**B) SQL Improvement Logic Test**

1. Index All Columns Used in 'where', 'order by', and 'group by' Clauses.

For example,

*Create index for the following columns:*

*Jobs.id, JobsPersonalities.job\_id, Jobs.publish\_status, Jobs.deleted, Jobs.sort\_order and etc.*

2. Avoid Like Expressions with Leading Wildcards and Take Advantage of MySQL Full-Text Searches

For example,

*ALTER TABLE jobs*

*ADD FULLTEXT*

*(name, description, detail, business\_skill, location, activity, salary\_statistic\_group, salary\_range\_remarks,salary\_restriction);*

*SELECT \* FROM jobs*

*WHERE MATCH*

*(name, description, detail, business\_skill, location, activity, salary\_statistic\_group, salary\_range\_remarks,salary\_restriction)*

*AGAINST ('キャビンアテンダント');*

3. Optimize Database Schema

i) Avoid Null Values in 'deleted' column.

Alter 'deleted' column to tinyint data type and assign default value as 0.

ii) Avoid Too Many Columns in jobs table.

For example, in jobs table, salary\_statistic\_group, salary\_range\_first\_year, salary\_range\_average, salary\_range\_remarks columns can be normalized into another table called job\_salary.

4. MySQL Query Caching

MySQL query caching feature will speed up performance when read operations are conducted. MySQL query cache values can be set by editing the configuration file.