* + Java Development
* + Collections
  + Diferencias entre Linked List y Array List.
    - *Recuperar* data esta mejor en Array List. Porque esta recuperando directo con el index.
    - *Añadir y Borrar*informacion esta mejor en Linked List. ArrayList nececita hacer bit shifting por estes operaciones.
    - Rendimiento esta mejor cuando haciendo cambios en una Linked List. Pero es mejor para almacenar y recuperar los datos desde Array List.
  + Diferencias entre List y Set
    - Un Set tiene registros unicos, pero el cambio un List puede tener varias mismos registros .
  + Differences between Queues and Stacks
    - Queue – FIFO, Stack – LIFO
  + How HashMaps / Hashtables work (hashing, collissions, Object#hashcode)
    - HashTable is synchronized and if no need to be synchronized, HashMap is a better choice for performance, and null can be used.
    - It is better to create the hashmap with an initial size to avoid re hashing in each size exceed for a better performance.
* + JVM pooled objects
  + Strings
  + primitive data types
* + Concurrency
* + Concepts
  + Deadlock
  + Livelock
  + Starvation
  + Race Condition
* + Abstractions
* + SYNCHRONIZED

*Sincronización se ha usado para resolver el problemo de inconsecuencia*

* + en nivel de class

Cuando un static synchronized method se ha invocado, el hilo esta usando el lock de objeto class el lugar de lock de instancia.

Lock(Bloque) de un class y la instancia son seperados .

* + at instance level

Cuando Synchronized se ha aplicado a un metodo o bloque, se crea un sección de critica, y solamente uno hilo puede acceder a este sección en un bloque del tiempo, se lo usa, y lo libera. Y ese proveendo a los hilos a acceder el recurso y cambiar valores en el mismo tiempo

When there are two or more threads are changing the same instance's value, there may be same time processes and this same time process will cause the two threads read same value , but not aware of each other's change.

*Volatile is making an object to be seen to all of the threads.*

*Synchronized, makes this available also.*

* + Object#wait, Object#notify, Object#notifyAll
  + Thread#join

Join is used to make current thread to wait the joining thread to finish it's job.

* + + Concurrency API
  + + java.util.concurrent.locks
  + Lock
  + Condition
    - + java.util.concurrent
  + CyclicBarrier

*await()*

It is a number watch to make all threads wait in a specific point of code(cyb.await()) until the specified amount of threads come until this point, and then make all continue (in a random priority as JVM acted in other thread queues)

* + CountDownLatch

*countdown(), await(), getCount()*

It is a synchronizer. The thread where the .await() is positioned, will be waiting for that Latch to complete the amount that specified when it instantiated like :

*CountDownLatch ctl = new CountDownLatch(5);*

* + Java 8
  + Lambdas
  + Method References

+ Interfaces

* + Default Methods
  + Static Methods
  + Interfaces vs. Abstract Classes

+ API

* + Streams
  + Optional
  + CompletableFuture
* + Garbage Collections
* + Generations
  + + Young
  + Eden
  + Survivor
  + Virtual
  + + Tenured
  + Virtual
* + GC Algorithms
  + Serial Collector
  + Parallel Collector
  + Concurrent Mark Sweep (CMS) Collector
  + Garbage-First Garbage Collector
* + Profiling
  + visualmv
  + + load testing
  + jmeter
  + locust io
* + Frameworks / Specs
* + Spring
  + IOC
  + MVC
  + Transactions
  + Cache
  + Boot
* + ORM
  + Hibernate
  + JPA
* + Servlets / JSP
* + 3.0+
  + Async Requests
  + JSTL
* + Architecture
  + SOLID principles
  + GoF patterns
  + EAI patterns
  + SOA patterns
  + Java design patterns
  + Microservices patterns
  + Reactive patterns
* + Distributed Apps
  + ACID transactional properties
  + BASE and Eventual Consistency
  + CAP Theorem
  + FLP Impossibility
  + + Consensus
  + Paxos
  + Raft
* + Tools / Frameworks
  + Spring Cloud
  + Hystrix (Netflix)
  + Apache Zookeper
* + DevOps
  + Docker
  + Kubernetes
  + Chef / Puppet
  + Bash
* + Methodoligies
  + Agile
  + Scrum