Main Points for project to consider

1)Language backend-Java Springboot

2)Language frontend -React JS

3)Database -PostgreSQL

/\*\*\*\*IMPORTANT\*\*\*\*\*/

THIS PROJECT IS FINAL PROEJCT FOR MSC DEGREE SO IT NEEDS TO BE VERY GOOD WITH FULL CODE EXPALNATION WRITTEN ABOVE EVERY CODE BLOCK AND REASONS FOR APPROACHES TAKEN.

Application Communication Flow backend-frontend

1. The App will ask users to choose from various services like Supermarket and Petrol Stations that user wants to explore today, Supermarket /petrol stations or both together we will show user choices

through checkboxes

2. Then the users will see that a screen will pop up asking about giving access to device location. Which will help the application in accessing user’s location and can give them better options of services (Supermarket and Petrol Stations.) to choose from.

3. The user will enter either a postcode or type some landmark through which the application will calculate the distance between his current location and destination location (Supermarkets or Petrol stations).

4. We will use npm(node package manager) package react-native-get –location or react’s JS own library Geolocation to access the device location of the user also we will use react google-maps/Api to search for our destination location (supermarkets or Petrol stations).

5. We will also use Java’s library JHeatChart (heat map charting library in java) to generate Heatmap using some prototype video for this project. The Heatmap will be in jpg or Png format.

6. After fetching these data, we will send this data to our Spring boot backend to process, the backend will have http endpoints to receive this, we will also add pin validation (e.g The pin should be of length six and will contain character and numeric values as well).

7. We will call our database(db|) to check if the location is present in the db to serve, if not will display some error messages like ‘we don’t have access to this store or petrol station’ at our frontend (View Layer).

8. We will take the user’s input of how far he wants to go and use this radius as a filter to cut down areas of searching for better options for users.

9. The Frontend will ask users to click on his preferred choice of option from those categories (supermarkets etc), (and we will give those categories some Ids in our java code) then there will be Client APIs (e.g., HERE Fuel Prices API) through which we will call backend and we will receive categories Ids in array and radius input and current location through user input from frontend and process it in the backend.

10. In db we will search for those preferred choices that user clicked on from the categories and match it with client store (which we are fetching through there APIs) and

11. We will store all the shops in a variable and use react-google-maps/Api to calculate the current location with location fetched by db and use the radius filter to generate the best feasible option for the user and client after this to fetch store info (price, discount, queue Size).

12. Once the application is ready It will go through Unit testing using JUnit (a test scenario will be given to measure functionality across a set of actions or conditions to verify the expected result)

13. Below are phases through which the application will go through:

14. Development Environment: This is where the application development tasks, such as designing, programming, debugging, etc will take place.

15. Test Environment: This is where application testing will be conducted to find and fix errors.

16. Production Environment: The last environment in the project, this is where new builds/updates are moved into production for end users.

17. Then the Application will be hosted on Amazon Web Services.