**A) Programming Test**

**- There is 3 files**

**Below is where the code logic/return results is fully in PHP using postman to test.**

**- ‘backend-frontend.php’ where filter logic and frontend returned response data is handled as well.**

**Below is a split of backend/frontend to achieve same code logic/return result.**

**Node.js (Backend)**

* **File name (backend-node.js)**

ReactJS (Frontend)

* **File name (frontend-react.js)**

**B) SQL Improvement Logic Test**

3. Remarks :

b) Written explanation of the logical improvement

- **Reduced ‘SELECT’ Statement (**This reduces the amount of data retrieved from the database, which can improve query performance.)

- **Optimized ‘WHERE’ Clause (**Usage of a single ‘WHERE’ clause with ‘OR’ conditions are simplified and more efficient compared to the multiple OR conditions**)**

**- ORDER BY Clause**: Usage of this is to sort the results based on the ‘sort\_order’ and ‘id’ columns. This can help in efficiently fetching the desired results with the specified sorting order.

c)

- Total time spent to complete SQL test about 3 hours+

Includes the below:

1. Explaining logic used to optimize query.
2. Create all tables, insert in dummy data and Rewrite select SQL query.