Checklist review today:

* Transaction
  + an action, or a series of actions following ACID principle.
  + Atomicity
    - all transactions are atomic
    - can’t be executed partially
  + Consistency
    - transactions take the database from one consistent state to another state
  + Isolation
    - a transaction is not visible to other transactions until it completes
  + Durability
    - once a transaction has completed, its changes are made permanent
* CAP
  + Consistency: all clients always have the same view of data
  + Availability: each client can always read and write
  + Partition Tolerance: the system works despite physical network partitions
  + CP: redis, MongoDB
  + AP: Cassandra

New things learned today:

* JDBC
* software component interact between JAVA and Database.
* step:
  + allocate connection object (for connecting database)
  + allocate statement object (based on connection)
  + write sql query, execute query
  + process the query result
  + close statement and connection object (free up resources)
* SQL injection
  + attack vector that uses malicious SQL code
    - OR 1 = 1
* PrepareStatement
  + Statement is deprecated (SQL Injection)
  + Value occupied by ? at beginning
  + Secure sql not to be altered.
  + setAPI (SetInt, SetString…) to secure data not to be altered.
* Statement
  + deprecated
  + SQL Injection
* CallableStatement
  + call stored procedures
    - like a function or method in a class
    - lives inside the database
  + may have higher performance execute inside the same memory (stored procedures)
  + setAPI (SetInt, SetString…) to secure data not to be altered
* batch statement
  + reduce overheads
  + since connection through internet is unstable
  + add queries in batch
  + steps
    - conn.setAutoCommit(false)
    - pstmt.setAPI and pstmt.addBatch() (for many times)
    - pstmt.excuteBatch()
    - conn.commit()

Learned Plan tomorrow:

* Review JDBC
  + default
  + steps
  + SQL Injection
  + Statement <-> PrepareStatement <-> CallableStatement
* Review Concurrency (SQL)
  + 3 read scenarios
  + 4 isolation level
* Learn hibernate (new content)