

CMPE 273: Enterprise Distributed Systems

Lab 2 Assignment: Using REST (Node.js) and React JS

Due: November 6th, 2020, 2:00 PM

This lab covers designing and implementing distributed service-oriented application using Kafka
This lab is graded based on 35 points and is an individual effort (no teamwork allowed)

Prerequisite

- You should have prior knowledge of JavaScript, React, Redux, MongoDB, Passport, JWT token, AWS EC2
- You should be able to run Kafka sample example to be demonstrated in the class.

Grading

Yelp Application - 30 marks

Questions – 5 marks

Total – 35 marks

*Note: Late assignments will be accepted but will be subject to a penalty of -5 points per day late.
Submissions received at or before the class on the due date can receive maximum.*

Yelp

Lab 2: Using REST (Node.js), React JS, Redux, Passport, MongoDB and Kafka

You need to develop “Prototype of Yelp application”. This prototype will be a web application using React and Node. Refer Yelp website and see how it functions. You need to use Kafka messaging service and make the system distributed.

The application should have the following persona:

1. Customer
2. Restaurant

You need to implement the following features in your application for the roles given above.

1. Customer Signup (name, email id, password)
2. Restaurant Signup (restaurant name, email id, password, location)
3. Sign in
4. Sign out

A Restaurant should be able to do the following functionalities:

Restaurant page (Dashboard – Landing page):

1. View restaurant profile – having all basic information about restaurant (name, location, description, contact information, pictures of restaurant and dishes, timings)
2. Update restaurant profile (name, location, description, contact information, pictures of restaurant and dishes, timings)
3. Update Contact information
4. Add/Edit Dishes in menu (with Dish name, Main Ingredients, Dish Images, Dish Price, description, dish category – Appetizer, Salads, Main Course , Desserts, Beverages)
5. View list of dishes added by them.
6. View Reviews given by customers
7. **Pagination should be implemented while showing dishes.**

Orders page:

1. View list of orders by customers
2. Click and view profile page of each customer
3. Update the delivery status of each order – Order Received, Preparing,
(If Delivery option selected) On the way, Delivered
(If Pickup option selected) Pick up Ready, Picked up
4. There should be 3 filters on orders(New Order, Delivered Order, Cancelled Order)
5. **Pagination should be implemented.**

Events Tab:

1. Post events(event name, description, time, date, location, hashtags)
2. View list of people who registered for the events.
3. Click on name and view another's person profile.
4. **Pagination should be implemented.**

Messages Tab(New):

1. Restaurant can message customers from customer's profile.
2. Customer should not be able to initiate a conversation with a Restaurant.
3. Customer can view messages and reply to restaurant only if the conversation was started from Restaurant side.
4. View the list of conversations he/she had in Messages Tab.
5. Clicking on each conversation should display the message history in sorted order and Customer should be able to continue the conversation by replying.

A **Customer** should be able to do the following functionalities:

Profile Page:

1. Display complete profile of a customer (basic details, favorites, about, profile picture)
2. Upload profile picture
3. Update about section(Yelping since, Things I love, Find Me In, My Blog or Website, etc.)
4. Update basic details (name, date of birth, city, state, country, nick name) and headline
5. Update Contact Information (email id, phone number)

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[Write a Review](#)

[Restaurants](#)
[Home Services](#)
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John Doe

San Jose, CA

453 Friends 855 Reviews 1334 Photos

Elite 2020 '19 '18 '17 '16 What is Yelp Elite?

"Conquering the world one bite at a time."

[Add friend](#)
[Compliment](#)
[Send message](#)
[Follow Katrina C.](#)
[Similar Reviews](#)

John's Profile

- Profile Overview
- Friends
- Reviews
- Business Photos
- Ask the Community

Reviews

Sort by: Date

Blvd Coffee

\$\$ • Coffee & Tea, Creperies, Sandwiches

6055 Meridian Ave
San Jose, CA 95120

8/27/2020

1 check-in

Blvd Coffee was a trek for me, but I've been wanting to try out their food and coffee. Since it would be my first time there, I was hoping that the quality of my food and drink made the trip worth while. Blvd Coffee did not disappoint, and I would be totally down to swing by when I'm in the

About John Doe

Rating Distribution

5 stars	305
4 stars	288
3 stars	167
2 stars	73
1 star	22

[View more graphs](#)

Review Votes

Useful 2695

Funny 1483

Cool 2299

Restaurant Search tab (Dashboard – Landing page)

1. Search for Restaurant (using dish names, cuisines, location, mode of delivery)
2. Filter restaurant search results based on food delivery method (Curbside Pickup, Dine In, Yelp Delivery) and location (neighborhoods)
3. Click and view a restaurant page
4. Show each restaurant respective location on map via pins(You can use google map API for this).

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San Jose > Willow Glen > Restaurants

The Best 10 Restaurants near Willow Glen, San Jose, CA

Sort: Recommended

Filters

\$ \$ \$ \$ \$

Suggested

☐ Curbside Pickup

☐ Open Now 11:39 PM

☐ Yelp Delivery

Features

☐ Curbside Pickup

☐ Accepting Donations

☐ Yelp Delivery

☐ Yelp Takeout

[See all](#)

Delivery

Order in

Takeout

Grab and go

Sponsored Results

Sauced BBQ & Spirits - San Jose

214

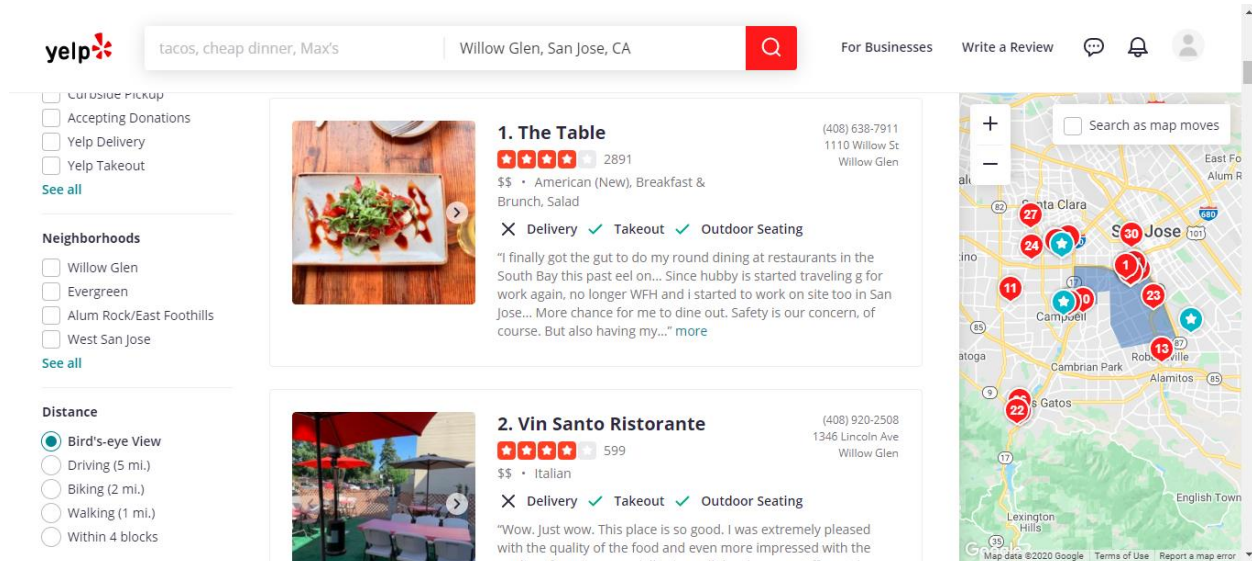
\$\$ • Barbeque, American (Traditional), Burgers

+1-408-564-8048

3055 Olin Ave

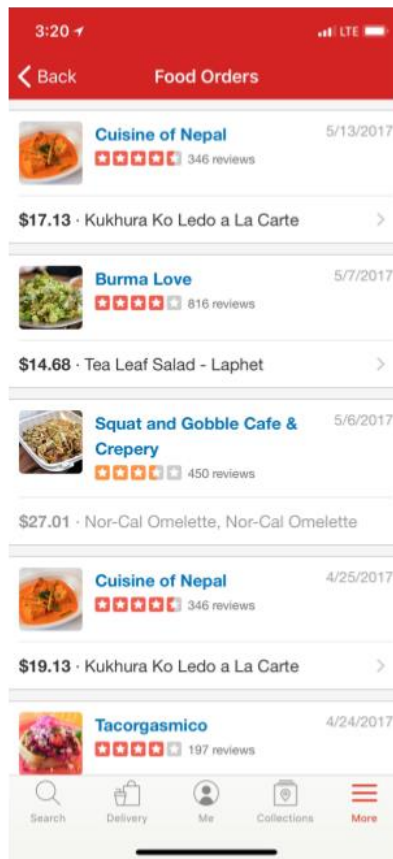
West San Jose

[Outdoor seating](#)



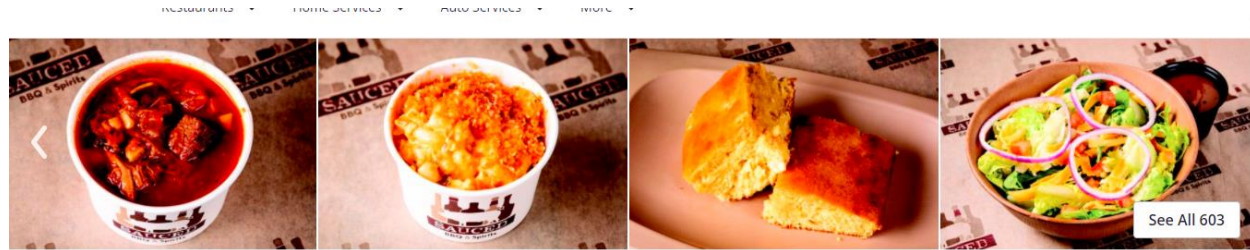
Orders Tab

1. View list of all the orders placed (along with order Date-Time, order status)
2. Filter the order based on the order status – Order Received, Preparing,
(If Delivery option selected) On the way, Delivered
(If Pickup option selected) Pick up Ready, Picked up
3. Sort the results on the basis of order date-time both ascending and descending.
4. **Pagination should be implemented.**



Restaurant Tab

1. View Restaurant Page
2. Add insightful reviews(date, ratings, comments)
3. Order food from the page, select delivery method.
4. **Pagination should be implemented.**



Sauced BBQ & Spirits – San Jose

Claimed



214 reviews

Details

\$\$ • Barbeque, Sports Bars, Burgers [Edit](#)

Closed 11:00 AM - 10:00 PM [Hours updated 1 month ago](#)

[Write a Review](#)

[Add Photo](#)

[Share](#)

[Save](#)

[Follow](#)



Offering Takeout or Delivery

[Order Now](#)



saucedbbqandspirits.com



(408) 564-8048



[Get Directions](#)

COVID-19 Updates



San Jose, CA

453 friends

855 reviews

1334 photos

Elite '2020

★★★★★ 8/16/2020

While walking around Santana Row recently, I realized that Roots and Rye was replaced with Sauced BBQ and Spirits. I found that Sauced is actually a chain BBQ restaurant albeit a high end one. The food is considerably expensive, but hey, it makes for a nice fit in Santana Row. Sauced piqued my interest enough to try out their food later that same day. They were offering outdoor seating in the midst of the Covid environment, but given this week's heat wave I figured I'd DoorDash instead. The food was so good that even DoorDash did it justice.

My boyfriend and I shared a 2 meats plate consisting of ribs, brisket and 2 sides. We chose mac 'n' cheese and the jalapeno coleslaw with the combo. We also threw on an extra side to our order of some waffle fries with rub (extra \$1 for seasoning). Unfortunately the 1/2 chicken was not part of the DoorDash menu otherwise we would've gotten that as a 3rd meat.

I enjoyed the sides a lot. The waffle fries with rub were comparable to Wingstop's crack fries, so naturally I loved them. Do I even dare say I liked Sauced's seasoning better? Bold statement, I know. The jalapeno coleslaw was unique, and I liked how light and refreshing it was. The cabbage was crisp and crunchy, and the bursts of spiciness from the thinly sliced jalapeños were the best parts. Sauced has a solid mac 'n' cheese, although I did think it was the least impressive of the 3.

Texas-style brisket is my fav. BBQ. Sauced and I were off to a great start as I picked the fattiest piece from the box. The brisket had a beautiful pink smoke ring, and I could taste the smokiness of the bark. The meat was juicy and tender. It was a hit in my book.

Events Tab

1. View list of upcoming events in the order of increasing date
2. Search for event (using event name)
3. Click and view event details
4. Register for an event.
5. View list of registered events
6. **Sort Events based on event date both ascending and descending.**

Upcoming Events



The South Bay's #LocalAdventureChallenge!

Tuesday, Sep 1, 12:00 am – Wednesday, Sep 30, 11:30 pm

Locations across the South Bay — San Jose, CA

Are you ready for adventurer? We are too!

Join us for Yelp South Bay's...

[Other](#) 40 are interested!



Legendary Orchardist Charlie Olson Shares his Story of The Valley of Heart's Delight

Sunday, Sep 6, 1:30 pm

Saratoga Library — Saratoga

Orchardist Charlie Olson of CJ Olson's Cherries will speak about the Valley of Heart's Delight at the Saratoga Library on October 6 at 1:30 PM. The...

[Performing Arts](#) 2 are interested!



Full Moon Ceremony ~ Native Flute Meditation and Drum Journey

Monday, Aug 31, 5:30 pm – 7:30 pm

Online Event Live on ZOOM — Half Moon Bay, CA

The element of Fire is speaking loudly to us through extreme heat and wildfires. What messages do Mother Earth and Grandfather Fire have for us at...

[Other](#) 1 is interested!

Users Tab (New)

1. View list of users using yelp
 2. Search for user (using user's first name or nickname)
 3. Filter the results based on their Location
 4. Click on user's Name to view user's profile
 5. Follow any user by clicking follow button in their profile.
 6. Filter users based on following.
 7. Pagination should be implemented.
- Every service should have proper exception handling and every input field should have proper validation.
 - Password values should be encrypted.
 - **Passport.js and JWT Tokens should be used for authentication.**
 - **MongoDB with connection pooling should be used.**
 - **Redux should be implemented in all the components.**
 - **Kafka should be used.**
 - ESLint should be used in your code following Airbnb style guide.
 - The application should be deployed on cloud (E.g. Heroku, AWS EC2)
 - A simple, attractive and responsive client attracts good marks.

Testing

1. Testing of the backend server should be done using JMeter and Mocha.
 2. Enzyme should be used to test at least 3 views/pages(Optional).
- Following tasks to be tested using JMeter:
Test the server for **100, 200, 300, 400 and 500 concurrent users** with and without connection pooling. Draw the graph with the average time and include it in the report(1 API).
 - Following tasks to be tested using Mocha:
Implement five randomly selected REST web service API calls using Mocha. Display the output in the report.

Questions

1. Compare passport authentication process with the authentication process used in Lab1.
2. Compare performance with and without Kafka. Explain in detail the reason for difference in performance.
3. If given an option to implement MySQL and MongoDB both in your application, specify which part of data of the application you will store in MongoDB and MySQL respectively

Git Repository

- In your Git repository, create two sub-folders, one for Frontend and one for Backend. Place all your source code in respective Folders.
- Add a proper description for every commit describing what code changes are added.
- Regular commits to your repository are mandatory. (Penalty of 3 marks if missed).
- Do not submit dependencies or supporting libraries (e.g. node_modules) (including them causes deduction of 2 marks).
- All the dependencies should be included in package.json file.
- Readme file of your repository should contain the steps to run the application.

Project Report

- Introduction: State your goals and purpose of the system
- System Design: Describe your chosen system design
- Results: Screen captures of testing results and important screens of the application.
- Performance: What was performance? Analyze results and explain why you are getting those results.
- Git Commit history – screen capture
- Answers to the questions.

Submission

Please upload your report (John_Lab2_Report.doc) on Canvas before deadline. (Number of pages in Report should be below 30)