Phong van 1

* Introduction
  + Database used in projects
  + Most familiar database
* How your application talk to database?(JDBC, Hibernate, spring Data JPA)
* Why do you want to use persimistic locking
  + Monolithic -> optimistic locking: for easy use, not have to think when there is deadlock
  + Microservice -> perssimistic locking: locking the database layer. All other service using that database will know that database is currently locked.
* When you do anythinng in the database, can you control the locking
  + “Select for update” to update that row
* There are many types of lock. Nonsqc lock. When
* When you update a row, you are not commited, anytime when you want to update the record, you need to update to exclusive lock. Everytime
* Why opptimistic locking is bad for microservice?
* Two person update the same record, 1st person succes, 2nd person failed
* There is one way to avoid deadlock: ensure the order you aquirelock must be the same. 3 tables a b c, Every order must be a b c
* Spring Boot – summary of what Spring provides. Main purpose of Spring
  + AutoConfiguration
  + Help develop applications faster
* Dependency Injection
  + Decouple component in Spring
* SQL how to make one query faster
  + One query can take too many columns, you only need some field
* Difference between 2 and 20 columns query
  + Database cannot read column by column. It reads all rows. Reading is always the slowest process. You can’t cut number of I/O by cutting number of columns.(If you read 10000 columns then it could be slow, but that’s rare)
* How do you know if a query is slow
  + Index some most queried column like status, if the row is too many, I could use partition
  + In a where query, db must iterate all rows to see the matching statement, but using index, I can separate
  + Explain keyword
* Sometimes query is slow because of sorting or group by, so we do the testing first
* Why do your company uses Struts
  + Company started 10 years. They have own spring boot layer on top

Phong van 2

* How your application talk to database? Have you encounter any problem with Hibernate? Do you have performance issue?
* Do you do a lot of One to many mapping?
* Lazy loading, eager loading – which is default?
  + Eager is default
* Problem with lazy loading
  + <https://hackernoon.com/dont-be-lazy-3-problems-with-lazy-loading-and-when-to-use-eager-loading-qq1d34cl>
* Difference between lazy and eager? Assuming same amount of queries are issued
  + Eager loading, parent and child are loaded
* What is n + 1 problem? What is n, what is 1?
  + For example you have 5 rows, you have 1 query to load all files that contains only id, if you want to load detail of each query, you have to make 5 queries using previous ids