CMPE 273: Enterprise Distributed Systems

Lab 1 Assignment: Using REST (Node.js) and React JS

Due: October 9th, 2020, 2:00 PM

This lab assignment covers developing REST services using Node.js (Express) and ReactJS. This lab assignment is graded based on 30 points and is an individual effort (Teamwork not allowed)

Prerequisite

- You should be able to run the basic node.js and React application discussed in class.
- You must know programing language basics, JavaScript.

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

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.

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

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)

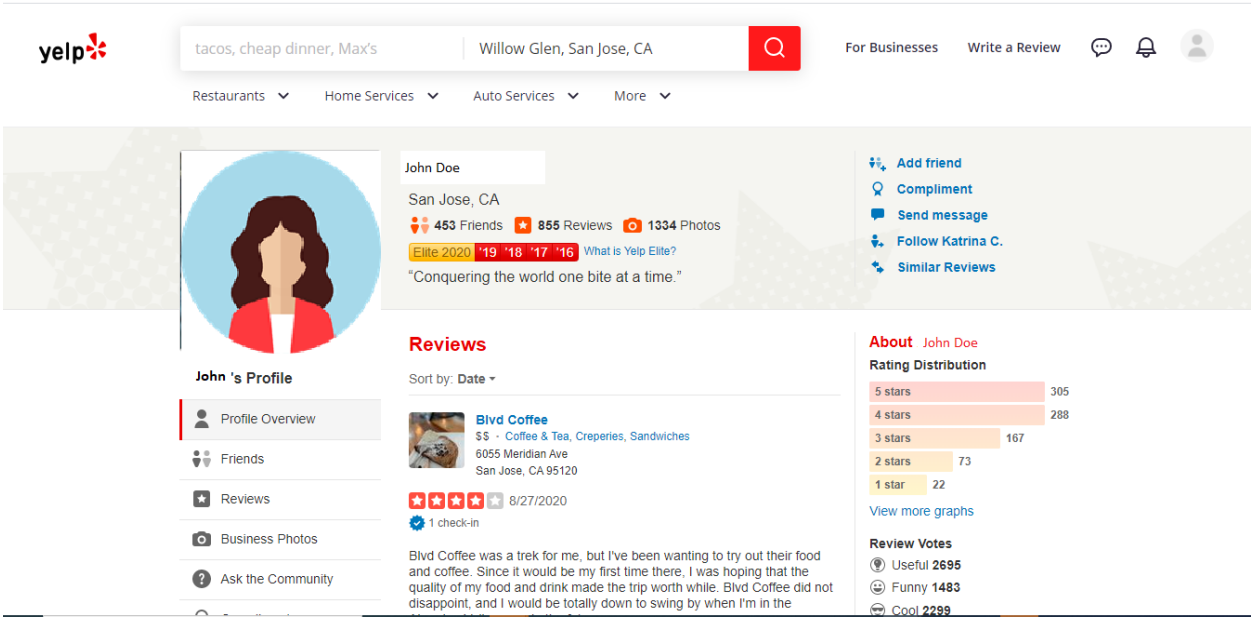
Events Tab:

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.

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

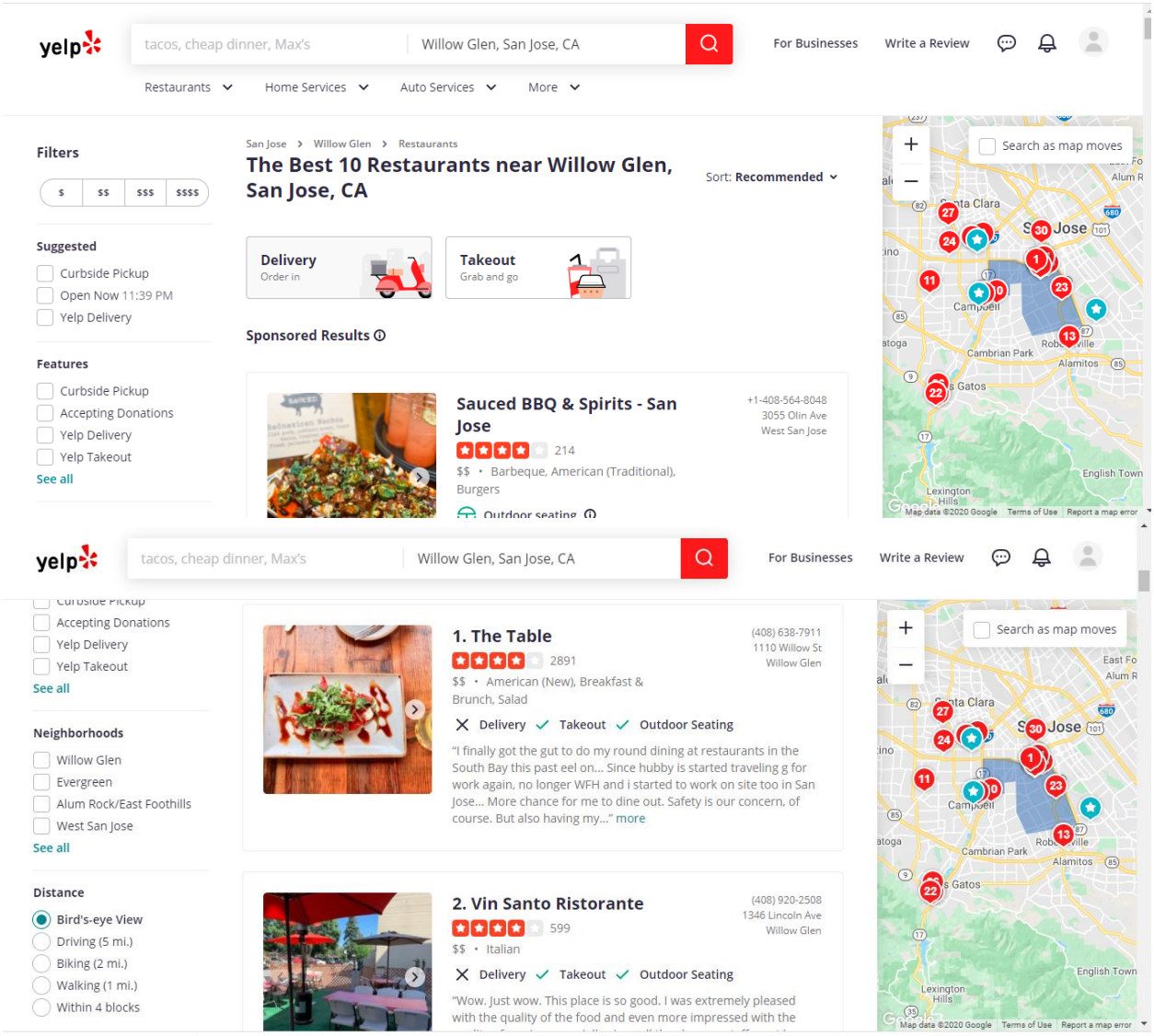
Profile Page:

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)



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).


yelp
tacos, cheap dinner, Max's
Willow Glen, San Jose, CA
For Businesses
Write a Review
Restaurants
Home Services
Auto Services
More
Filters
$
$$
$$$
$$$$
Suggested
Curbside Pickup
Open Now 11:39 PM
Yelp Delivery
Features
Curbside Pickup
Accepting Donations
Yelp Delivery
Yelp Takeout
See all
San Jose › Willow Glen › Restaurants
The Best 10 Restaurants near Willow Glen, San Jose, CA
Sort: Recommended
Delivery
Order in
Takeout
Grab and go
Sponsored Results
Sauced BBQ & Spirits - San Jose
214
$$ • Barbeque, American (Traditional), Burgers
Outdoor seating
+1-408-564-8048
3055 Olin Ave
West San Jose
Search as map moves
Santa Clara
San Jose
Campbell
Cambrian Park
Alamitos
Los Gatos
English Town
Lexington Hills
Map data ©2020 Google
Terms of Use
Report a map error

yelp
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Willow Glen, San Jose, CA
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Write a Review
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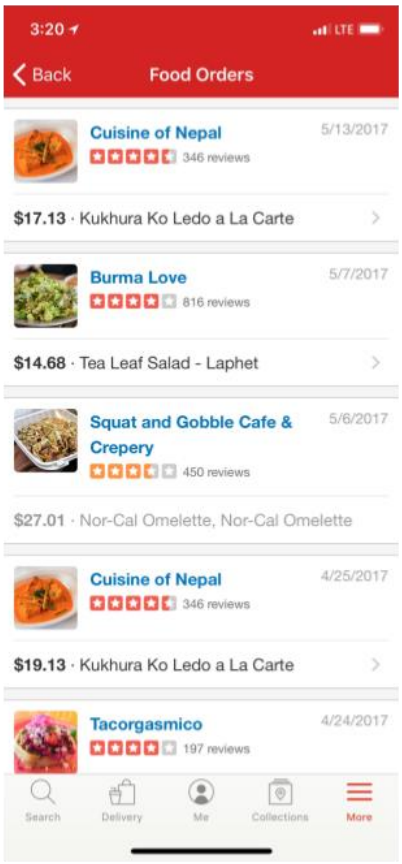
Yelp Delivery
Yelp Takeout
See all
Neighborhoods
Willow Glen
Evergreen
Alum Rock/East Foothills
West San Jose
See all
Distance
Bird's-eye View
Driving (5 mi.)
Biking (2 mi.)
Walking (1 mi.)
Within 4 blocks
1. The Table
2891
$$ • American (New), Breakfast & Brunch, Salad
(408) 638-7911
1110 Willow St
Willow Glen
Delivery
Takeout
Outdoor Seating
"I finally got the gut to do my round dining at restaurants in the South Bay this past eel on... Since hubby is started traveling g for work again, no longer WFH and i started to work on site too in San Jose... More chance for me to dine out. Safety is our concern, of course. But also having my..." more
2. Vin Santo Ristorante
599
$$ • Italian
(408) 920-2508
1346 Lincoln Ave
Willow Glen
Delivery
Takeout
Outdoor Seating
"Wow. Just wow. This place is so good. I was extremely pleased with the quality of the food and even more impressed with the
Search as map moves
Santa Clara
San Jose
Campbell
Cambrian Park
Alamitos
Los Gatos
English Town
Lexington Hills
Map data ©2020 Google
Terms of Use
Report a map error

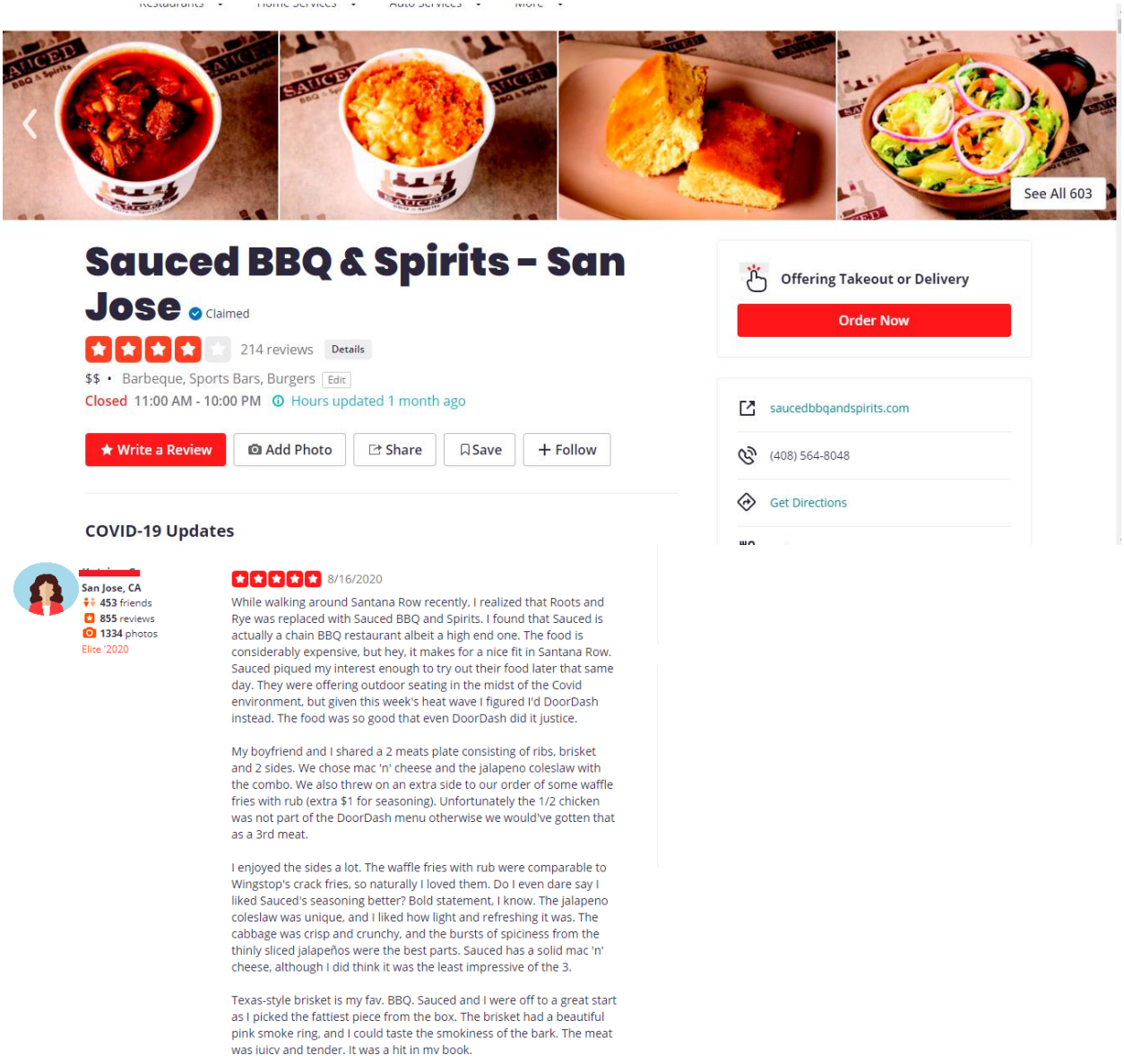
Orders Tab

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



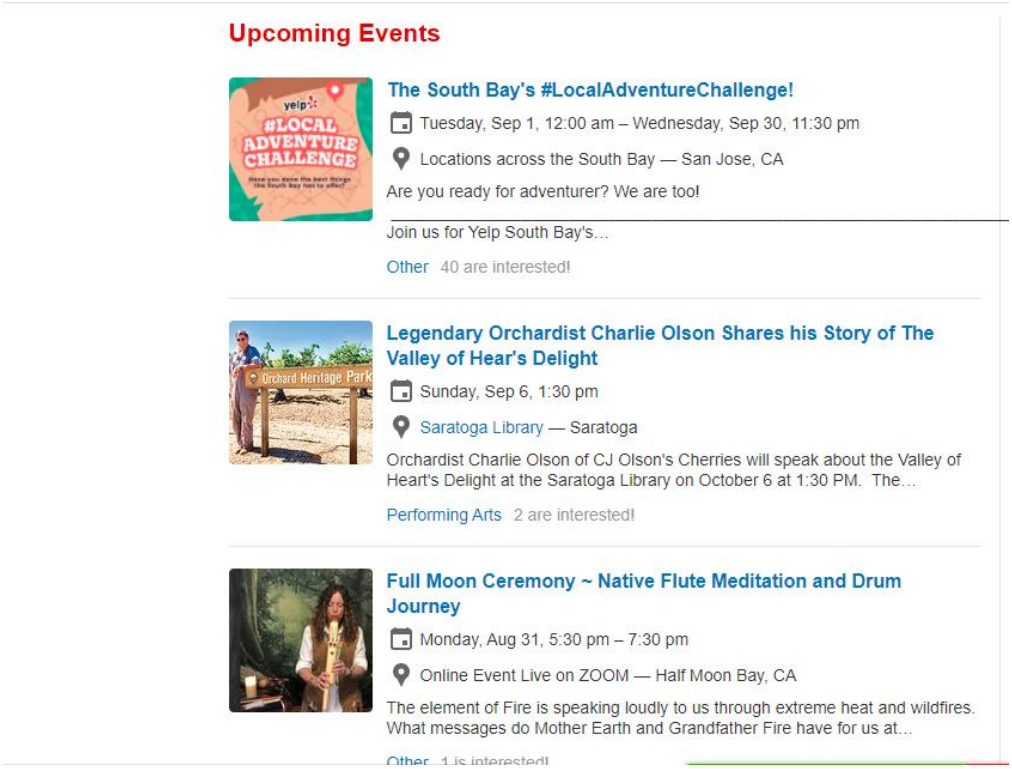
Restaurant Tab

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



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



- Every service should have proper exception handling and every input field should have proper validation.
- Password values should be encrypted.
- 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.

- 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.

- 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 the results of graphs with and without in-built mysql connection pooling of database. Explain the result in detail and describe the connection pooling algorithm if you need to implement connection pooling on your own. (3 pts)
2. What are the ways to improve SQL Performance? List at least 3 strategies. Explain why those strategies improve the performance. (2 pts)

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_Lab1_Report.doc) on Canvas before deadline. (Number of pages in Report should be below 30)