

AMS 560/ CSE 542

Grocery Shopping Optimization

Group 2 -

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Goal of our project



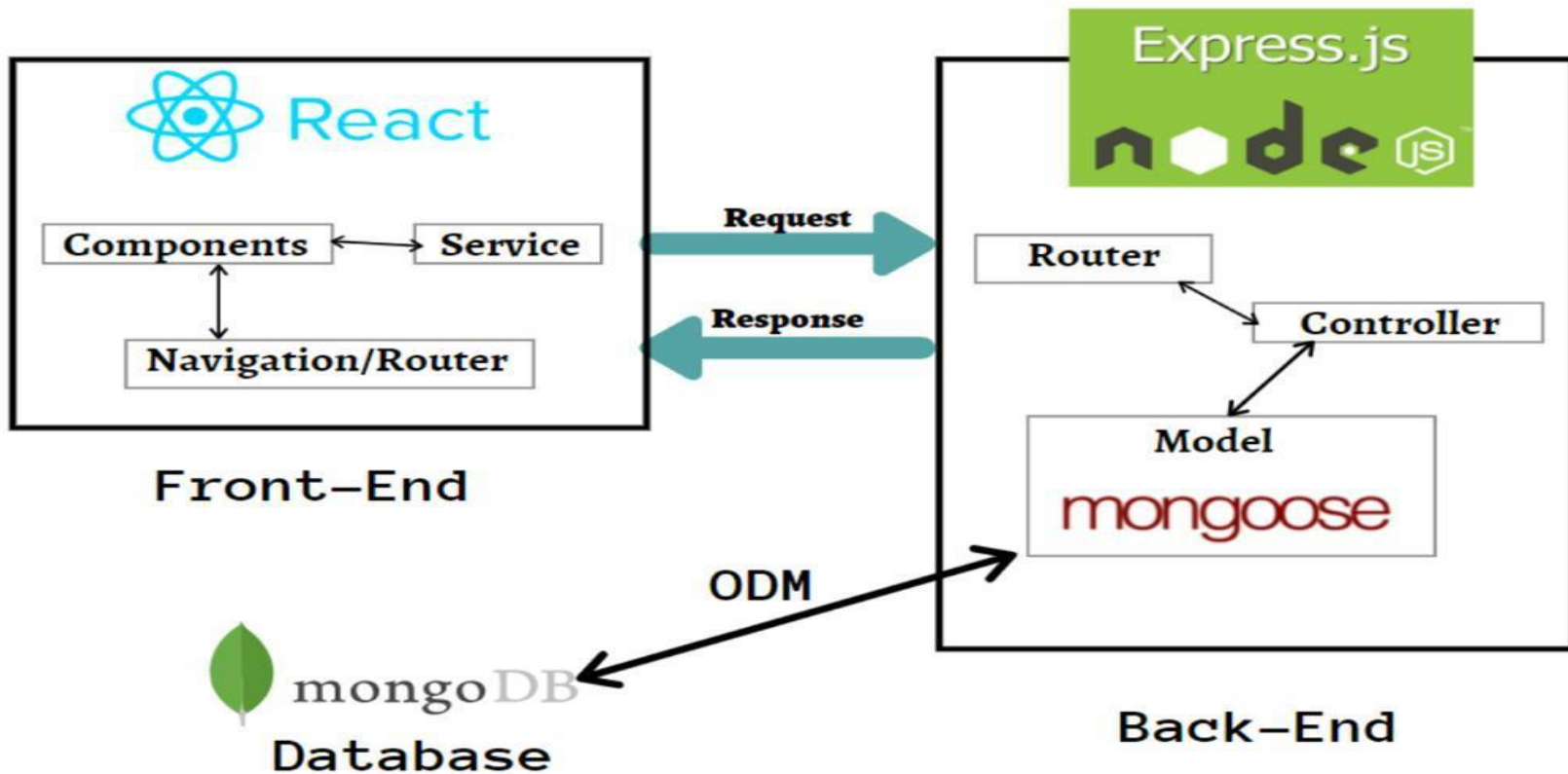
We wish to allow users to make informed decisions on common grocery list items in terms of cost, time efficiency, location and service.

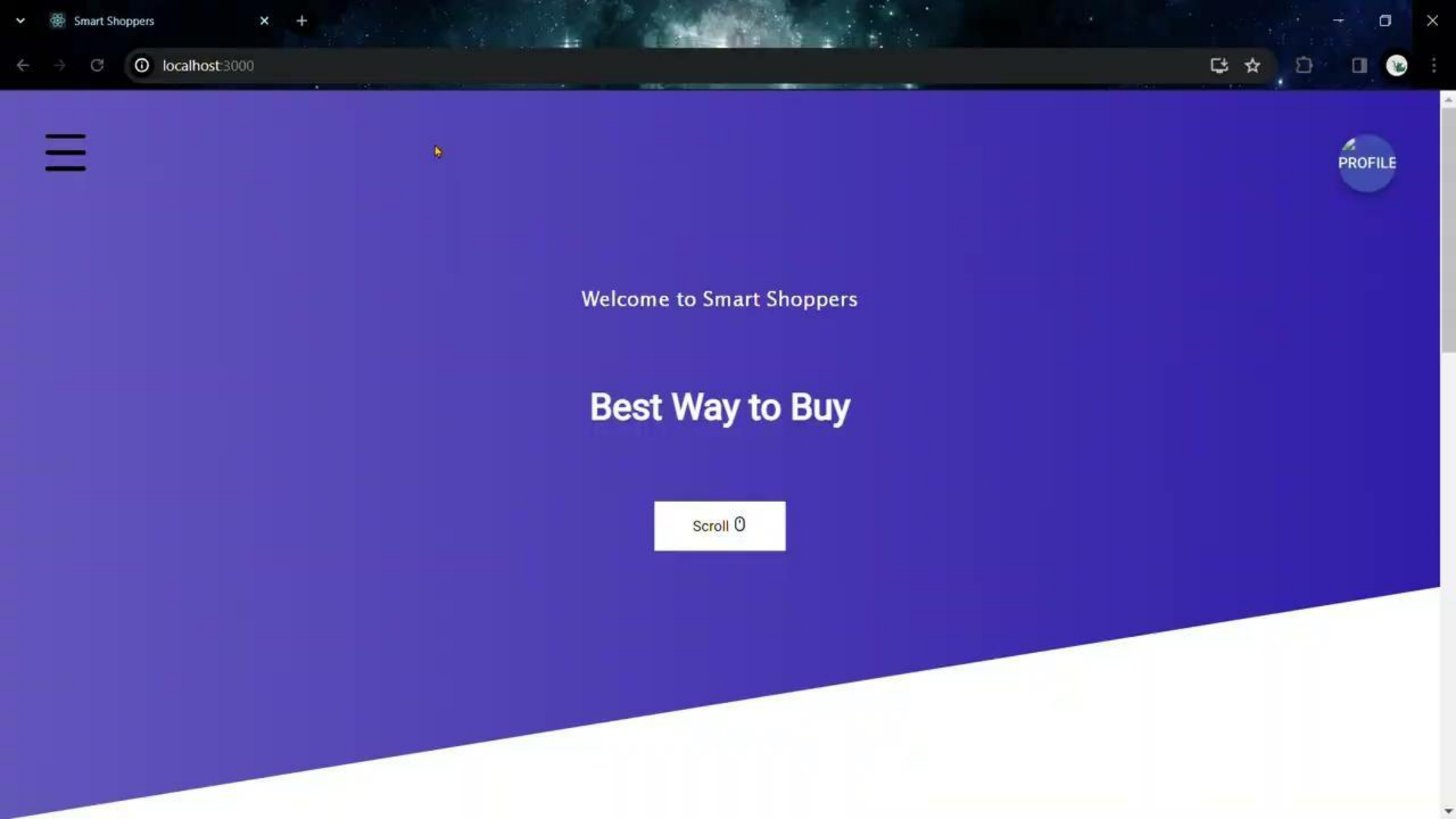


Deliverables:

- Grocery data points from three different stores.
- Providing purchase recommendations through our algorithm to users based on their
 - Time and cost priorities
 - Distance from stores
 - Purchase type selection- In-store, Delivery or Pickup
- Providing customer influx information to retailers.
- Building prototype application in localhost to view the working of it.

Architecture





Welcome to Smart Shoppers

Best Way to Buy

Scroll 0

How we implemented



Data

Product_Code	Store	Product_Category	Product_Name	Min_Price	Max_Price	Current_Price	Discount_Price
AL457	Aldi	Sweets	Starburst	3.57	5.70	4.41	4.29
AL103	Aldi	Condiments	Miso Paste	6.49	7.68	7.69	7.43
AL477	Aldi	Sweets	Reeses Pieces	6.73	9.34	7.86	7.74
TA306	Target	Bath	Bubble Bath	2.80	3.64	3.04	3.01
AL216	Aldi	Oils	Almond Oil	6.97	9.19	7.50	7.44
TA037	Target	Produce	Carrot	2.68	4.56	3.97	3.92
AL485	Aldi	Sweets	Junior Mints	4.36	6.59	5.37	5.20
TA161	Target	Beverages	Ginger Ale	2.69	5.59	3.77	3.70
TA432	Target	Office Supplies	Sketchbook	4.03	5.82	4.58	4.56

How we implemented



Costs

Different costs taken into account are:

- Commute costs (distance taken with G-Maps API)
- Purchase type cost factors (Pickup and Delivery)
- Usual cart item costs respective to each of the 3 stores (Walmart, Target, Aldi)

Times

Different times taken into account are:

- Commute times (duration is taken with G-Maps API)
- Aisle transition time
- Item checkout and payment time
- Delivery time

How we implemented

Priorities, Store and Service Preferences

- Flexibility to set priorities for time and cost.
- Option to disregard either of these priorities.
- The user can specify their preferred store and/or choose a preferred service type.
- When no specific options are provided, the system generates three optimal paths for the given cart.
- If the user selects any preferences, the output will include two best paths with the chosen stores/services, and the third path will represent the overall best path.

Set a time priority between 1 and 5 (set 0 if you do not care): 2

Set a cost priority between 1 and 5 (set 0 if you do not care): 4

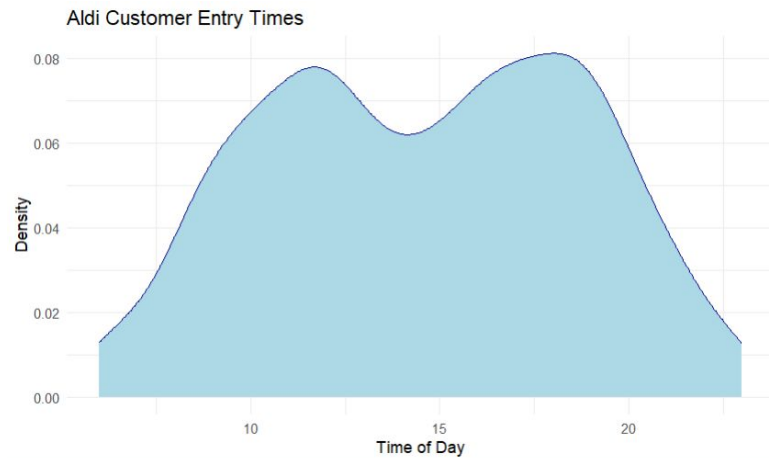
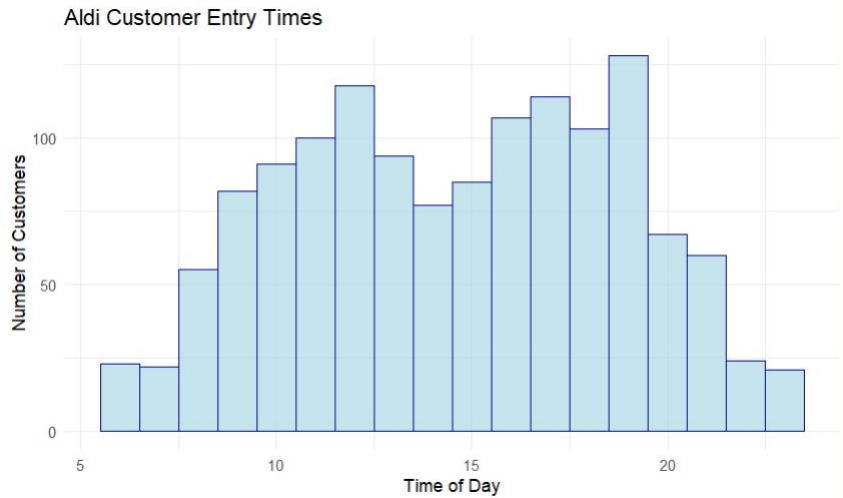
Favourite Stores

<input type="checkbox"/> Target
<input type="checkbox"/> Walmart
<input checked="" type="checkbox"/> Aldi

Preferred Modes

<input checked="" type="checkbox"/> store
<input checked="" type="checkbox"/> pickup
<input type="checkbox"/> delivery

Retailer End





Future Scope

- Replacing the assumptions considered with real-time data.
- Up Scaling the level of complexity of the application and factors considered in algorithm.
- Providing comprehensive analysis to retailer through dashboard.



Thank You