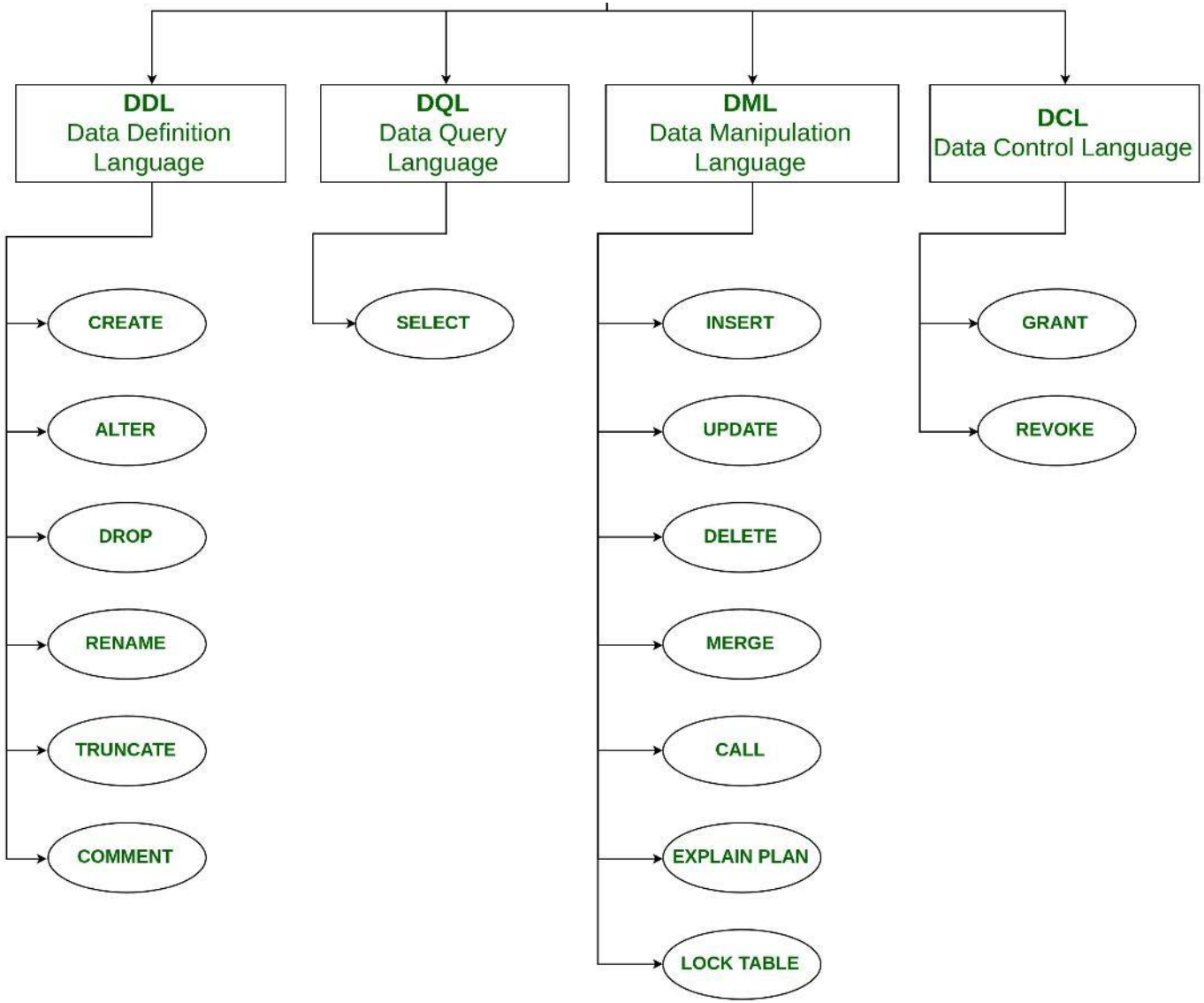
MODELO E-R A RELACIONAL



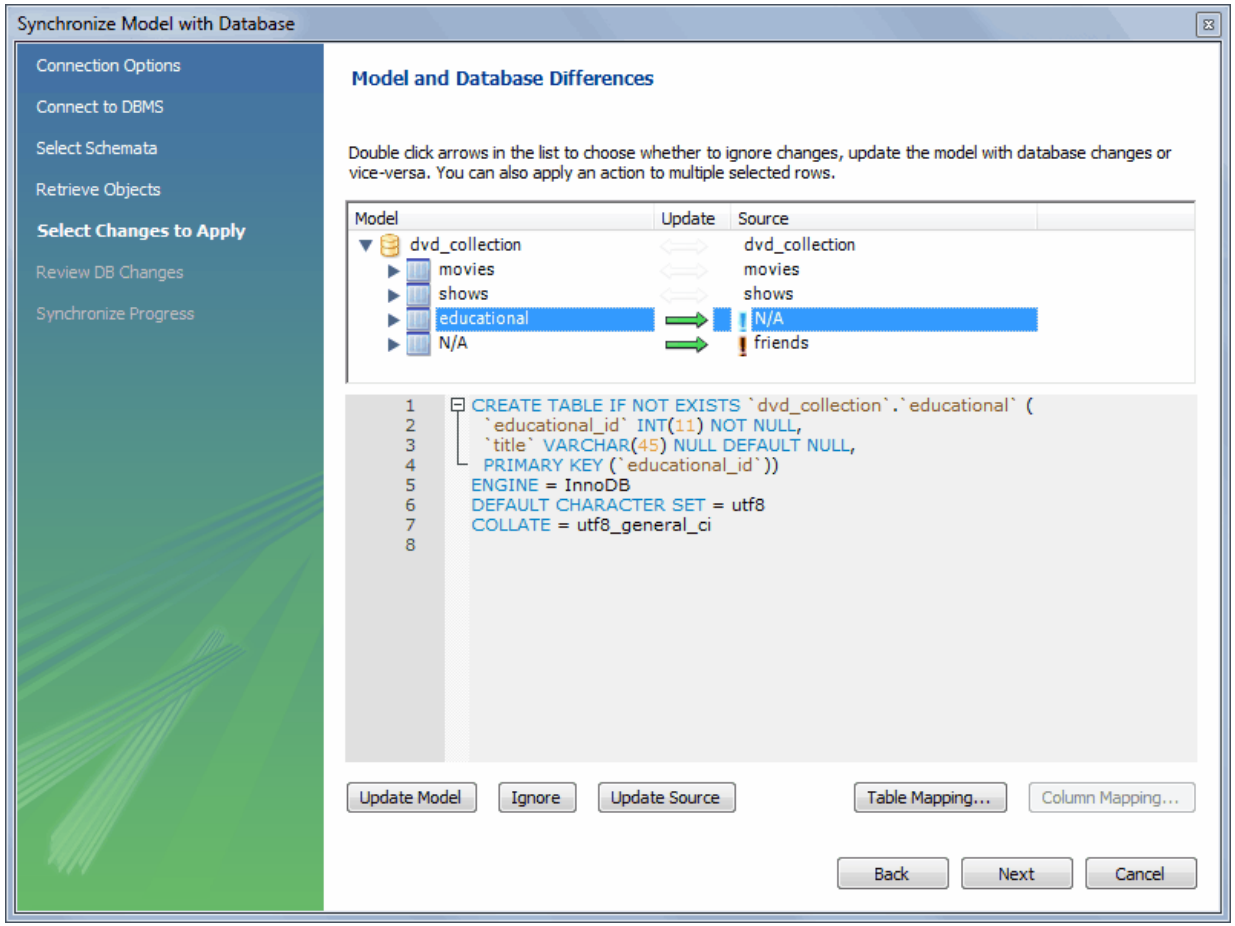
MODELO RELACIONAL



COMANDOS SQL



HERRAMIENTAS CASE



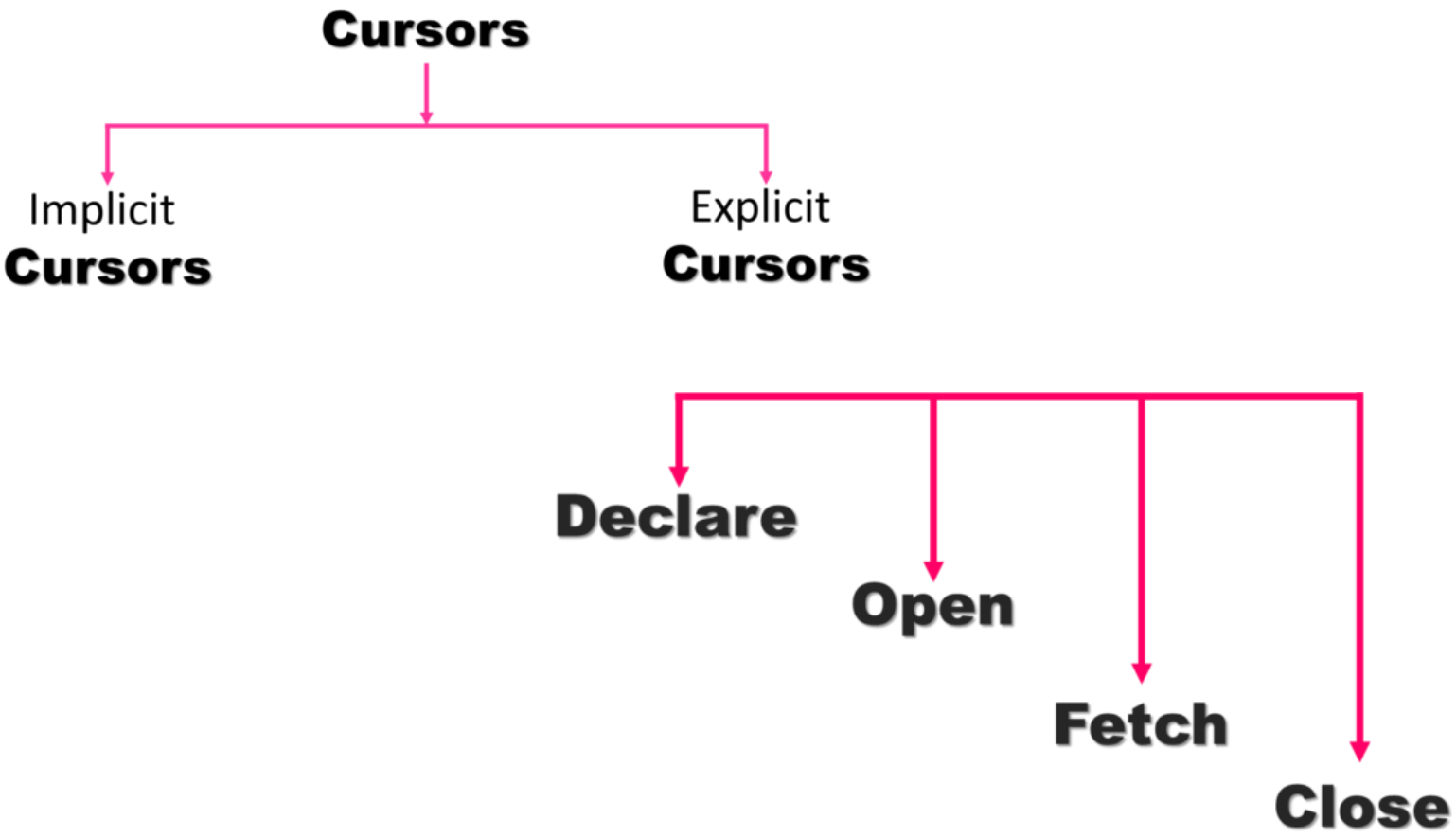
OPCIÓN PROCEDIMENTAL

Query | sp2

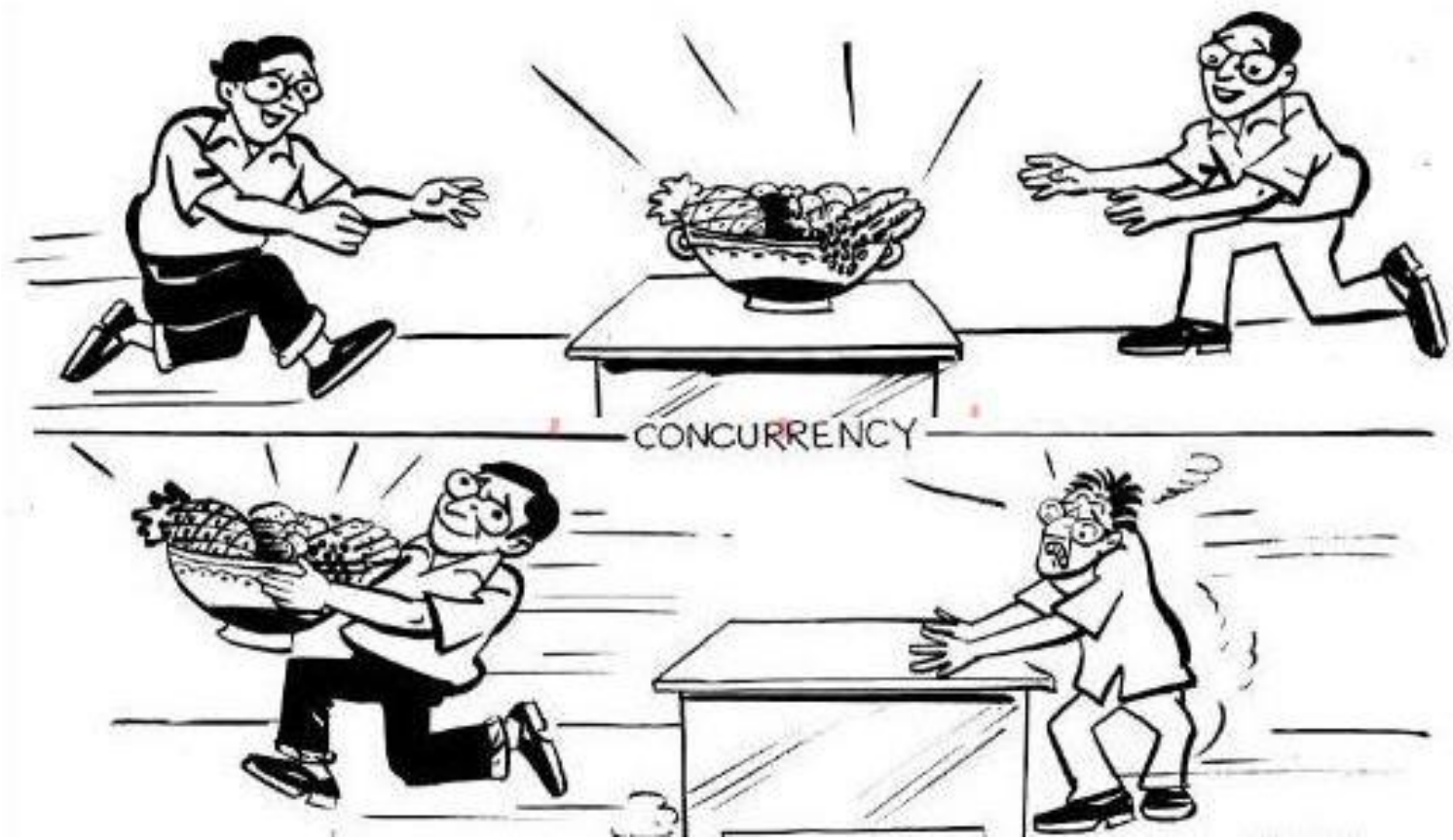
```
1   DELIMITER $$
2
3   CREATE
4       /*[DEFINER = { user | CURRENT_USER }]*/
5       PROCEDURE `world`.`sp2`()
6       /*LANGUAGE SQL
7       | [NOT] DETERMINISTIC
8       | { CONTAINS SQL | NO SQL | READS SQL DATA | MODIFIES SQL DATA }
9       | SQL SECURITY { DEFINER | INVOKER }
10      | COMMENT 'string'*/
11      BEGIN
12  INSERT INTO `world`.`countrylanguage` (`CountryCode`) VALUES ('088');
13      END$$
14
15  DELIMITER ;
```

TEMAS NUEVOS BASES DE DATOS RELACIONALES

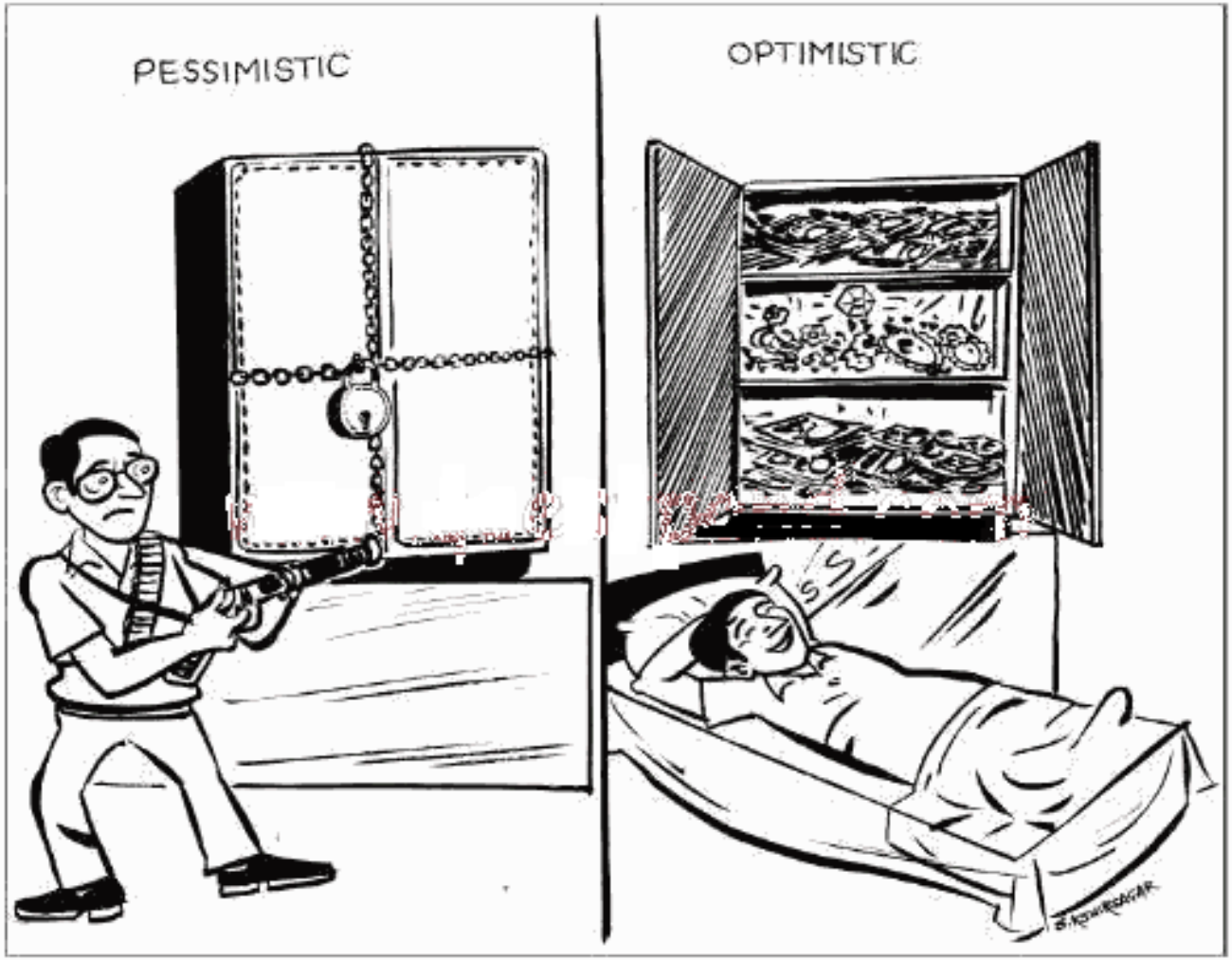
CURSORES



CONCURRENCIA



CANDADOS



CANDADOS

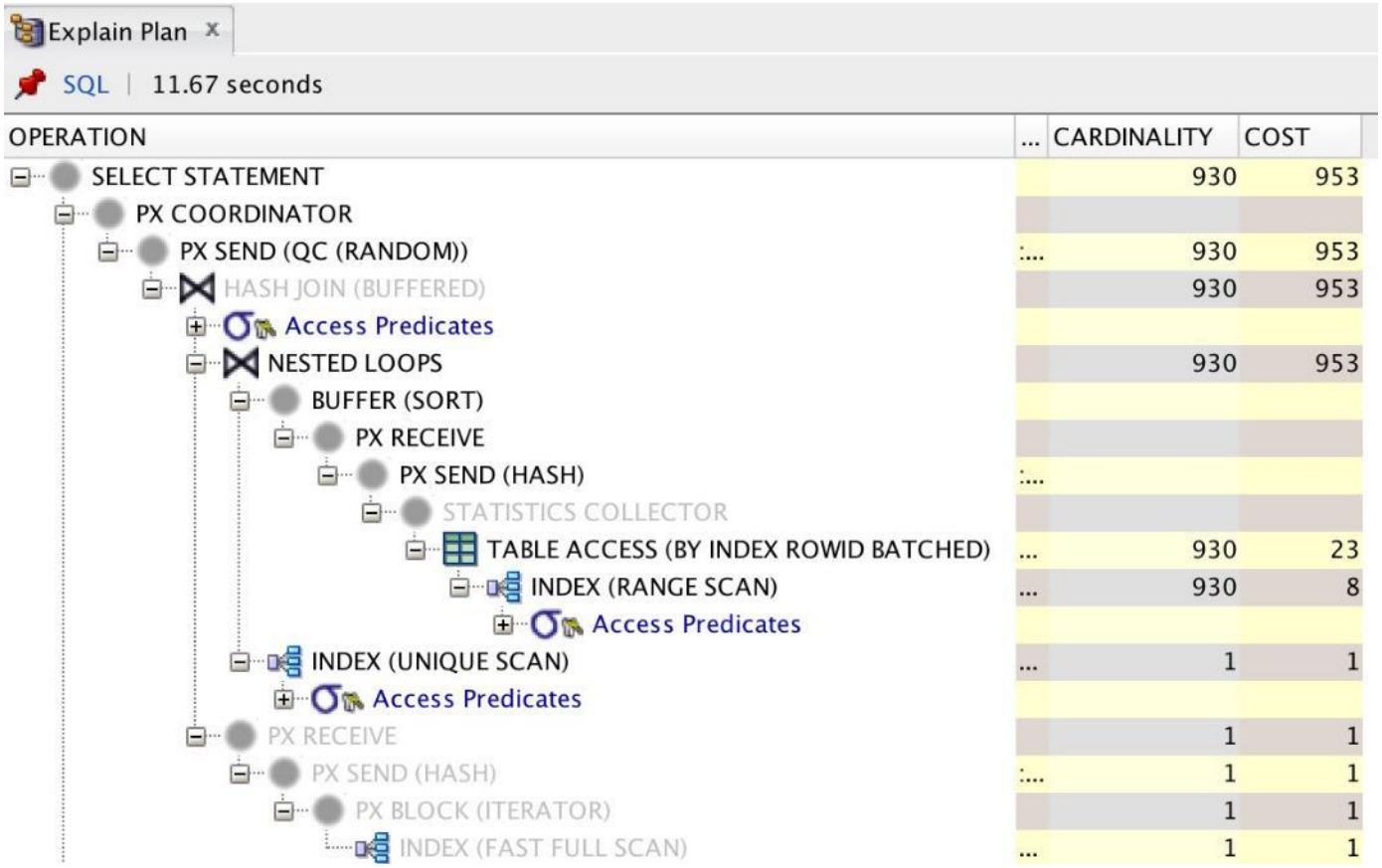
Guaranteed Deadlock (Concurrent Transactions)

Transaction 1		Transaction 2	
Begin transaction		Begin transaction	
Update table Supplier	lock	Update table Part	lock
Update table Part		Update table Supplier	
Commit transaction	wait	Commit transaction	wait

No Deadlock

Transaction 1		Transaction 2	
Begin transaction		Begin transaction	
Update table Supplier	lock	Update table Supplier	wait
Update table Part		Update table Part	
Commit transaction	lock	Commit transaction	wait

OPTIMIZACIÓN



OPERATION	...	CARDINALITY	COST
SELECT STATEMENT		930	953
PX COORDINATOR			
PX SEND (QC (RANDOM))	:...	930	953
HASH JOIN (BUFFERED)		930	953
Access Predicates			
NESTED LOOPS		930	953
BUFFER (SORT)			
PX RECEIVE			
PX SEND (HASH)	:...		
STATISTICS COLLECTOR			
TABLE ACCESS (BY INDEX ROWID BATCHED)	...	930	23
INDEX (RANGE SCAN)	...	930	8
Access Predicates			
INDEX (UNIQUE SCAN)	...	1	1
Access Predicates			
PX RECEIVE		1	1
PX SEND (HASH)	:...	1	1
PX BLOCK (ITERATOR)		1	1
INDEX (FAST FULL SCAN)	...	1	1

TANTO POR APRENDER!

EVALUACIÓN

PREGUNTAS
SELECCIÓN MÚLTIPLE

Pregunta **1**

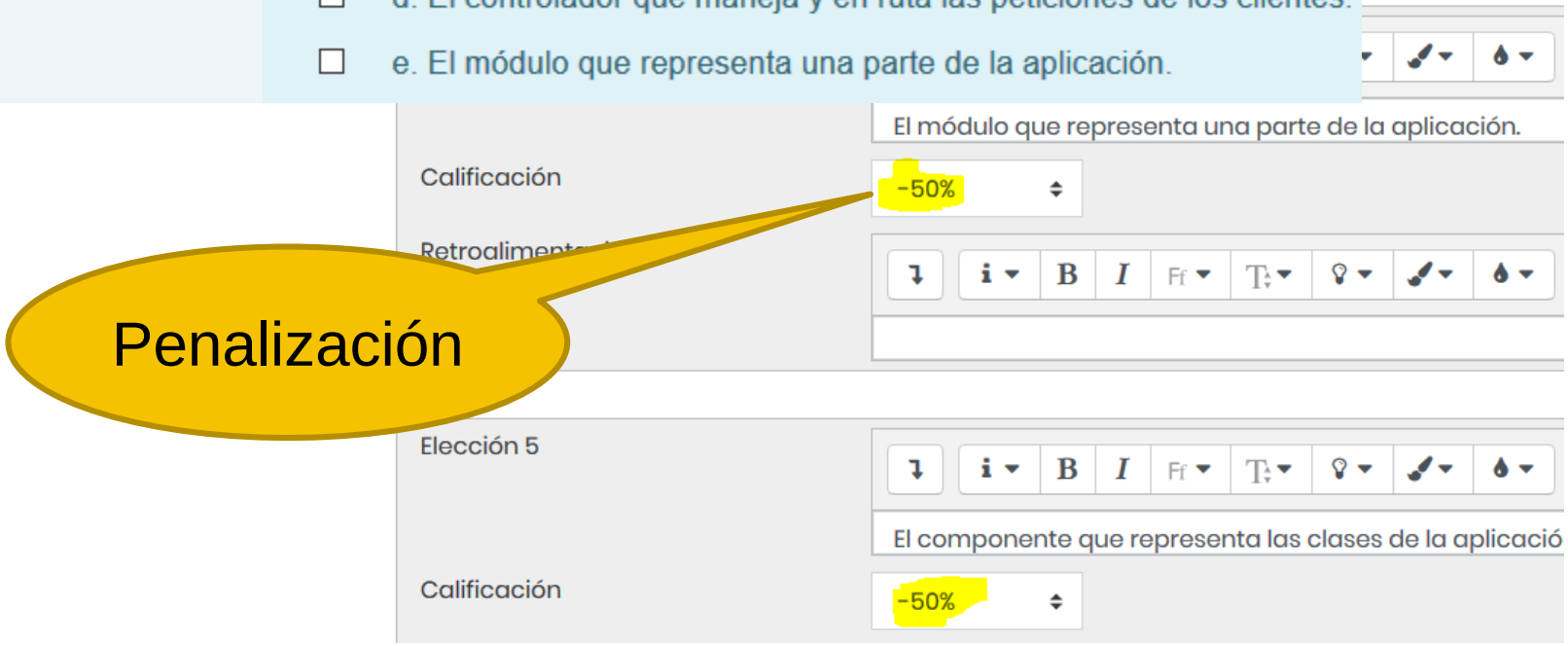
Sin responder aún

Puntúa como 1,00

Cuáles son las tres principales partes en el Modelo MVC?

Seleccione una o más de una:

- ☐ a. El modelo que representa los datos de la aplicación.
- ☐ b. La vista que presenta los datos.
- ☐ c. El componente que representa las clases de la aplicación.
- ☐ d. El controlador que maneja y en ruta las peticiones de los clientes.
- ☐ e. El módulo que representa una parte de la aplicación.



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