CMPE 273 – Lab2 – Yelp Recreation

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GitHub Code Link: https://github.com/BhavanaBS/CMPE273-Lab2
YouTube Video Link: https://youtu.be/_Z5xma-sWZM

Introduction:

The goals the system includes the development and functional re-creation of Yelp. Yelp allows customers and restaurants to place and receive food orders.

Personas in Yelp:

1. Customer
2. Restaurant

A customer can create his profile with details such as profile picture, address, etc. It also allows him to search dishes available at various restaurants based on the filters of location, food deliver option and order them if he chooses to. He can also browse through various events, or search for a particular event, hosted by the restaurants and register to the ones he likes. The customer is also able to see other customer profiles and follow the ones he wants. Previous orders and order statuses are some of the other functionalities available to him.

A restaurant can create its profile with details of location, timings etc. It can also add the details of various dishes available and accept or reject orders it receives. The restaurant can also post the events it plans to host and have a look at the participant details. A complete list of orders and events for a restaurant are also maintained. The restaurant can initiate a chat with its customers in case the need arises.

System Architecture and Design:

The system is built using the below mentioned technologies:

1. Frontend:

The front-end of the system is built using React Redux to help in interaction between various components of the application through a single point of thruth. React Bootstrap helps enhance user experience while using the application. Axios calls are made using the middleware Redux Thunk to connect the frontend to the backend of the application.

2. Backend:

The back-end part of the application is built using NodeJS. It helps connect the frontend API to MongoDB database by pushing messages into kafka topics. It acts as the producer for kafka. ESLint framework provides the static code analysis.

3 Kafka:

The publish-subscribe based messaging system to exchange data between the application and database with fault tolerance.

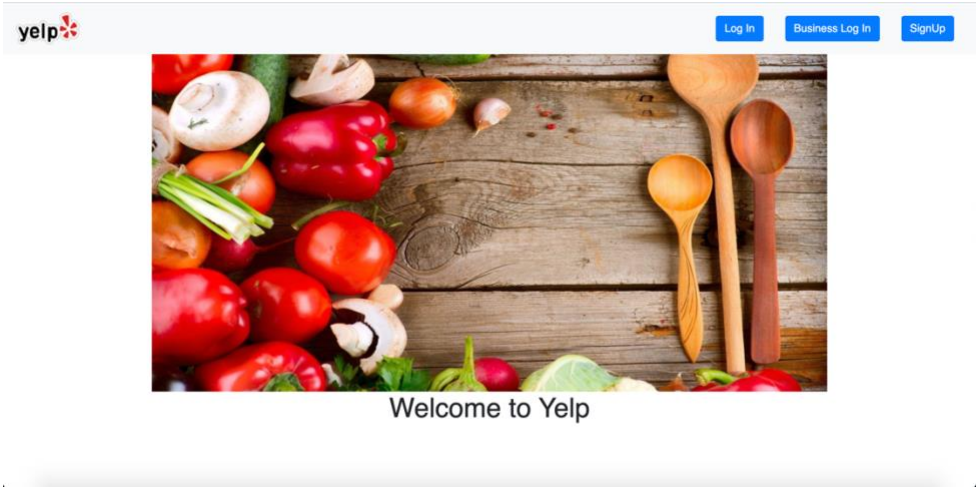
4 Database:

The database for the application is a NoSQL database MongoDB. This helps write simple function for database operations.

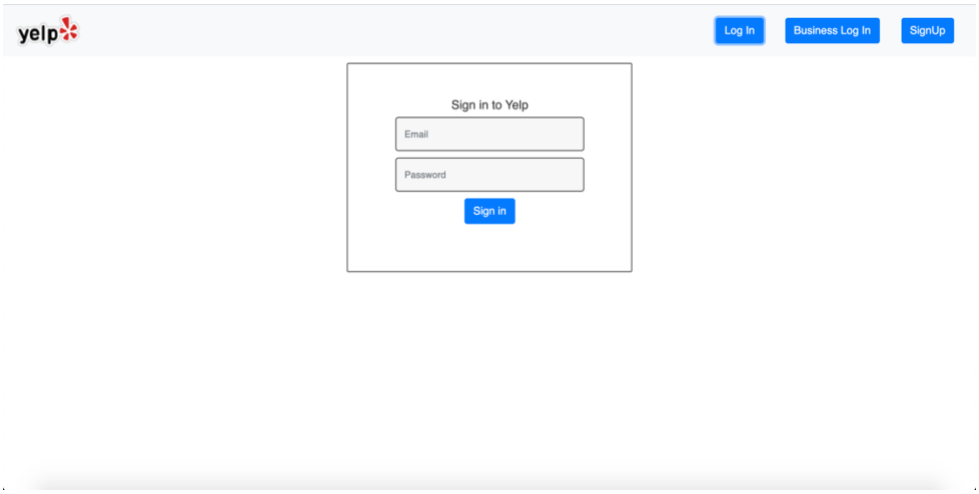
5 Deployment:

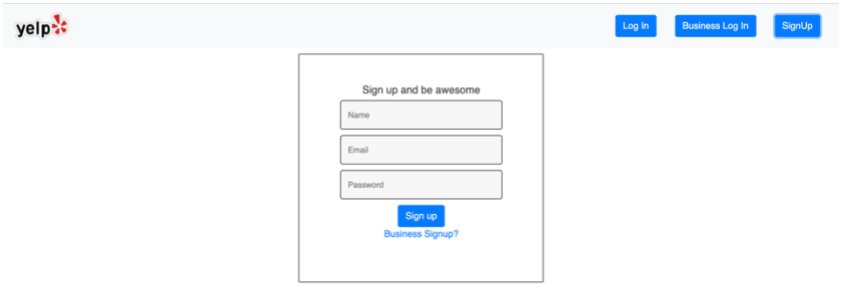
The entire application, i.e., frontend, backend and database are deployed on Amazon AWS EC2 platform.

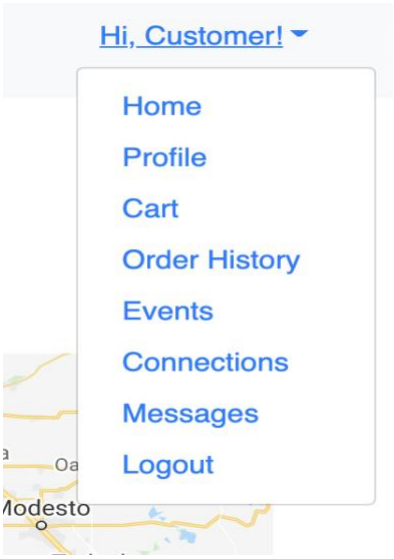
Application Pages:

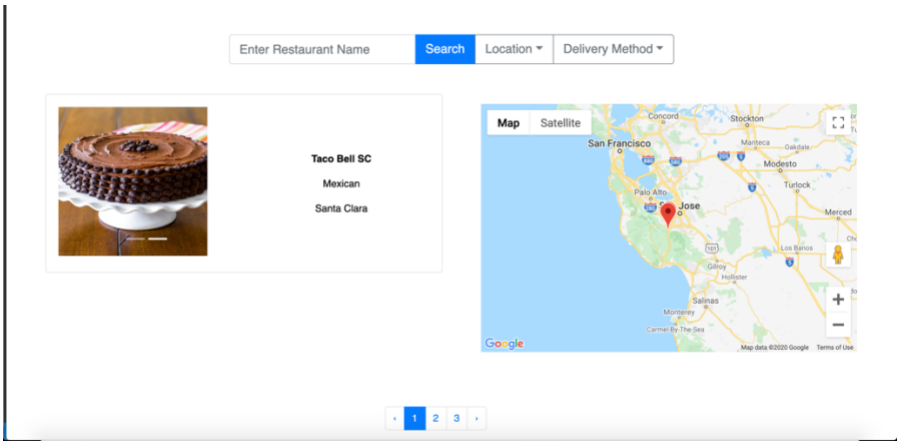


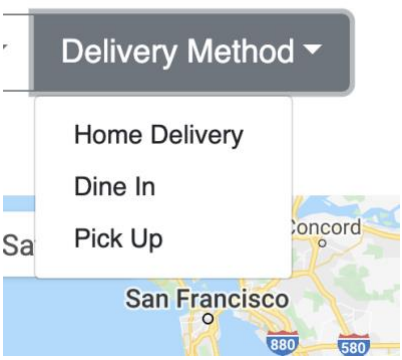
Customer Pages:

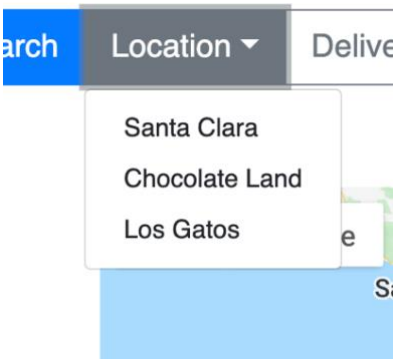

yelp
Log In
Business Log In
SignUp
Sign in to Yelp
Email
Password
Sign in

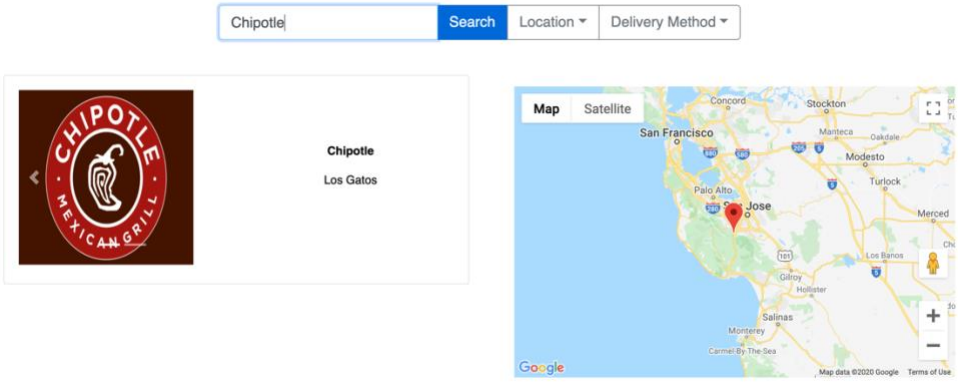

yelp
Log In
Business Log In
SignUp
Sign up and be awesome
Name
Email
Password
Sign up
Business Signup?


Hi, Customer!
Home
Profile
Cart
Order History
Events
Connections
Messages
Logout
Modesto


Enter Restaurant Name
Search
Location
Delivery Method
Taco Bell SC
Mexican
Santa Clara
Map
Satellite
San Francisco
Concord
Stockton
Manteca
Oakdale
Modesto
Turlock
Palo Alto
Jose
Merced
Los Banos
Gilroy
Hollister
Salinas
Monterey
Carmel-By-The-Sea
Google
Map data ©2020 Google
Terms of Use
1
2
3


Delivery Method
Home Delivery
Dine In
Pick Up
Concord
San Francisco
880
580


arch
Location
Delive
Santa Clara
Chocolate Land
Los Gatos


Chipotle
Search
Location
Delivery Method
CHIPOTLE
MEXICAN GRILL
Chipotle
Los Gatos
Map
Satellite
San Francisco
Concord
Stockton
Manteca
Oakdale
Modesto
Turlock
Palo Alto
Jose
Merced
Los Banos
Gilroy
Hollister
Salinas
Monterey
Carmel-By-The-Sea
Google
Map data ©2020 Google
Terms of Use

Browse Image To Upload | Browse

Upload Image

Update Bhavana BS's Profile

Customer Name	Bhavana BS
About Me	I am Bhavana
City	Santa Clara
State	CA
Country	USA
Email	bhavana@gmail.com
Phone Number	2256685456
Date Of Birth	12/12/1994
Preferred Name	Bhavana
Join Date	1994-12-10
Blog url	https://kafka.apache.org/downloads
Favourite Hobby	Finding good tasty food
Favourite Restaurant	Taco Bell

Please enter in the form Only Numbers

Cancel | Update Details

yelp

Hi, Customer!

No dishes in cart!

Home

Chrome File Edit View History Bookmarks People Tab Window Help 84% Sun Nov 8 12:46 AM

https://raw.githubus | Lab 2 | CMPE 275 Fall 2020 | Burrito Bowl Picture | Data Mining: Progra | React App for Yelp F | chipotle burrito bowl

localhost:3000/customer/restaurant/5fa7a262127f28d316cbac4b

yelp

Hi, Customer!

Chipotle Restaurant Page

Name	Chipotle
Description	Hi. This is Chipotle at Los Gatos
Cuisine	
Location	Los Gatos
Timings	09:00 - 10:30
Phone	2297787449

Menu

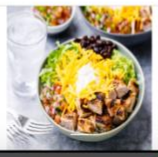
Burrito Bowl

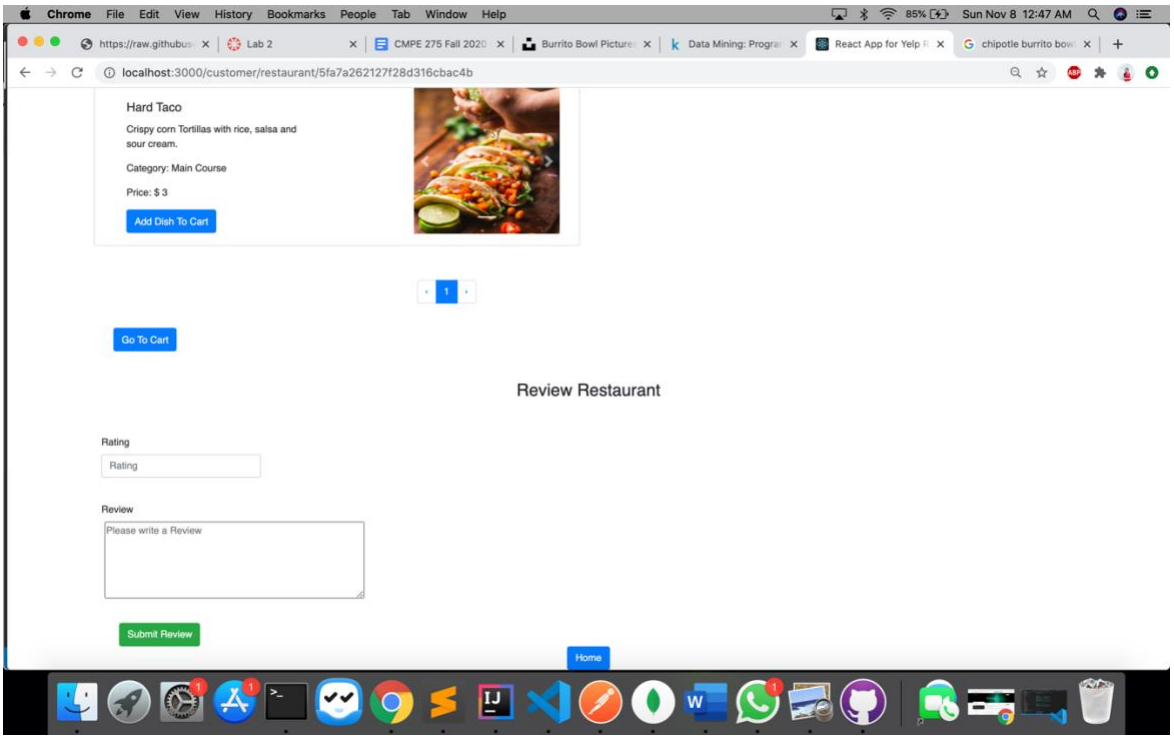
Just like a burrito, but served in a bowl.

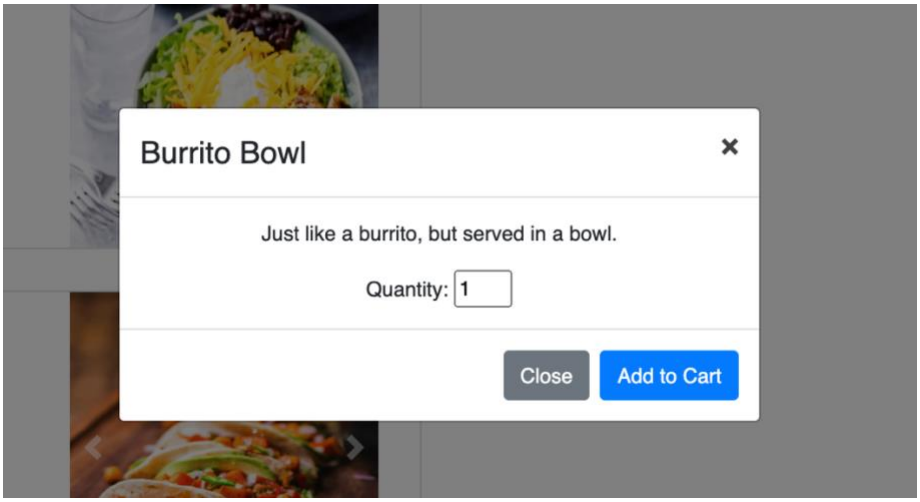
Category: Main Course

Price: $ 6.37

Add Dish To Cart







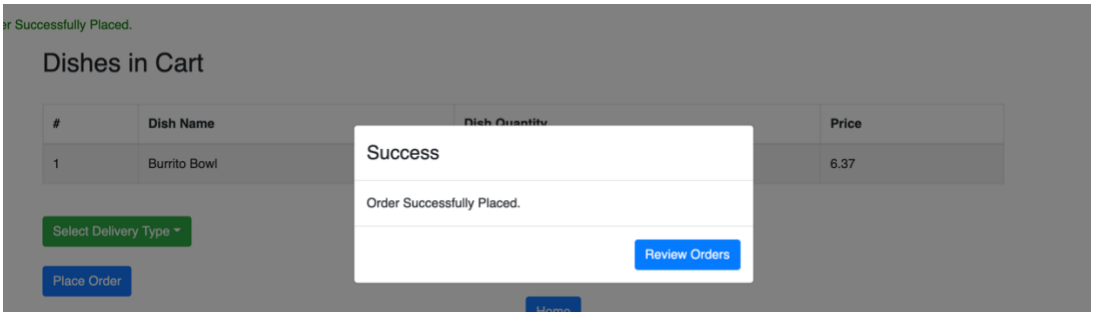
Dishes in Cart

#	Dish Name	Dish Quantity	Price
1	Burrito Bowl	1	6.37

Select Delivery Type

Place Order

Home

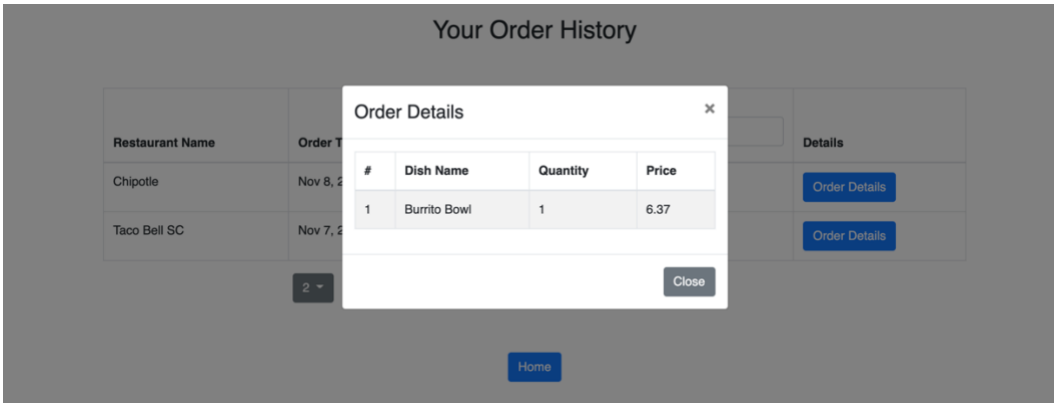


Your Order History

Restaurant Name	Order Time	Status (Enter Status...)	Details
Chipotle	Nov 8, 2020, 12:51:15 AM	New Order	Order Details
Taco Bell SC	Nov 7, 2020, 2:08:36 AM	Picked Up	Order Details

2 | 1 2 3 >

Home



Your Order History

Restaurant Name	Order Time	Status: New	Details
Chipotle	Nov 8, 2020, 12:51:15 AM	New Order	Order Details
Taco Bell SC	Nov 7, 2020, 12:03:24 PM	New Order	Order Details

2 ▾ 1 2 >

Home

All Events

Registered Events

Events

Search Event By Name Search

Order: Ascending

Taco Night Register

Taco Night

#Taco #Night

On: 2020-10-10 Time: 13:30 PM

At: Santa Clara

President Election Celebration Party Register

Celebrating Biden's Victory

#2020 #BidenHarris

On: 2020-11-07 Time: 18:00

At: Wilmington

All Events

Registered Events

Events

Search Event By Name Search

Order: Descending

Bake off Already Registered!

Chocolate BakeOff

#Chocolate

On: 2020-12-12 Time: 16:00

At: Michigan

DID Already Registered!

Dance India Dance

#Dance #India

On: 2020-12-10 Time: 15:30 PM

At: Santa Clara

#Dance #India

At: Santa Clara

DID

Register

Dance India Dance

#Dance #India

On: 2020-12-10 Time: 13:30 PM

At: Santa Clara

Taco Party

Register

This is an all you can eat Taco party

#AllYouCanEat

On: 2020-12-08 Time: 12:00

At: Los Gatos

Chocolate Making

Register

Learn to make chololates.

#Learn

On: 2020-12-05 Time: 13:30

At: San Jose

‹ 1 2 ›

Home

yelp

Hi, Customer!

All Events

Registered Events

Registered Events

DID

Already Registered!

Dance India Dance

#Dance #India

On: 2020-12-10 Time: 15:30 PM

At: Santa Clara

Bake off

Already Registered!

Chocolate BakeOff

#Chocolate

On: 2020-12-12 Time: 16:00

At: Michigan

View All Event List

Home

Connect to Yelpers

Search Yelper By Name

Search

Location

Ashwin SL

Ashwin SL's Profile

I am a foodie

San Jose

Bhavana

Following!

Khushi

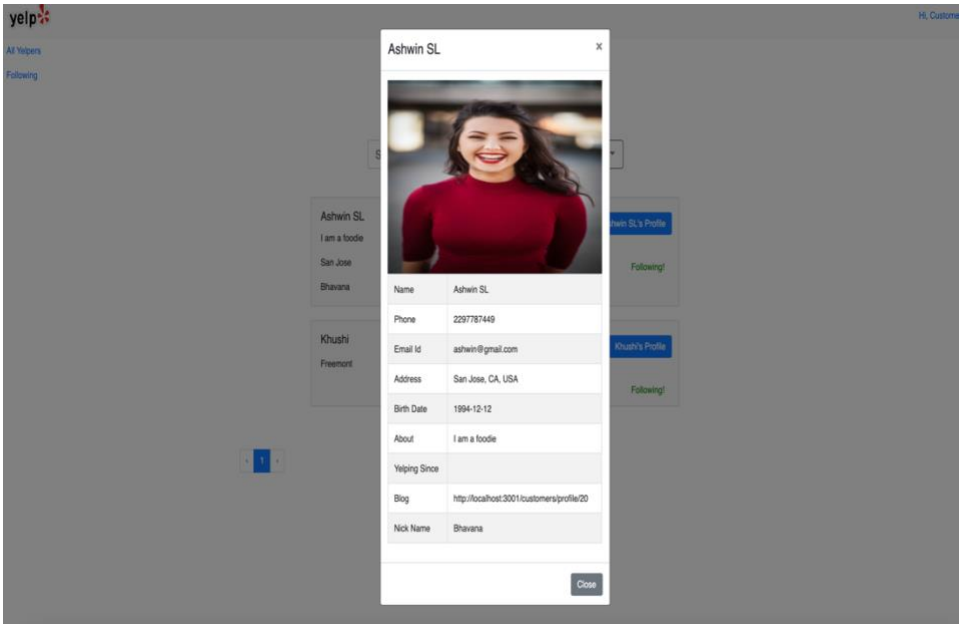
Khushi's Profile

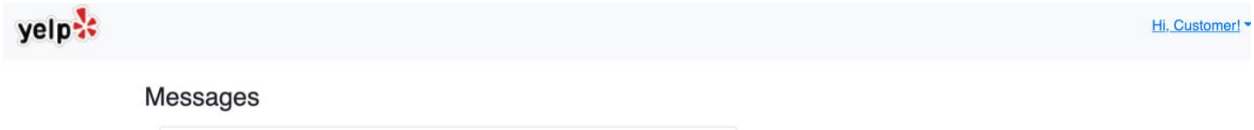
Freemont

Following!

‹ 1 ›

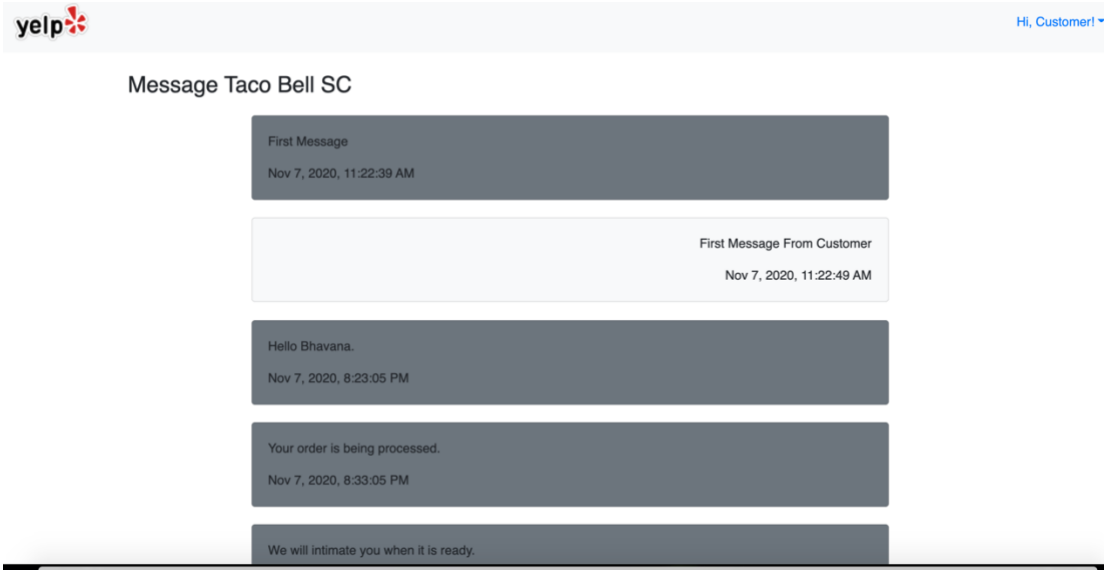
Home

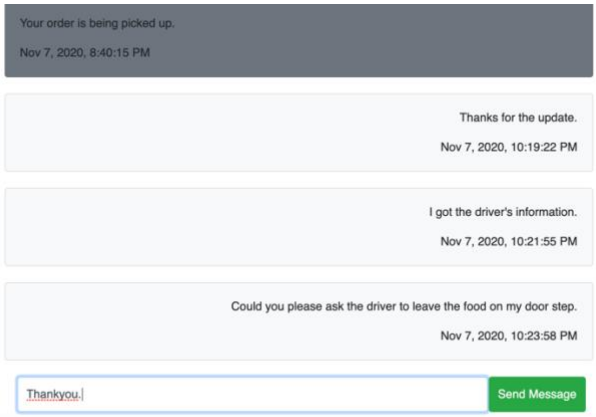




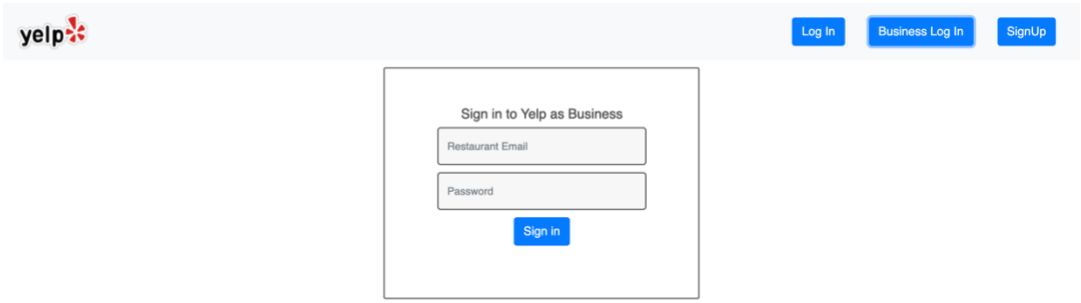
Messages

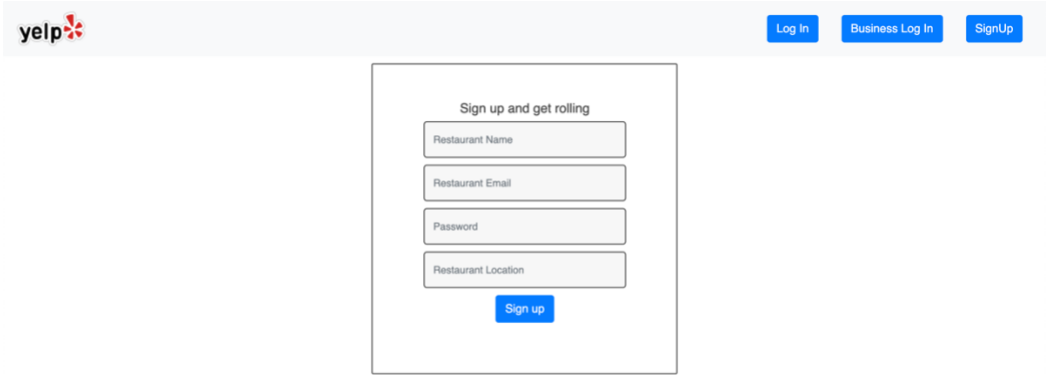
Taco Bell SC





Restaurant Pages:





yelp

Hi Restaurant!

Chipotle

Email Id	chipotle@sactaclara.com
Location	Los Gatos
Phone Number	2297787449
Description	Hi. This is Chipotle at Los Gatos
Timings	09:00 - 10:30
Delivery Method	Home Delivery, Pick Up, Dine In

Edit Profile

yelp

Hi Restaurant!

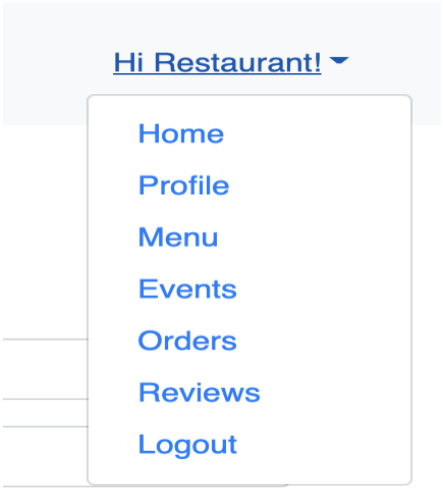
Browse Image To Upload Browse

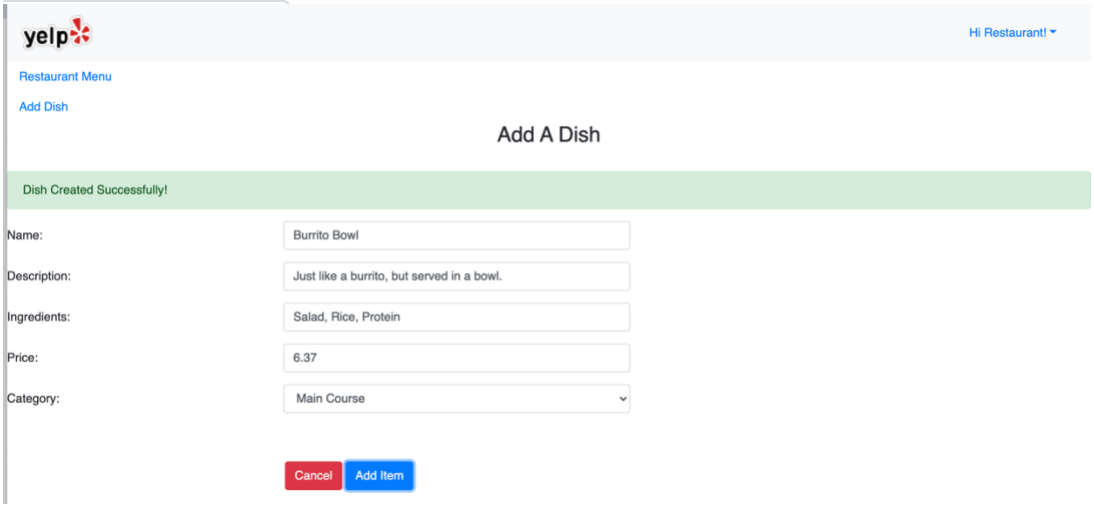
Upload Image

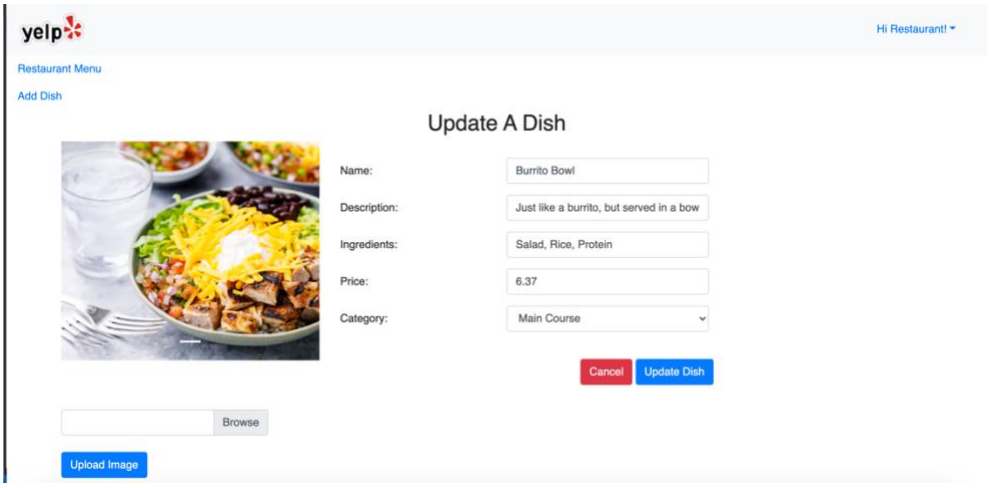
Update Chipotle's Profile

Restaurant Name	Chipotle
Description	Hi. This is Chipotle at Los Gatos
Location	Los Gatos
Email	chipotle@sactaclara.com
Phone Number	2297787449
Timings	09:00 - 10:30
Delivery Method	Home Delivery, Pick Up, Dine In
Location in Longitude and Latitude	37.2258592,-121.9885408

Cancel Update Details


Hi Restaurant!
Home
Profile
Menu
Events
Orders
Reviews
Logout


yelp
Hi Restaurant!
Restaurant Menu
Add Dish
Add A Dish
Dish Created Successfully!
Name:
Burrito Bowl
Description:
Just like a burrito, but served in a bowl.
Ingredients:
Salad, Rice, Protein
Price:
6.37
Category:
Main Course
Cancel
Add Item


yelp
Hi Restaurant!
Restaurant Menu
Add Dish
Update A Dish
Name:
Burrito Bowl
Description:
Just like a burrito, but served in a bow
Ingredients:
Salad, Rice, Protein
Price:
6.37
Category:
Main Course
Cancel
Update Dish
Browse
Upload Image

yelp

Hi Restaurant!

Restaurant Menu

Add Dish

Menu

Burrito Bowl

Just like a burrito, but served in a bowl.

Category: Main Course

Price: $ 6.37

Edit Delete

Hard Taco

Crispy corn Tortillas with rice, salsa and sour cream.

Category: Main Course

Price: $ 3

Edit Delete

‹ 1 ›

yelp

Hi Restaurant!

Restaurant Events

Add Event

Events

No events created.

yelp

Hi Restaurant!

Restaurant Events

Add Event

Create An Event

Name: Enter Event Name

Description: Description of the event

Time: --:-- --

Date: mm/dd/yyyy

Location: Enter Event Location

Hashtags: Enter Hashtags for the Event

Add Event Back

yelp

Hi Restaurant!

Restaurant Events

Add Event

Events

Taco Party

This is an all you can eat Taco party

At: Los Gatos

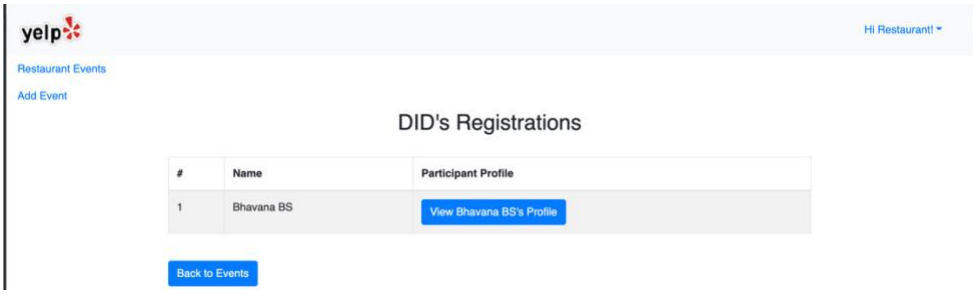
#AllYouCanEat

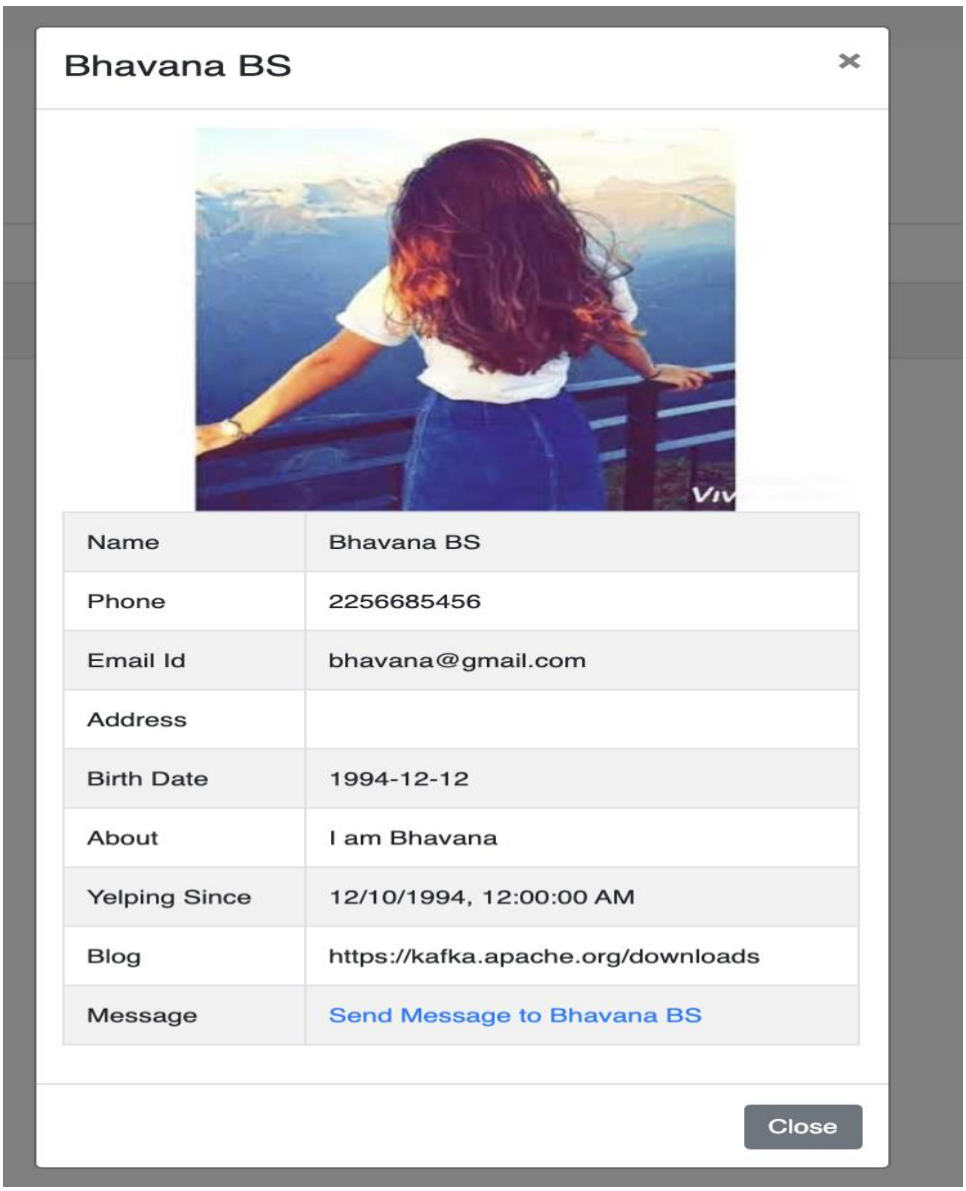
View Participants

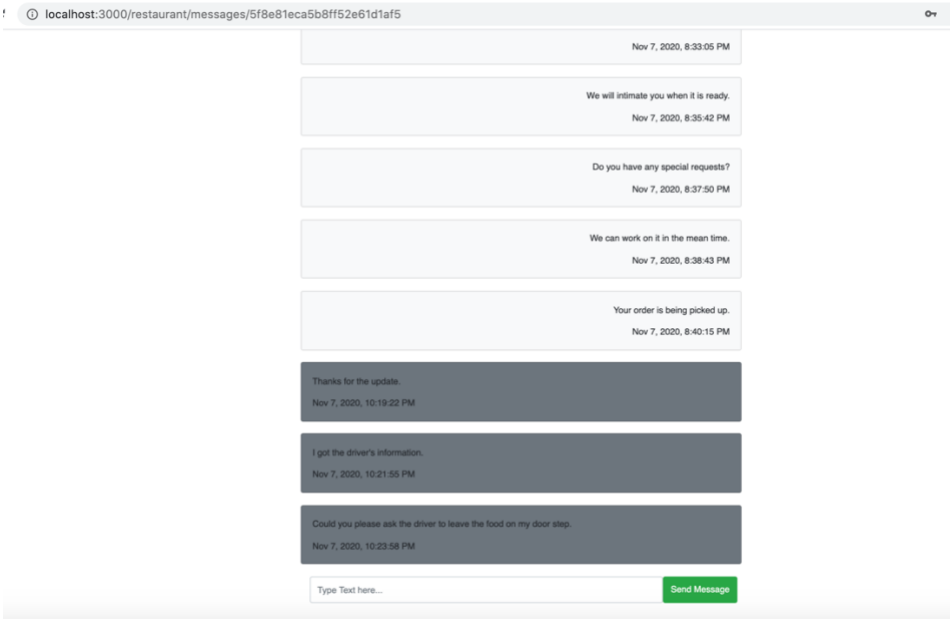
Time: 12:00

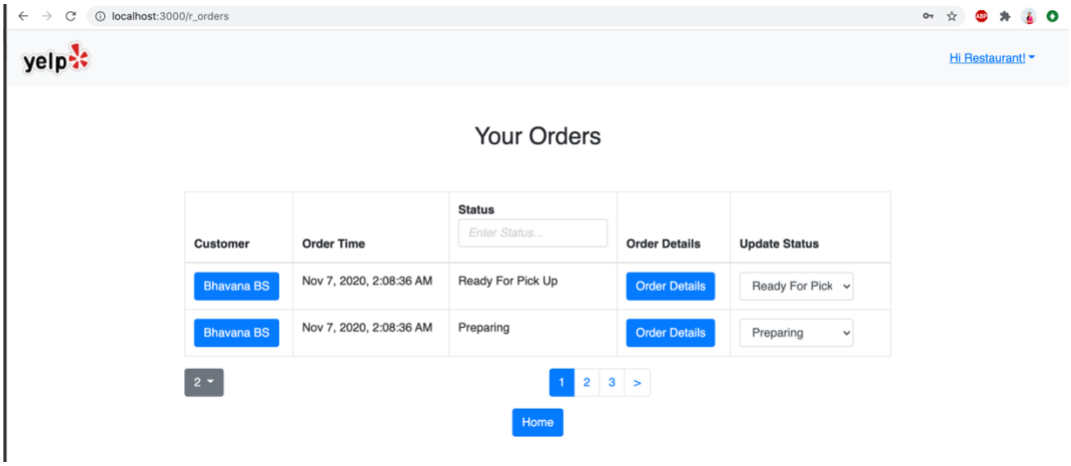
On: 2020-12-08

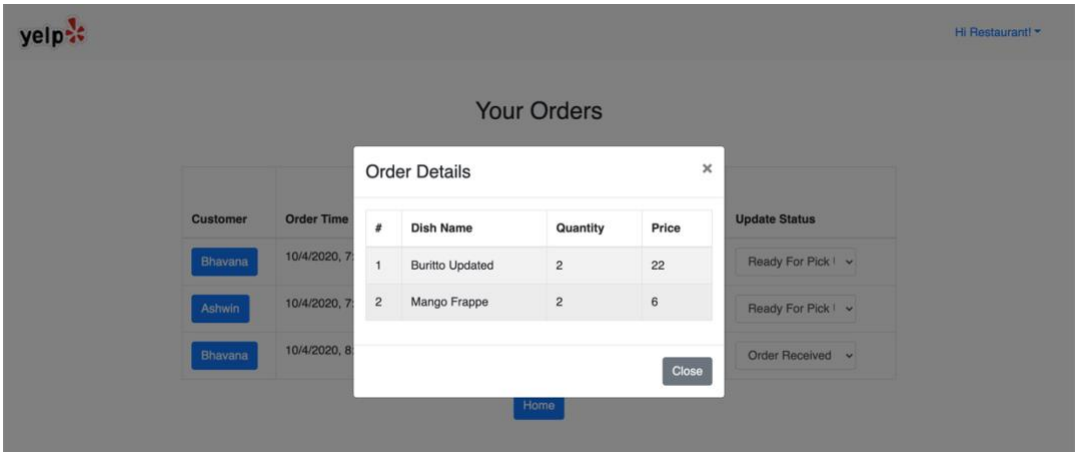
‹ 1 ›

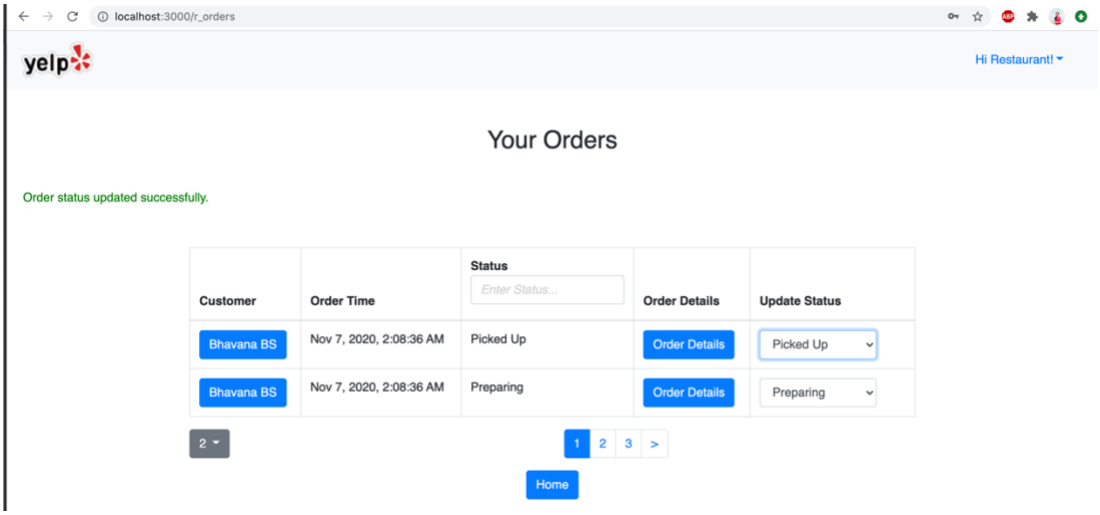

yelp
Hi Restaurant!
Restaurant Events
Add Event
DID's Registrations
Name Participant Profile
1 Bhavana BS
View Bhavana BS's Profile
Back to Events

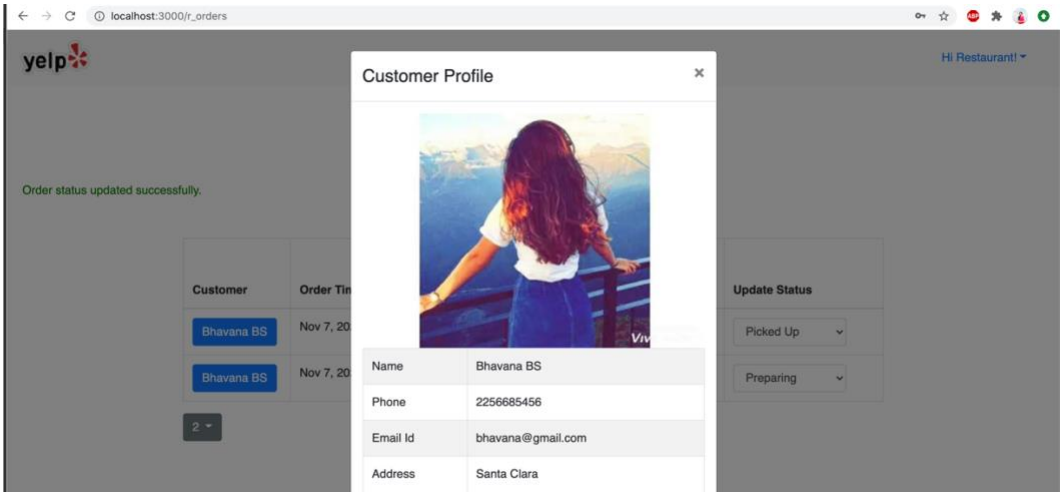

Bhavana BS
Name Bhavana BS
Phone 2256685456
Email Id bhavana@gmail.com
Address
Birth Date 1994-12-12
About I am Bhavana
Yelping Since 12/10/1994, 12:00:00 AM
Blog https://kafka.apache.org/downloads
Message Send Message to Bhavana BS
Close

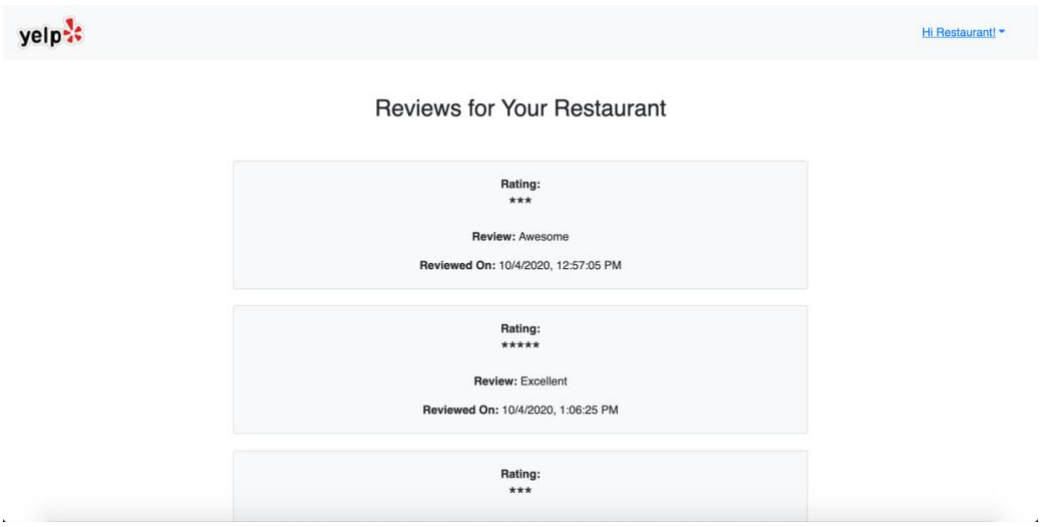

localhost:3000/restaurant/messages/5f8e81eca5b8ff52e61d1af5
Nov 7, 2020, 8:33:05 PM
We will intimate you when it is ready.
Nov 7, 2020, 8:35:42 PM
Do you have any special requests?
Nov 7, 2020, 8:37:50 PM
We can work on it in the mean time.
Nov 7, 2020, 8:38:43 PM
Your order is being picked up.
Nov 7, 2020, 8:40:15 PM
Thanks for the update.
Nov 7, 2020, 10:19:22 PM
I got the driver's information.
Nov 7, 2020, 10:21:55 PM
Could you please ask the driver to leave the food on my door step.
Nov 7, 2020, 10:23:58 PM
Type Text here...
Send Message


localhost:3000/r_orders
yelp
Hi Restaurant!
Your Orders
Customer
Order Time
Status
Enter Status...
Order Details
Update Status
Bhavana BS
Nov 7, 2020, 2:08:36 AM
Ready For Pick Up
Order Details
Ready For Pick
Bhavana BS
Nov 7, 2020, 2:08:36 AM
Preparing
Order Details
Preparing
2
1
2
3
>
Home


yelp
Hi Restaurant!
Your Orders
Order Details
#
Dish Name
Quantity
Price
1
Buritto Updated
2
22
2
Mango Frappe
2
6
Close
Customer
Order Time
Update Status
Bhavana
Ashwin
Bhavana
Ready For Pick
Ready For Pick
Order Received
Home

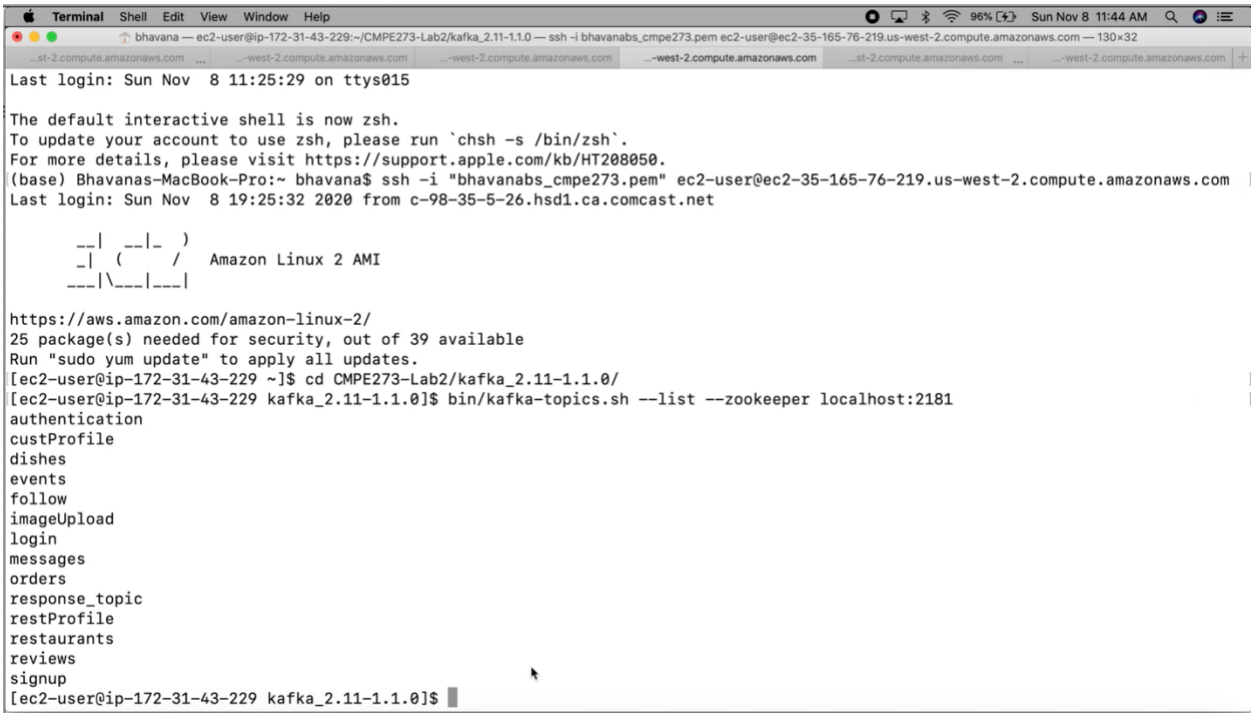




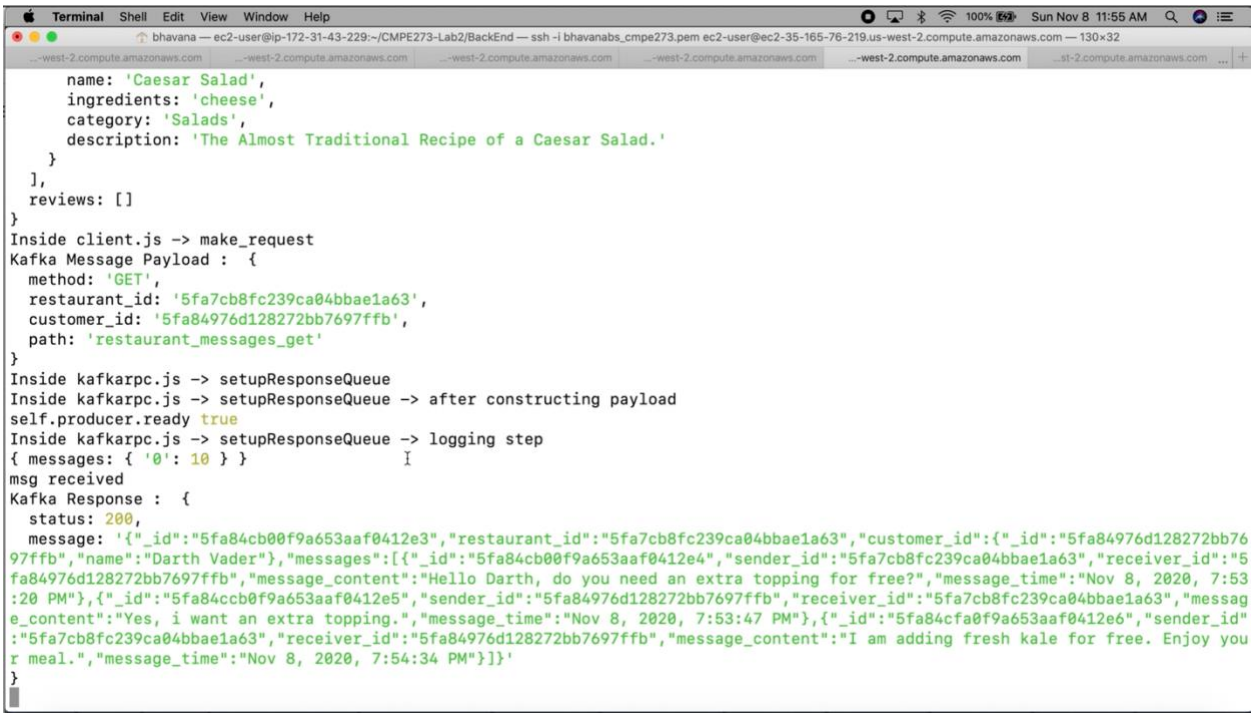


Deployment Screenshot:

Kafka running on EC2 instance screenshot



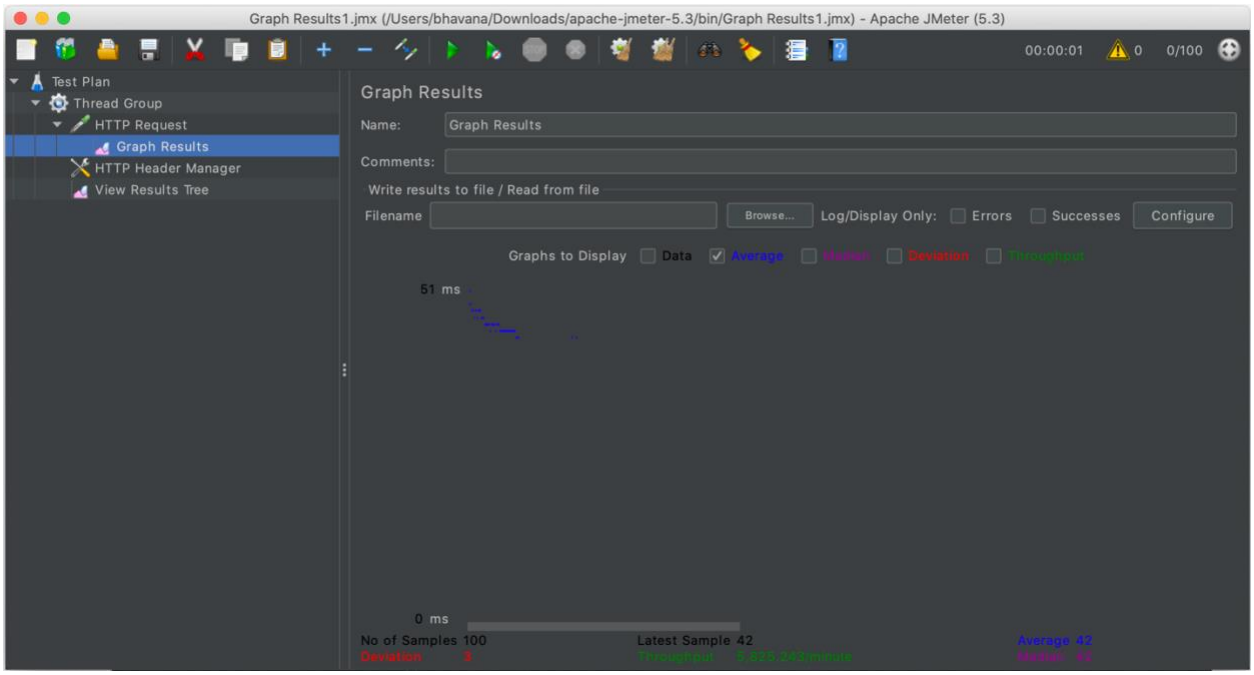
Kafka Backend Running Logs

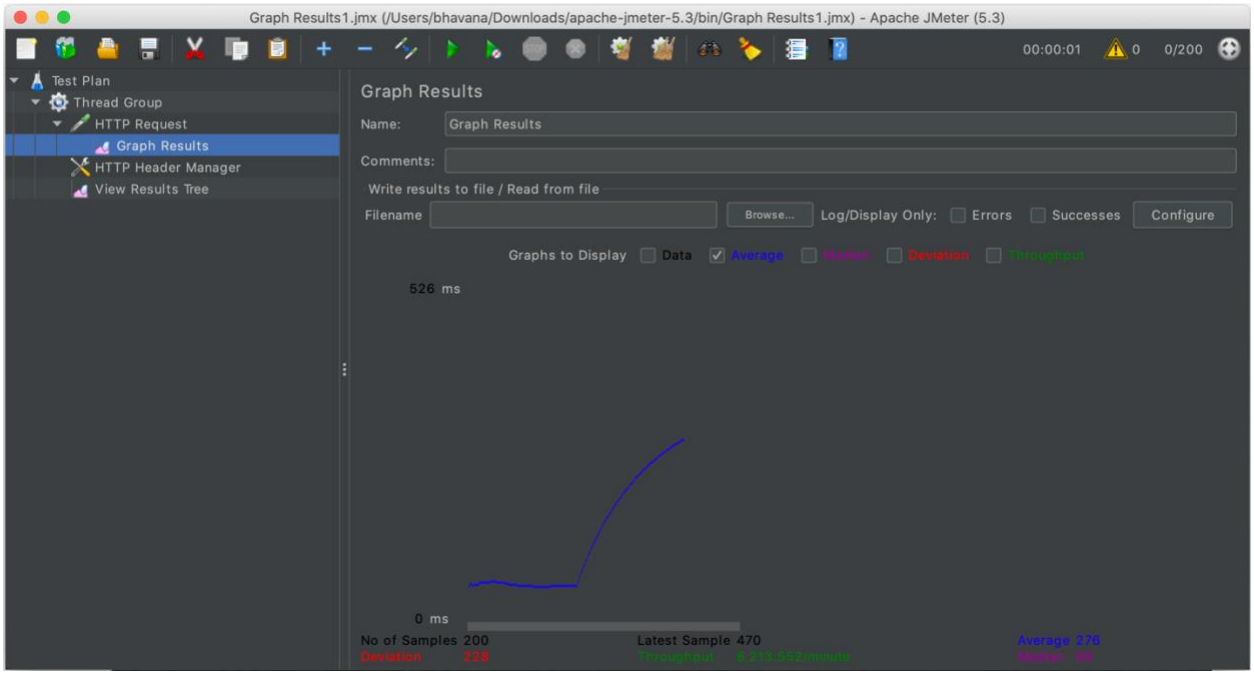


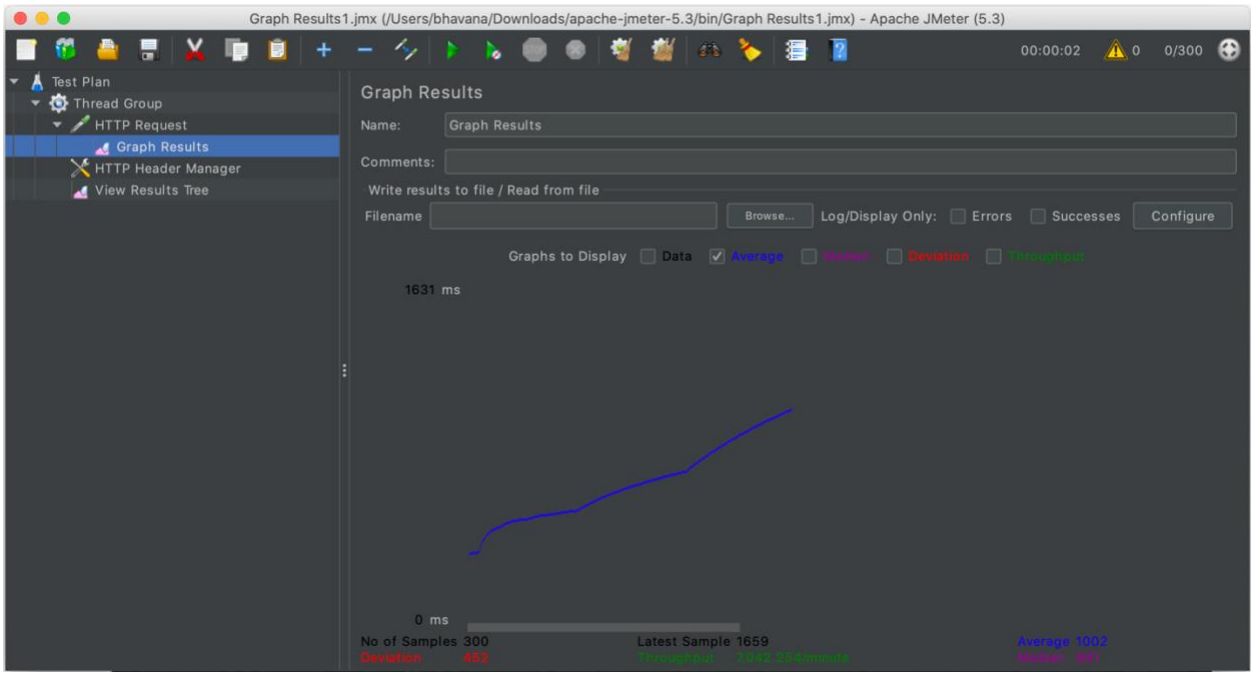
Testing Results:

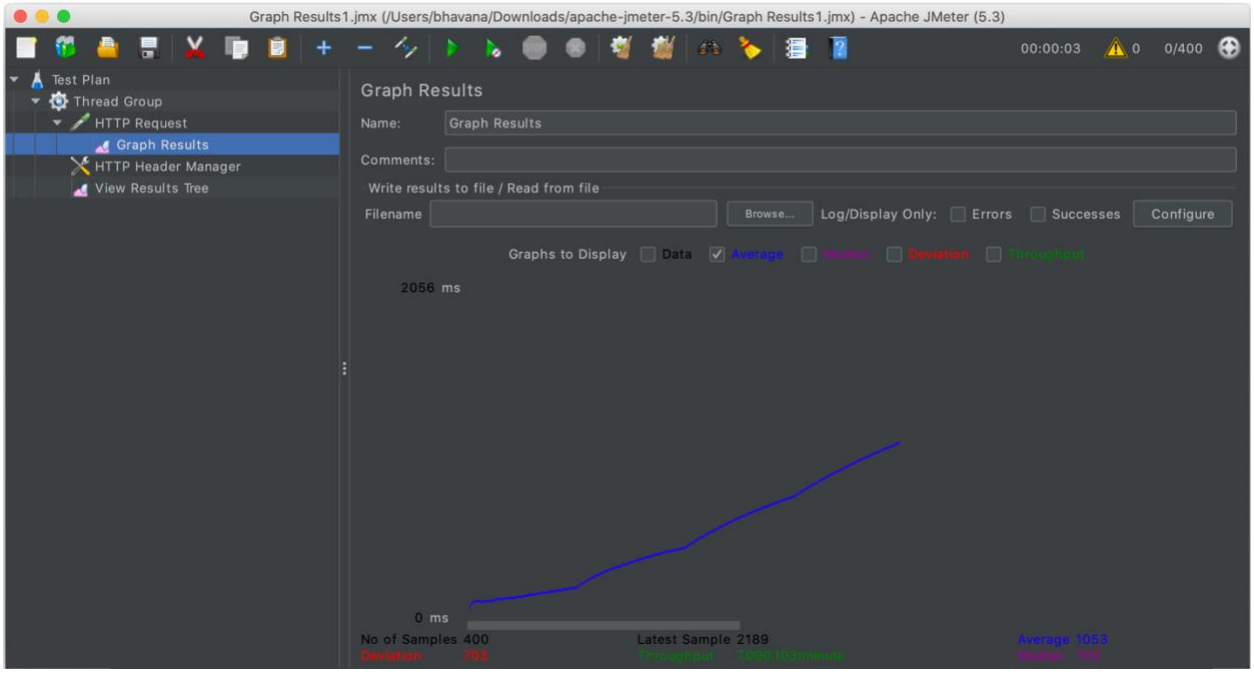
JMeter Testing:

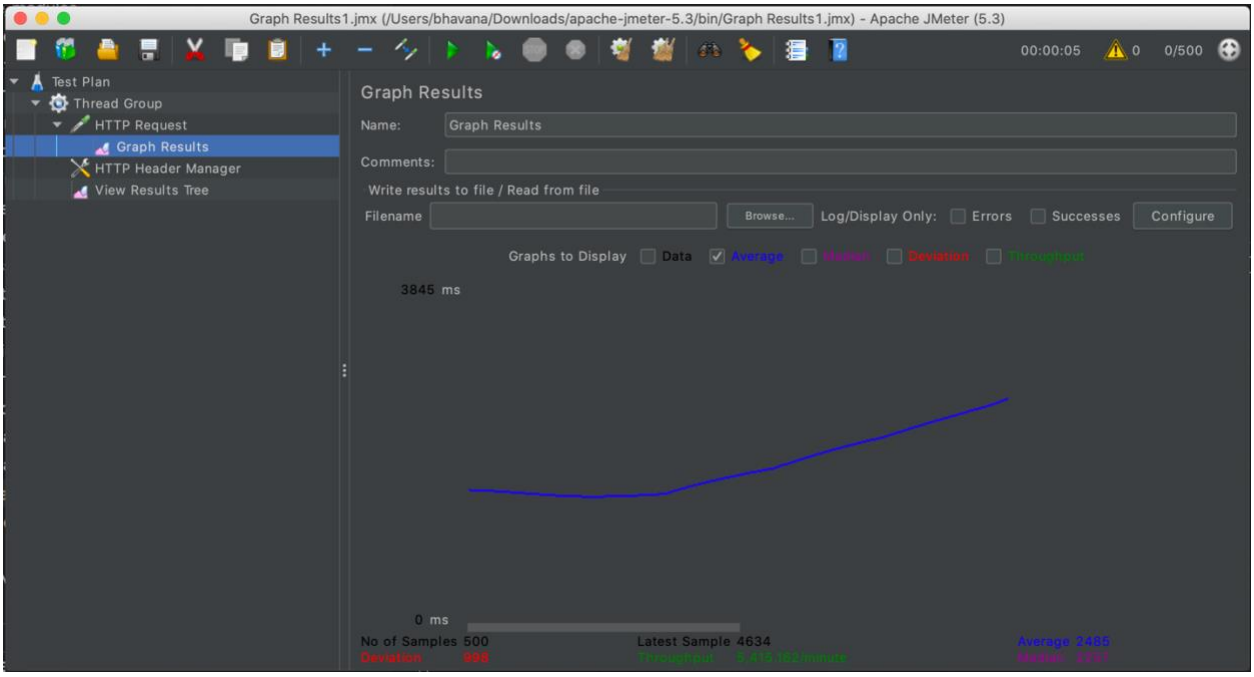
Without connection Pooling:



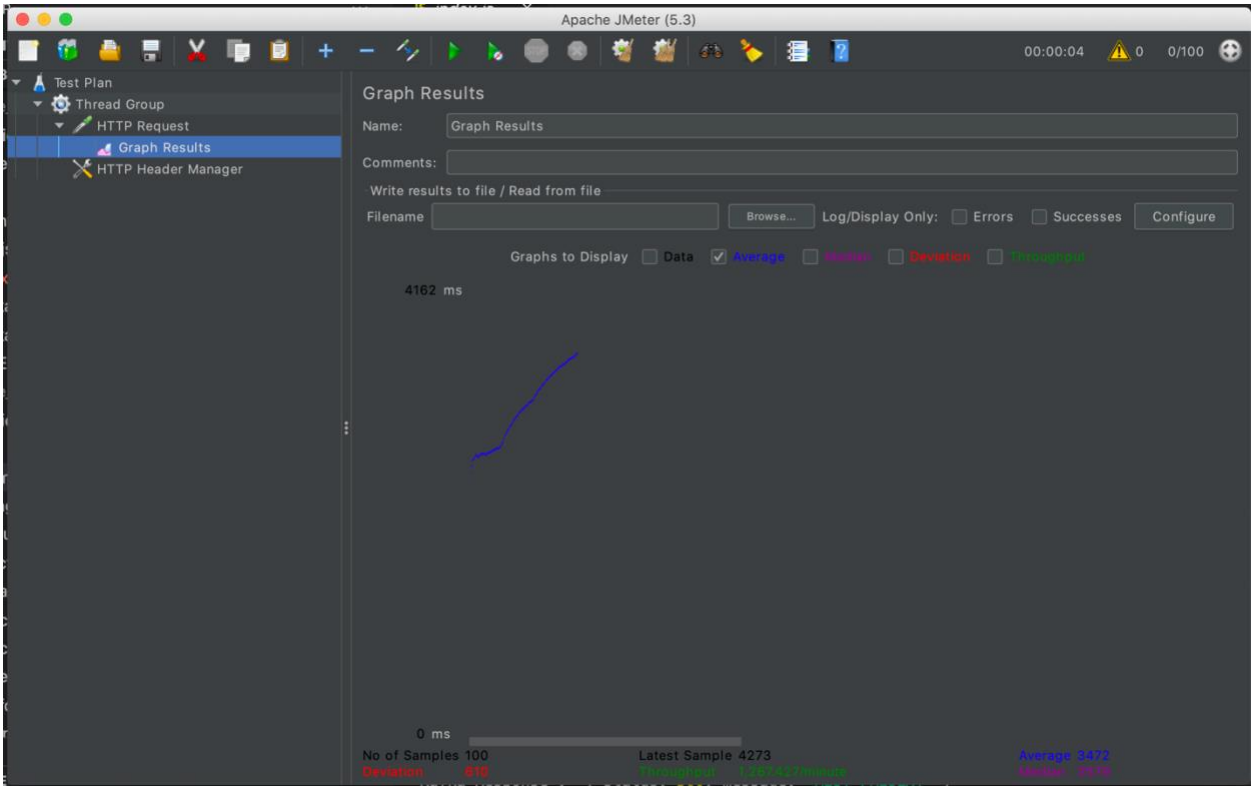


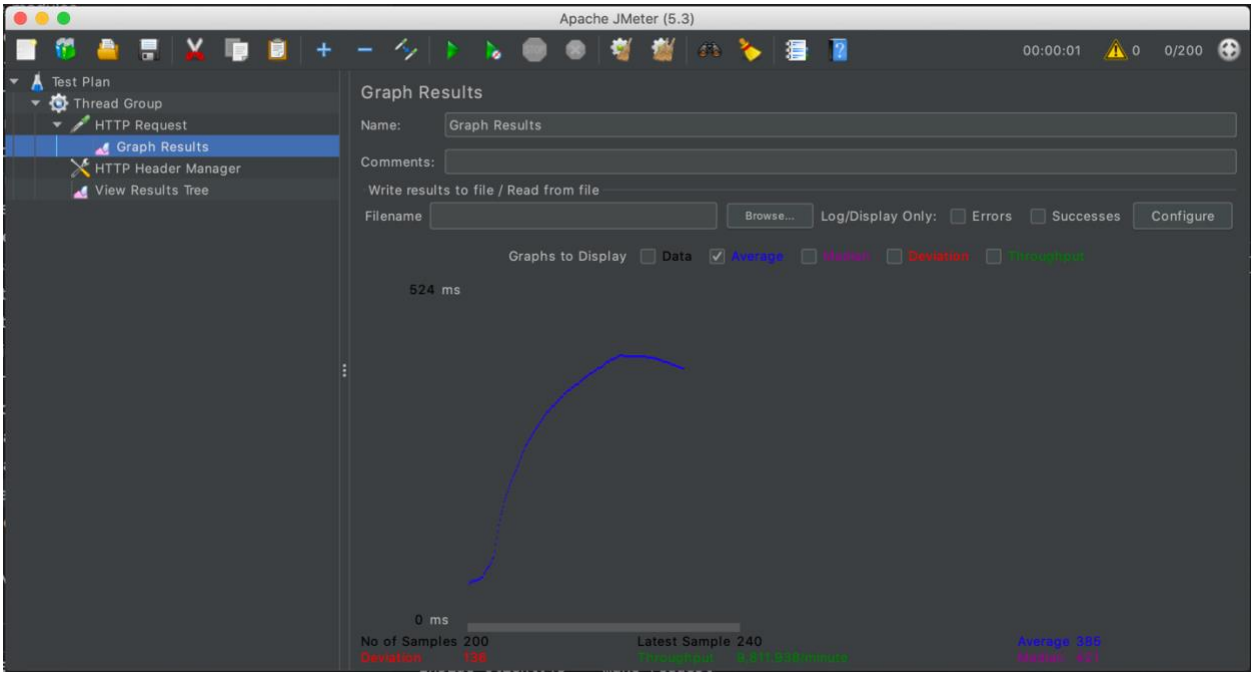

Graph Results1.jmx (/Users/bhavana/Downloads/apache-jmeter-5.3/bin/Graph Results1.jmx) - Apache JMeter (5.3)
00:00:02
0
0/300
Test Plan
Thread Group
HTTP Request
Graph Results
HTTP Header Manager
View Results Tree
Graph Results
Name:
Graph Results
Comments:
Write results to file / Read from file
Filename
Browse...
Log/Display Only:
Errors
Successes
Configure
Graphs to Display
Data
Average
Deviation
Throughput
1631 ms
0 ms
No of Samples 300
Latest Sample 1659
Average 1002
Deviation 452

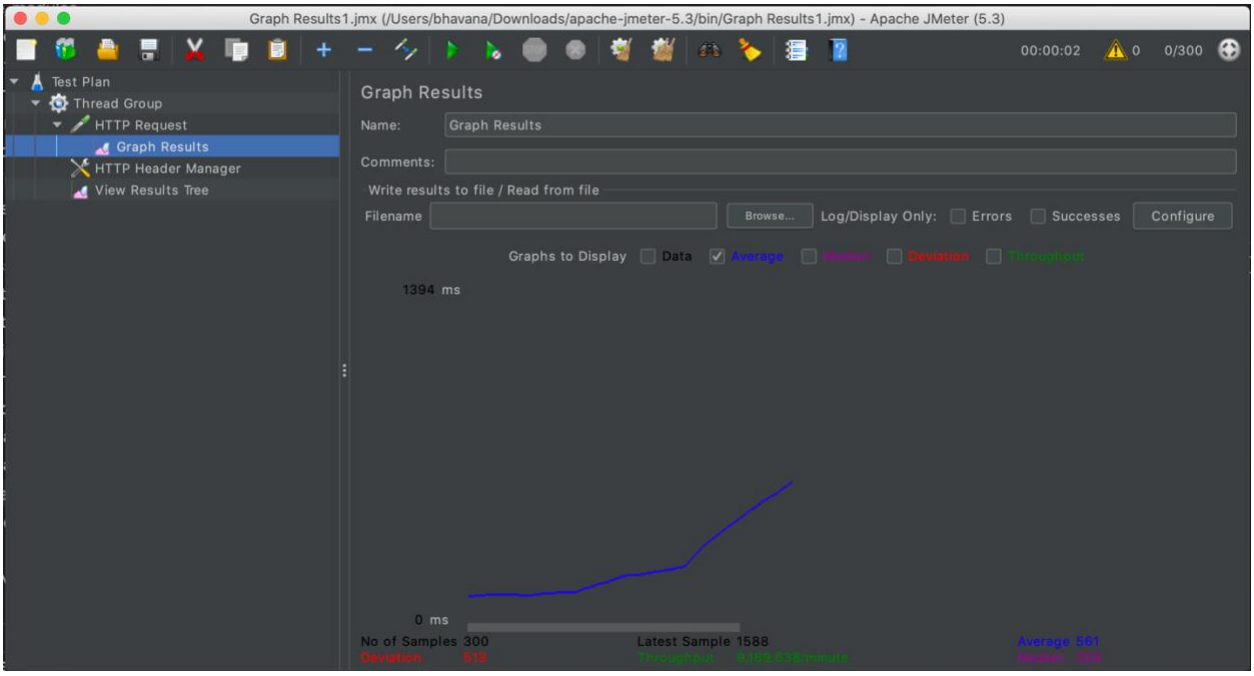

Graph Results1.jmx (/Users/bhavana/Downloads/apache-jmeter-5.3/bin/Graph Results1.jmx) - Apache JMeter (5.3)
00:00:03
0
0/400
Test Plan
Thread Group
HTTP Request
Graph Results
HTTP Header Manager
View Results Tree
Graph Results
Name:
Graph Results
Comments:
Write results to file / Read from file
Filename
Browse...
Log/Display Only:
Errors
Successes
Configure
Graphs to Display
Data
Average
Deviation
Throughput
2056 ms
0 ms
No of Samples 400
Latest Sample 2189
Average 1053
Deviation 703

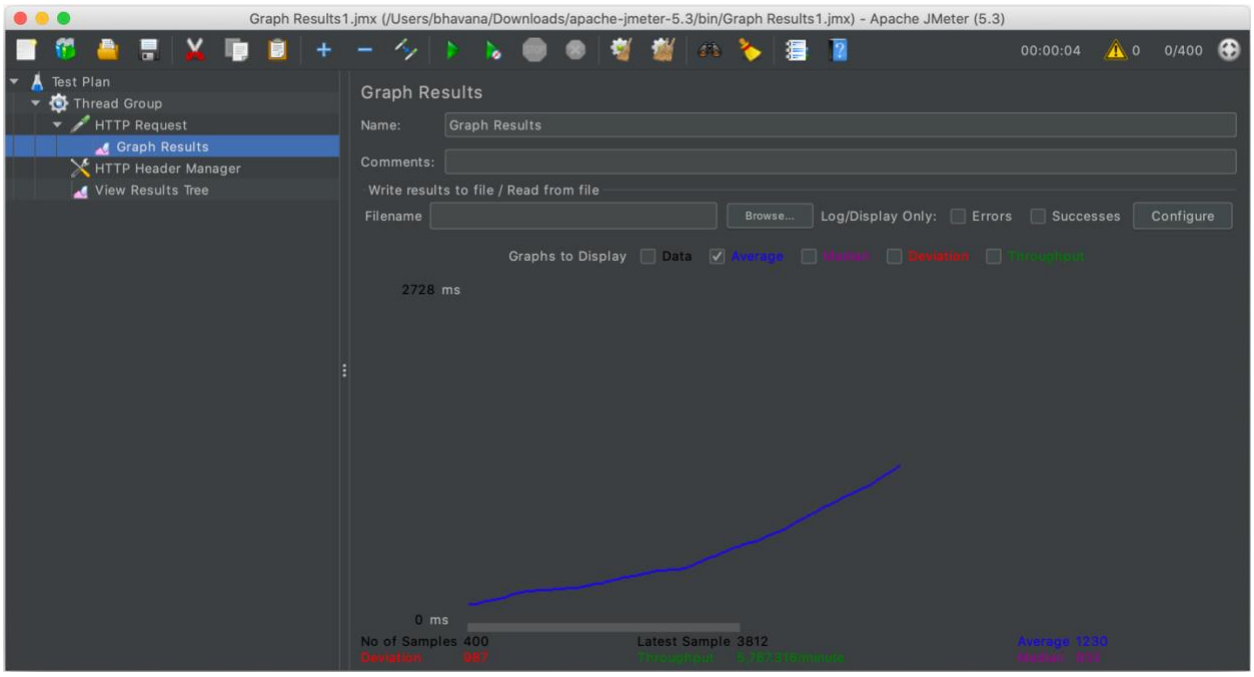


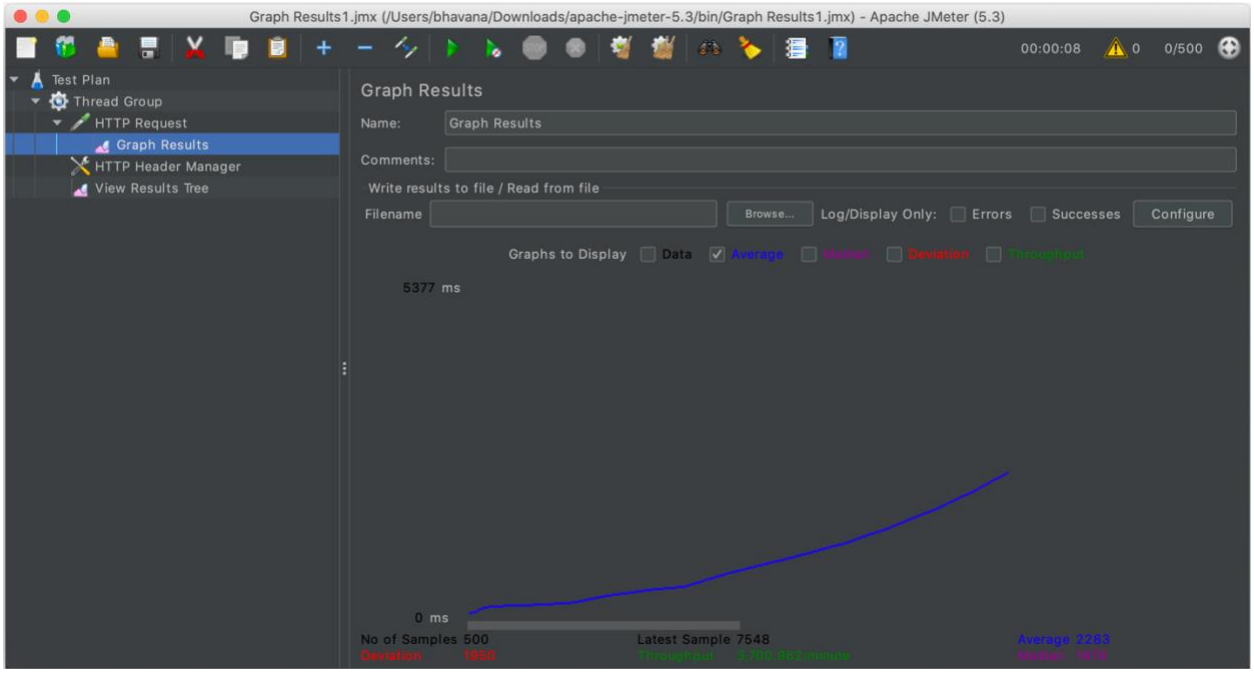
With connection Pooling:



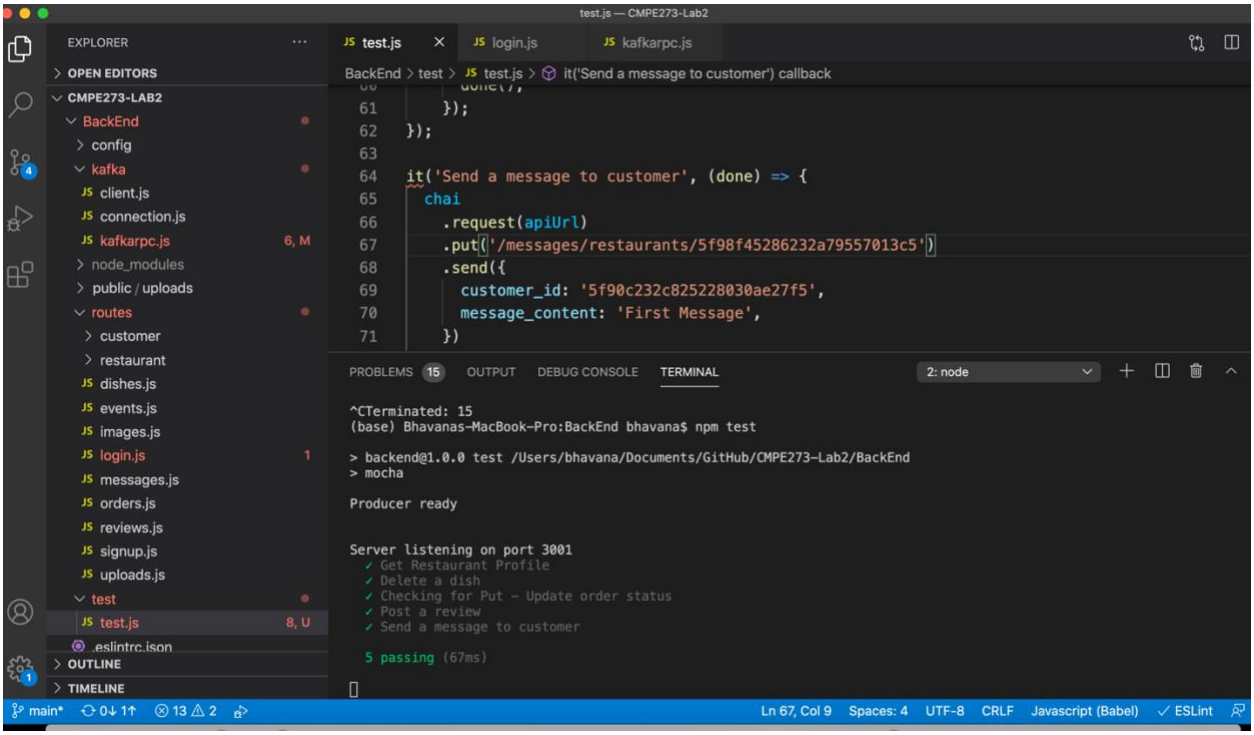

Apache JMeter (5.3)
00:00:01
0
0/200
Test Plan
Thread Group
HTTP Request
Graph Results
HTTP Header Manager
View Results Tree
Graph Results
Name:
Graph Results
Comments:
Write results to file / Read from file
Filename
Browse...
Log/Display Only:
Errors
Successes
Configure
Graphs to Display
Data
Average
Deviation
Throughput
524 ms
0 ms
No of Samples 200
Latest Sample 240
Average 385
Deviation 136


Graph Results1.jmx (/Users/bhavana/Downloads/apache-jmeter-5.3/bin/Graph Results1.jmx) - Apache JMeter (5.3)
00:00:02
0
0/300
Test Plan
Thread Group
HTTP Request
Graph Results
HTTP Header Manager
View Results Tree
Graph Results
Name:
Graph Results
Comments:
Write results to file / Read from file
Filename
Browse...
Log/Display Only:
Errors
Successes
Configure
Graphs to Display
Data
Average
Deviation
Throughput
1394 ms
0 ms
No of Samples 300
Latest Sample 1588
Average 581
Deviation 513





Mocha Testing:



Answers to Questions:

Q 1:

In Lab 1, authentication was performed using cookie in HTTP-Header. Difference between JWT-Passport and cookie in authentication lies in the security. Passport is a session-based strategy for authentication wherein we make use of a session id which is stored in the cookie of the user's browser. The server verifies this session id in the cookie with the database information and carries out the verification process. Also, Passport is more secure as the token is signed for by the user key. Hence there is less change of identity theft. The token has an expiry which helps maintain small and authenticated sessions easier.

Q 2:

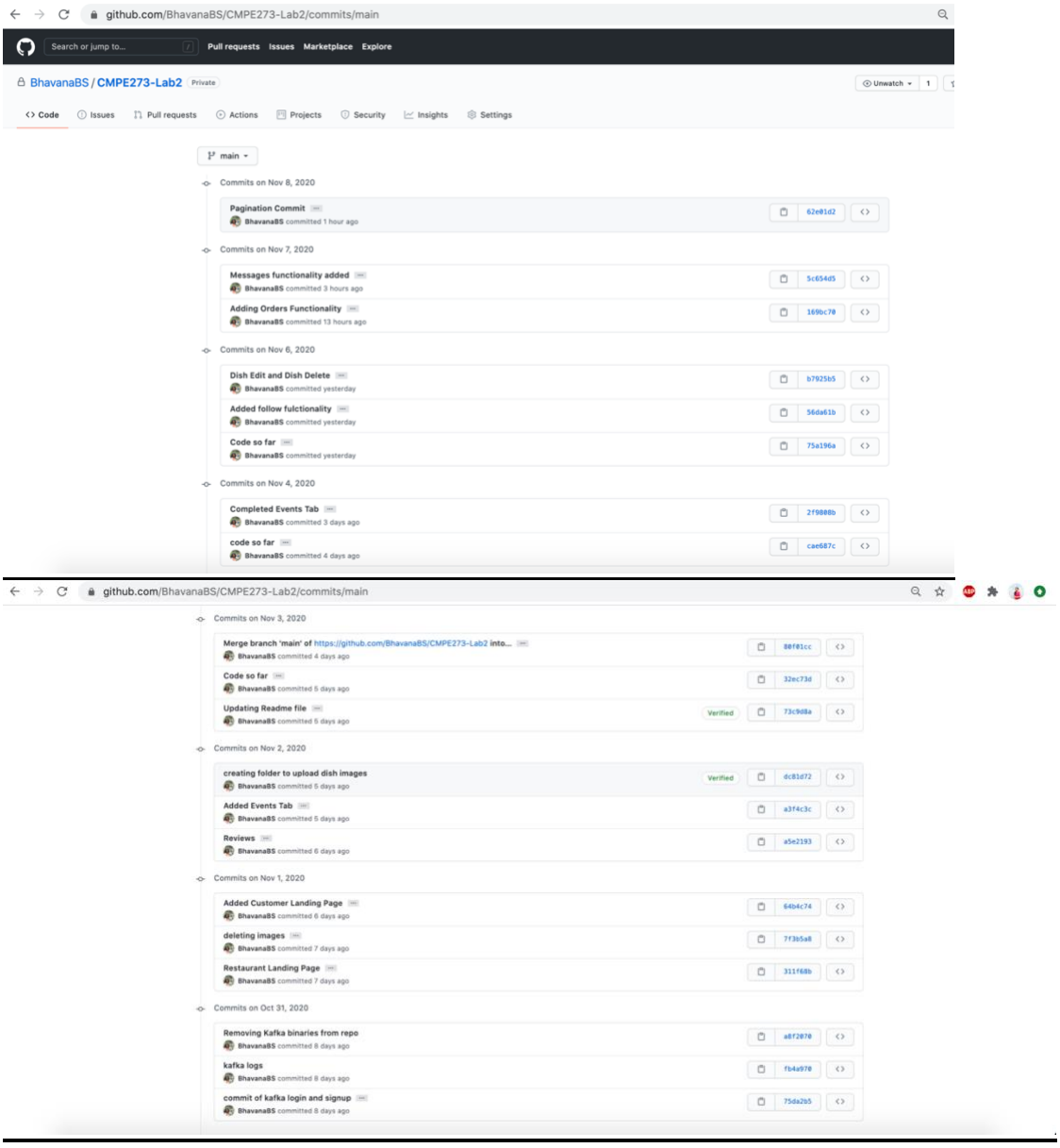
Kafka is used as a messaging queuing system, which guarantees that the message is delivered to the client. As a result, it is used as an abstract communication channel between the two systems in a scalable infrastructure. This helps in making the calculation of the request async and different systems can scale and function separately. This also guarantees that when the Kafka client system is down, by queuing the communication messages until the system recovers it provides the required error tolerance to the infrastructure at scale.

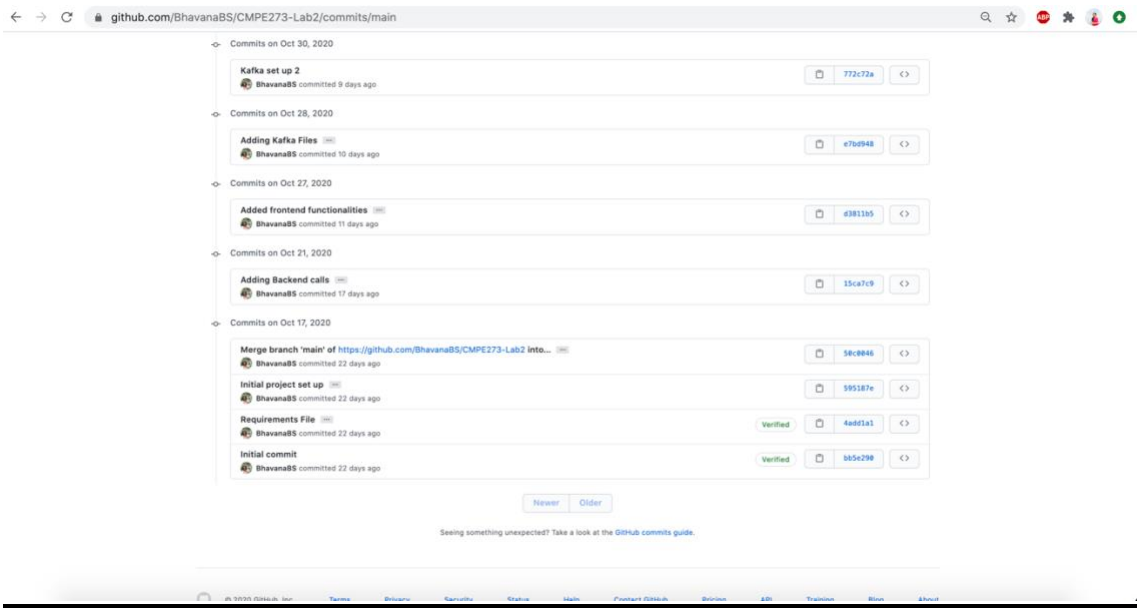
Question 3:

SQL implementation is good when the application data is more structured and relational. Like when a customer places an order or registers for an event. Here there is a logical relation between customer, restaurant and orders/ events tables. This relation is difficult to implement using

mongoose in spite of populate option. MySQL join works better in these scenarios. Whereas Mongo DB is efficient when there is unstructured data involved. Like when saving the restaurant profile, some of the attributes like reviews of the restaurant, dishes, images may not always be available. And also, a single fetch call, without join is enough to retrieve all the data required.

Git Commit history:




github.com/BhavanaBS/CMPE273-Lab2/commits/main
Commits on Oct 30, 2020
Kafka set up 2
BhavanaBS committed 9 days ago
772c72a
Commits on Oct 28, 2020
Adding Kafka Files
BhavanaBS committed 10 days ago
e7bd948
Commits on Oct 27, 2020
Added frontend functionalities
BhavanaBS committed 11 days ago
d3811b5
Commits on Oct 21, 2020
Adding Backend calls
BhavanaBS committed 17 days ago
15ca7c9
Commits on Oct 17, 2020
Merge branch 'main' of https://github.com/BhavanaBS/CMPE273-Lab2 into...
BhavanaBS committed 22 days ago
58c0046
Initial project set up
BhavanaBS committed 22 days ago
595187e
Requirements File
BhavanaBS committed 22 days ago
Verified
4add1a1
Initial commit
BhavanaBS committed 22 days ago
Verified
bb5e290
Newer
Older
Seeing something unexpected? Take a look at the GitHub commits guide.