San Jose State University

CMPE 275

Project- Cloud Event Center

Instructor - Charles Zhang

Submitted By

Group 14

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1. Introduction:

Cloud Event Center (CEC) is a web application that helps to create and organize an event for the organizer as well as register the event for participants. Users can Browse different events, and check event details. Organizers can create events, and accept and reject participants' registration requests. Users can register for the events as participants and pay fees for the same using payment simulation. Users can signup and sign in using local login as well as Google Oath. The application also provides email notifications based on different activities performed and also has an analytics dashboard showing multiple stats through visualizations. Users can also change the system time to test the various functionality. We have a crone job for updating our database system time and thus event status and forum status every hour.

2. High level and component level design:

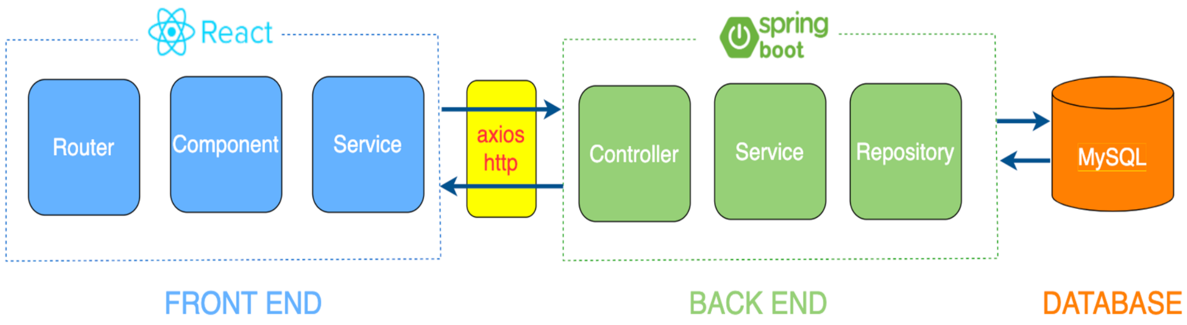
● **Hosting & Deployment:** The architecture's outermost layer indicates that the complete application is hosted on cloud providers such as Amazon EC2.
● **MVC Architecture:** This application was built using the MVC Architecture and React.js. The frontend uses JAVA Spring Boot to produce web pages, and the backend uses Persistence Storage and REST APIs.
○ **React.js:** All needs were thoroughly examined, and each requirement was divided into non-overlapping functionality and components. Each component has its own state and procedures related to the functionality the component is meant to perform. To assist with page navigation and redirection, react-router-dom was used for routing.

○ **Spring boot:** We utilized Spring Boot to create the REST APIs. We began by modeling the Entity classes for the database objects and then generated POJO class files to improve program readability and reusability, as well as to map variables and datatypes from the frontend to those in the backend. Controller files were in charge of endpoints, handling incoming requests and mapping them to the appropriate service layer files that implemented real business logic. JPARepositories and Hibernate are ORMs that were designed to handle various queries related to entity objects.

● **Others:** Some other technologies that we've used in the project are

○ **EmailJS**: external emailing service provider that facilitates sending emails on behalf of an organization through template configuration.

○ **Firebase**: Email authentication and verification.



3. Technology choices:

To develop the application, we have used Spring Boot for the backend. We have used Spring wiring for dependency injection and Spring MVC for REST API development.

For frontend development, we have used React.js to create a Single Page Web Application. We have used libraries like React-bootstrap, and Material UI for UI design and theming. We also have used Password encryption using Bcrypt.

We have used Relational Database Mysql hosted on Amazon RDS, as a database to persist the data.

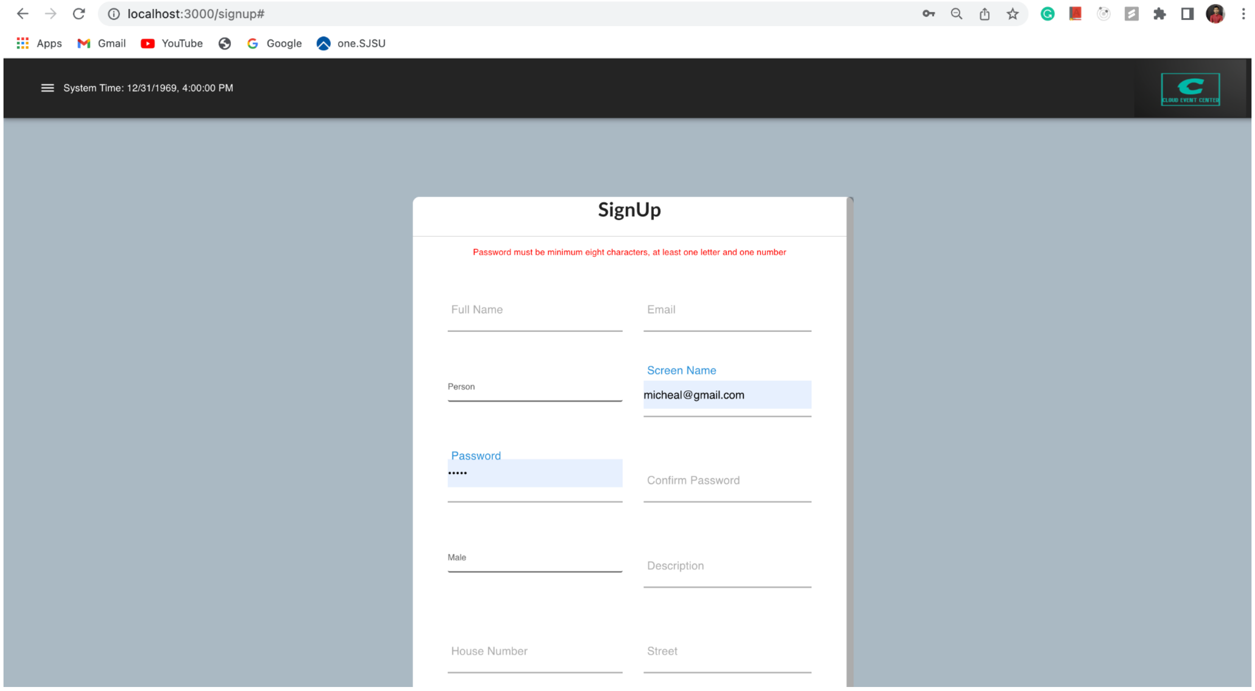
We also have supported Google OAuth login using Firebase and supported email verification.

We used JPA Hibernate ORM for mapping the relations between different entities and Implemented Transactions for all CRUD operations using CRUDRepository.

Finally, we deployed our application on the Amazon EC2 instance.

4. Description of Features with final screenshots

- Login and Signup- Users can log in and signup for the application using either of local login or a google login.



localhost:3000/signup#

System Time: 12/31/1969, 4:00:00 PM

SignUp

Password must be minimum eight characters, at least one letter and one number

Full Name

Email

Person

Screen Name: micheal@gmail.com

Password: •••••

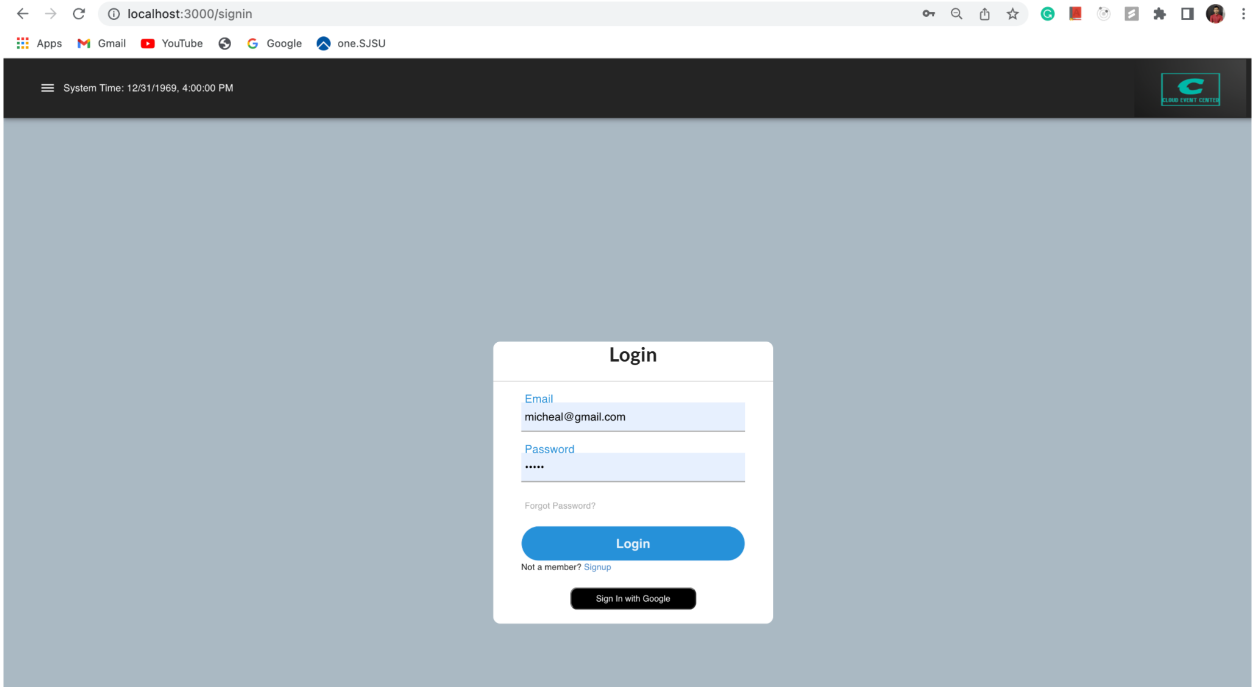
Confirm Password

Male

Description

House Number

Street



localhost:3000/signin

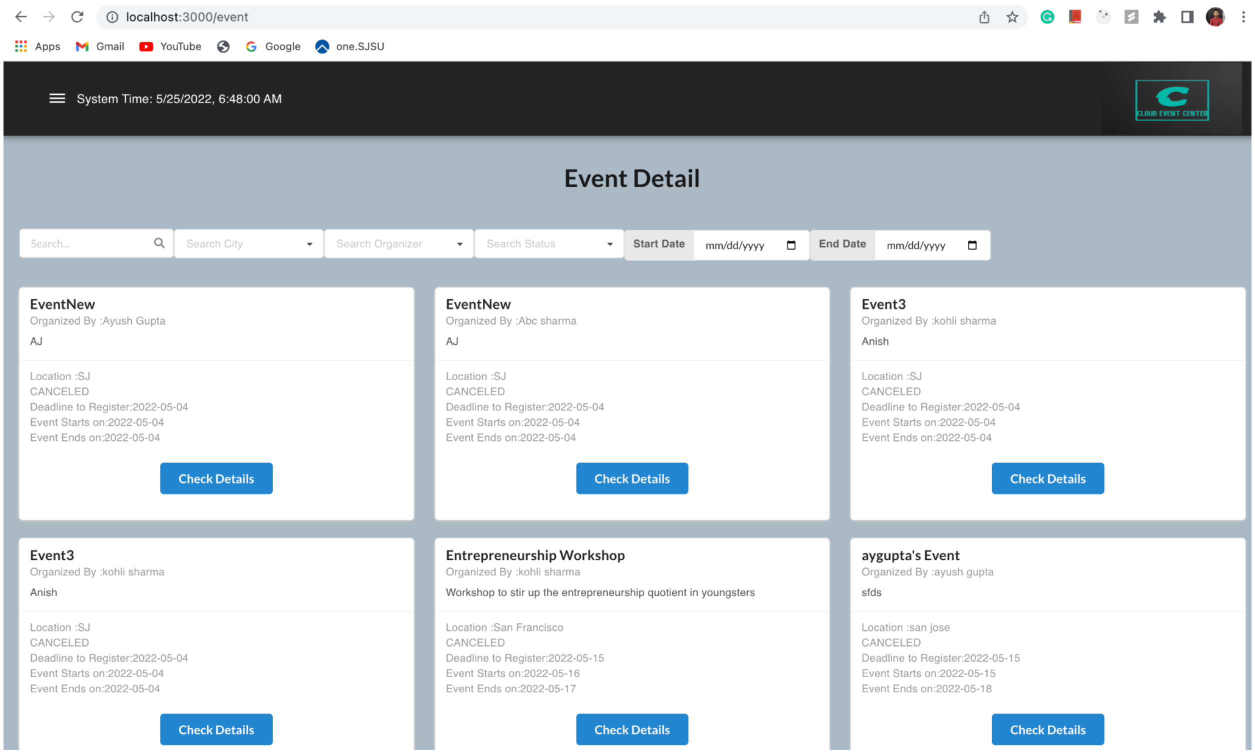
System Time: 12/31/1969, 4:00:00 PM

Login

Email: micheal@gmail.com

Password: •••••

- Events Home Page - Here Users can Browse through all the events and see the basic event description. User can apply different filters. Multiple filters can be applied. Keyword search can also be performed Users can navigate to check details from here.



System Time: 5/25/2022, 6:48:00 AM

Event Detail

EventNew
Organized By :Ayush Gupta
AJ
Location :SJ
CANCELED
Deadline to Register:2022-05-04
Event Starts on:2022-05-04
Event Ends on:2022-05-04

EventNew
Organized By :Abc sharma
AJ
Location :SJ
CANCELED
Deadline to Register:2022-05-04
Event Starts on:2022-05-04
Event Ends on:2022-05-04

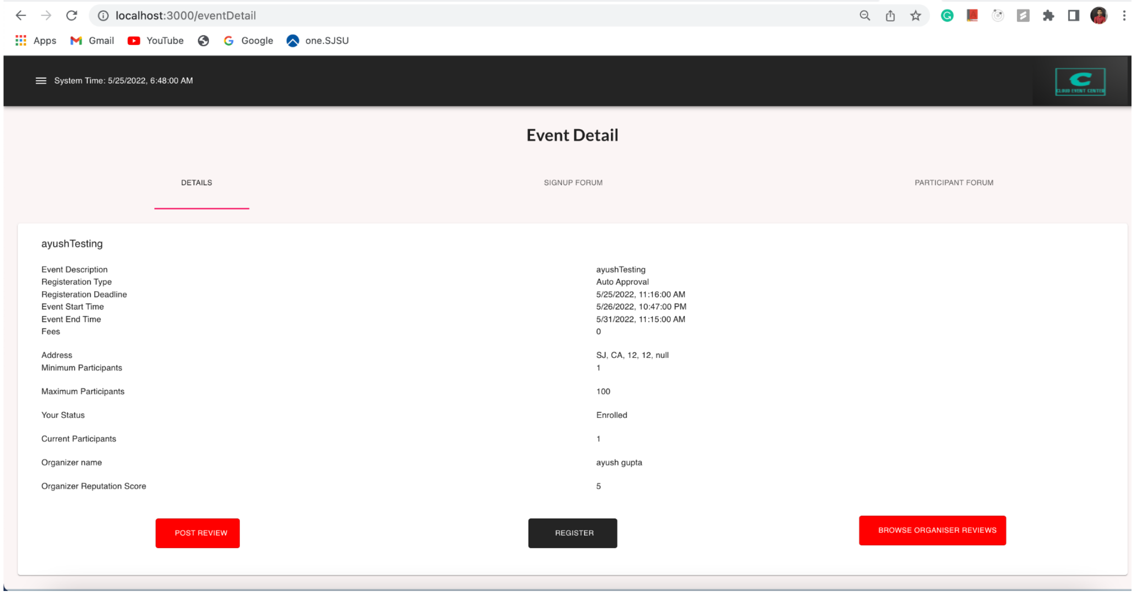
Event3
Organized By :kohli sharma
Anish
Location :SJ
CANCELED
Deadline to Register:2022-05-04
Event Starts on:2022-05-04
Event Ends on:2022-05-04

Event3
Organized By :kohli sharma
Anish
Location :SJ
CANCELED
Deadline to Register:2022-05-04
Event Starts on:2022-05-04
Event Ends on:2022-05-04

Entrepreneurship Workshop
Organized By :kohli sharma
Workshop to stir up the entrepreneurship quotient in youngsters
Location :San Francisco
CANCELED
Deadline to Register:2022-05-15
Event Starts on:2022-05-16
Event Ends on:2022-05-17

aygupta's Event
Organized By :ayush gupta
sfds
Location :san jose
CANCELED
Deadline to Register:2022-05-15
Event Starts on:2022-05-15
Event Ends on:2022-05-18

- Event Details Page: Here we have three tabs. One describes Event details where the user can register for the event, and navigate to organizer reviews and approved and pending participants list page. In the second tab, users can use the signup forum to post text and image messages. In the last tab, we have to participate forum where participants and organizers can view and post text messages and images.

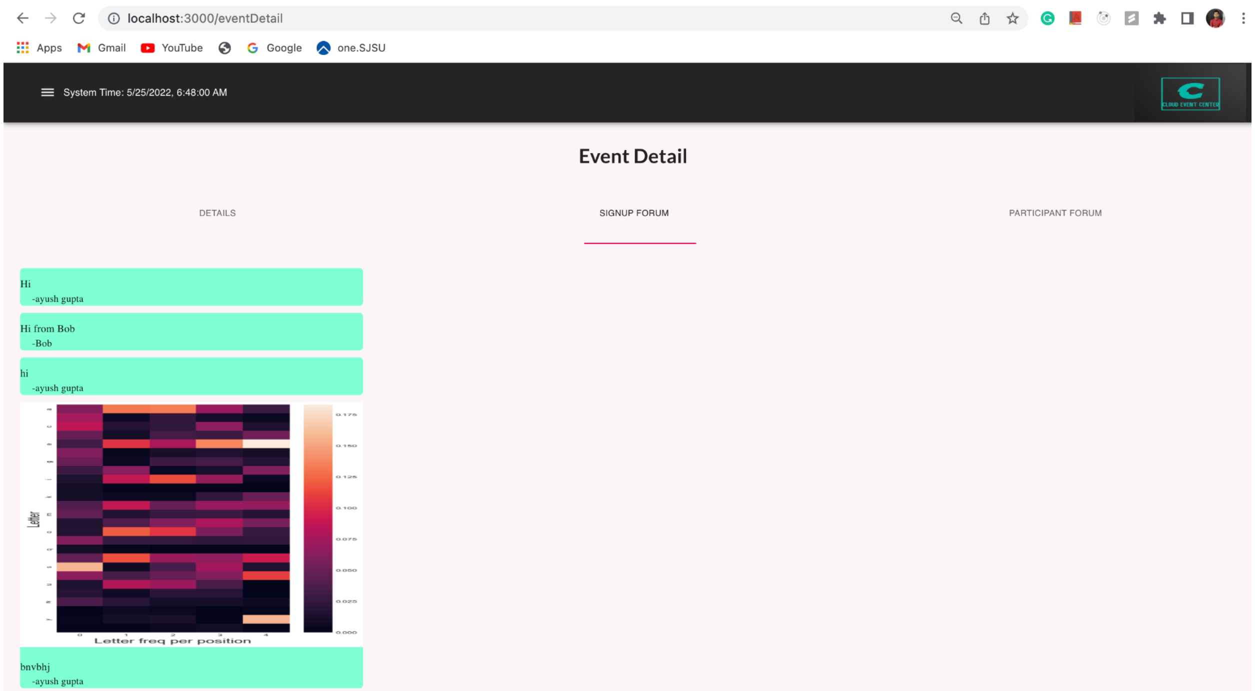


System Time: 5/25/2022, 6:48:00 AM

Event Detail

ayushTesting

Event Description	ayushTesting
Registeration Type	Auto Approval
Registeration Deadline	5/25/2022, 11:16:00 AM
Event Start Time	5/26/2022, 10:47:00 PM
Event End Time	5/31/2022, 11:15:00 AM
Fees	0
Address	SJ, CA, 12, 12, null
Minimum Participants	1
Maximum Participants	100
Your Status	Enrolled
Current Participants	1
Organizer name	ayush gupta
Organizer Reputation Score	5



System Time: 5/25/2022, 6:48:00 AM

Event Detail

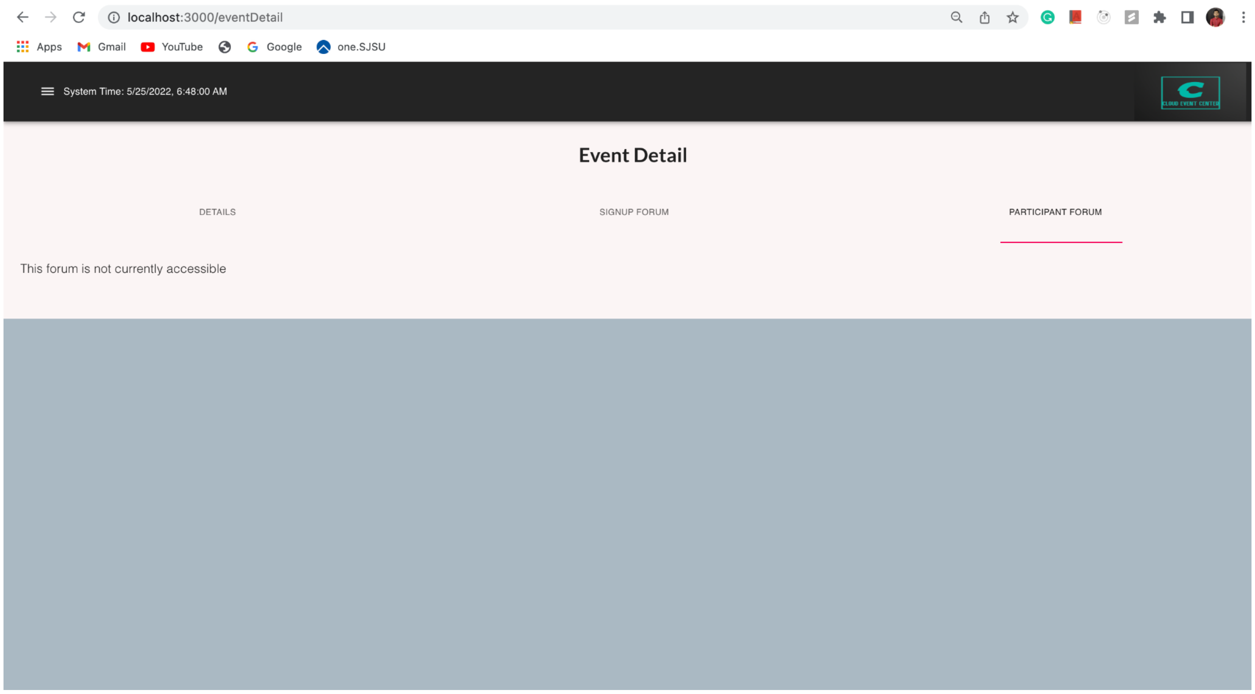
DETAILS | SIGNUP FORUM | PARTICIPANT FORUM

Hi
-ayush gupta

Hi from Bob
-Bob

hi
-ayush gupta

bnvbhj
-ayush gupta

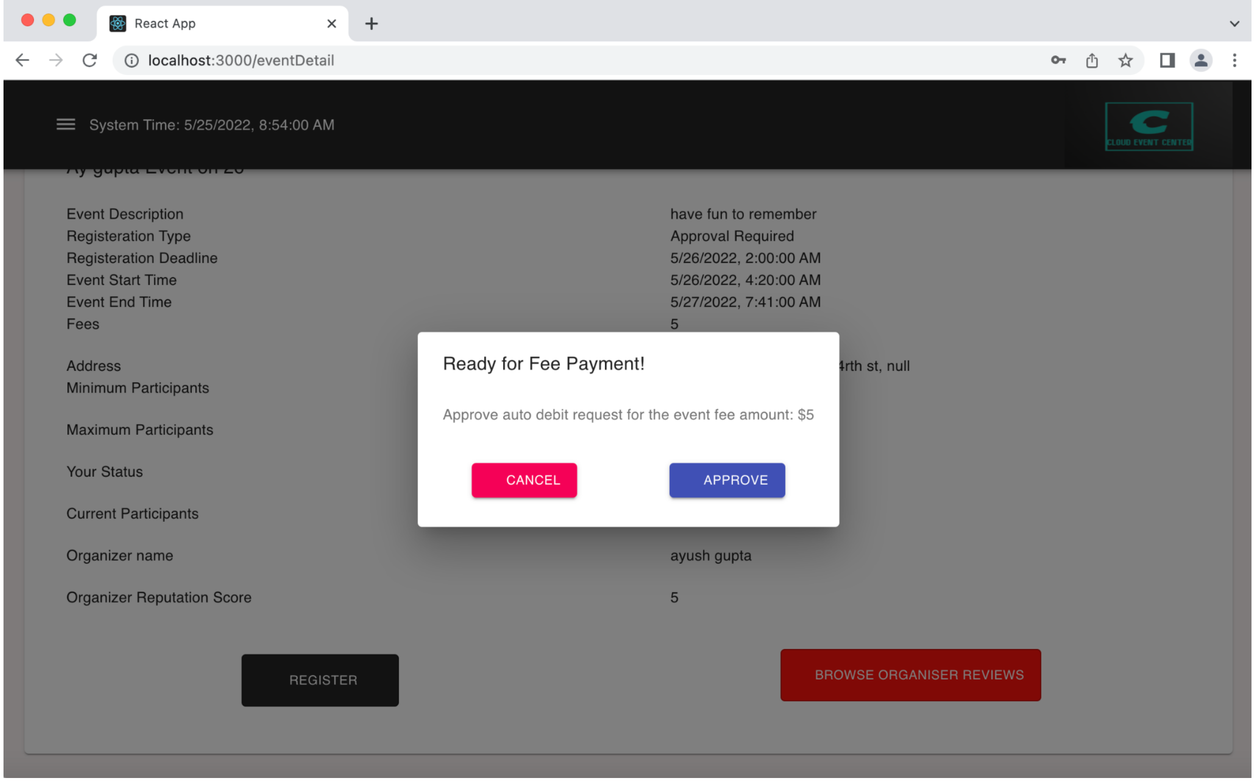


System Time: 5/25/2022, 6:48:00 AM

Event Detail

DETAILS | SIGNUP FORUM | PARTICIPANT FORUM

This forum is not currently accessible



System Time: 5/25/2022, 8:54:00 AM

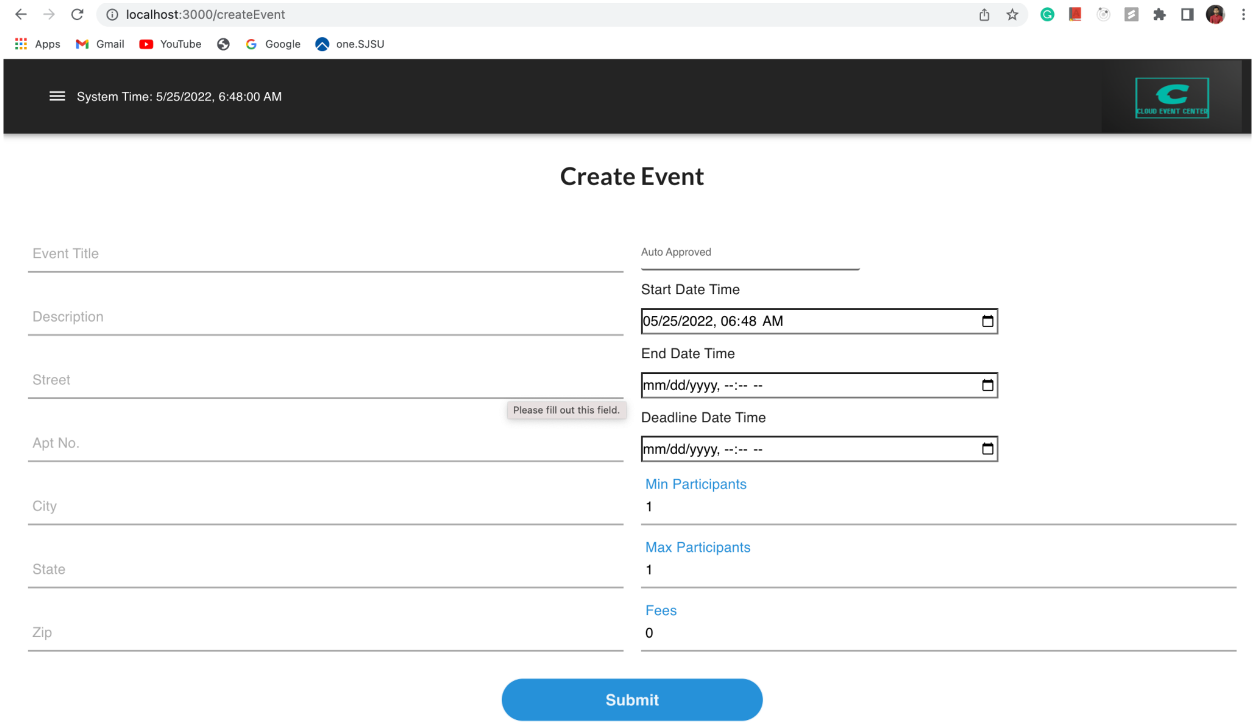
Ay gupta Event on 26

Event Description	have fun to remember
Registeration Type	Approval Required
Registeration Deadline	5/26/2022, 2:00:00 AM
Event Start Time	5/26/2022, 4:20:00 AM
Event End Time	5/27/2022, 7:41:00 AM
Fees	5
Address	4rth st, null
Minimum Participants	
Maximum Participants	
Your Status	
Current Participants	
Organizer name	ayush gupta
Organizer Reputation Score	5

Ready for Fee Payment!

Approve auto debit request for the event fee amount: $5

- Create Event Page: Users can create events here as an organizer.



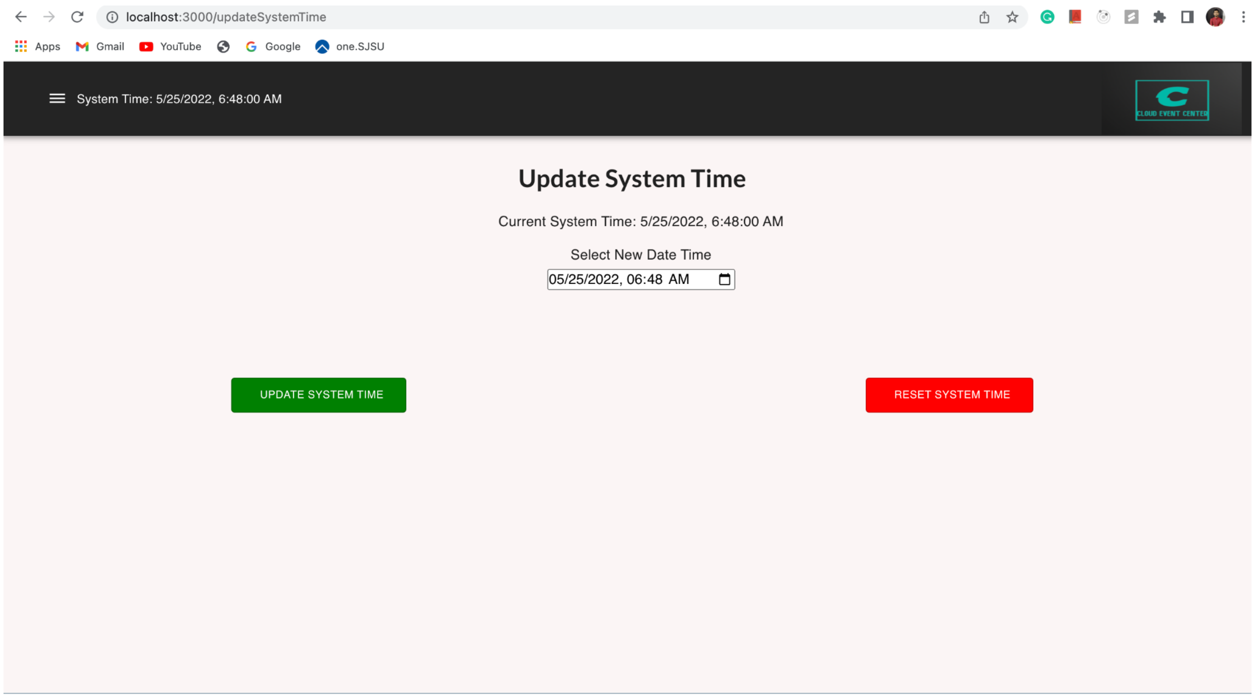
System Time: 5/25/2022, 6:48:00 AM

Create Event

Event Title	Auto Approved
	Start Date Time: 05/25/2022, 06:48 AM
Description	End Date Time: mm/dd/yyyy, --:-- --
Street	Deadline Date Time: mm/dd/yyyy, --:-- --
Apt No.	
City	Min Participants: 1
State	Max Participants: 1
Zip	Fees: 0

Please fill out this field.

- Update System time page: Here Users can change the system time of the application in the past and the future and test various functionalities according to it. We also have wrote Chrone Job to update system time and thus event status in database every hour.



System Time: 5/25/2022, 6:48:00 AM

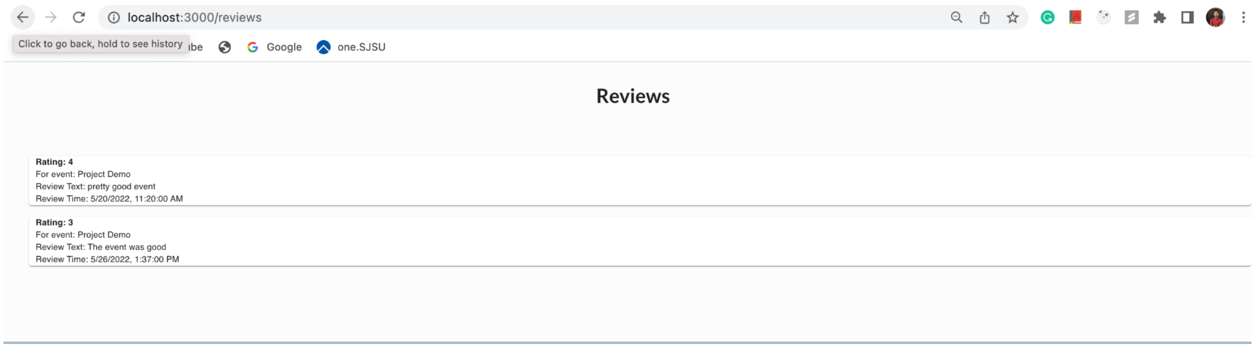
Update System Time

Current System Time: 5/25/2022, 6:48:00 AM

Select New Date Time

05/25/2022, 06:48 AM

- Reviews Page: Here Users can see all the reviews on an Organizer or a Participant

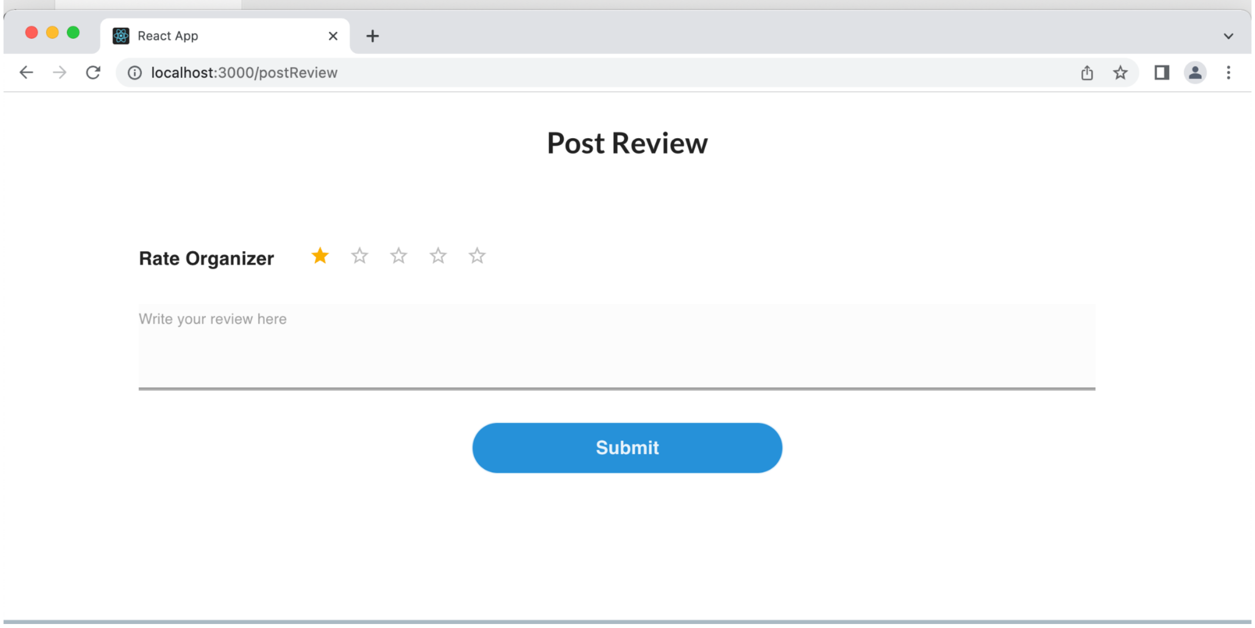


Reviews

Rating: 4
For event: Project Demo
Review Text: pretty good event
Review Time: 5/20/2022, 11:20:00 AM

Rating: 3
For event: Project Demo
Review Text: The event was good
Review Time: 5/26/2022, 1:37:00 PM

- Post Reviews Page: here User can post ratings and reviews on the organizer or a participant.

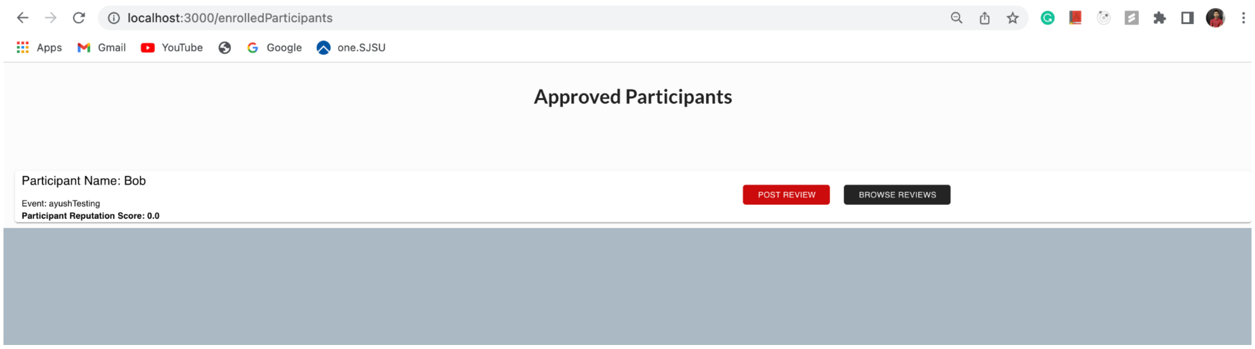


Post Review

Rate Organizer ★ ☆ ☆ ☆ ☆

Write your review here

- Approved/ pending Participants Page- On the Pending Participants page, the organizer can accept or reject user registration requests. On the approved participant's page, the organizer can check all the enrolled participants of that event.

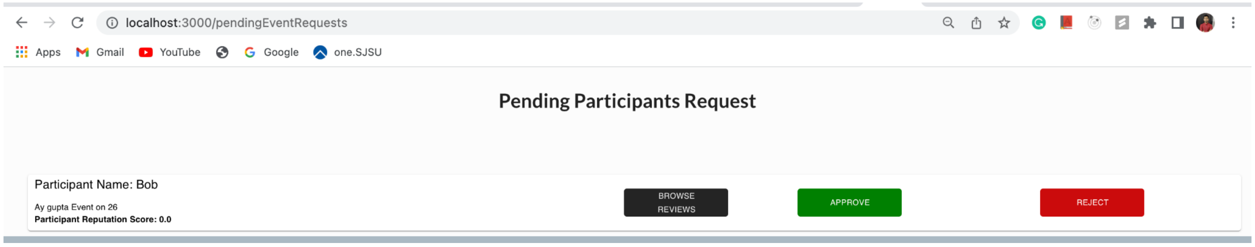


Approved Participants

Participant Name: Bob

Event: ayushTesting

Participant Reputation Score: 0.0



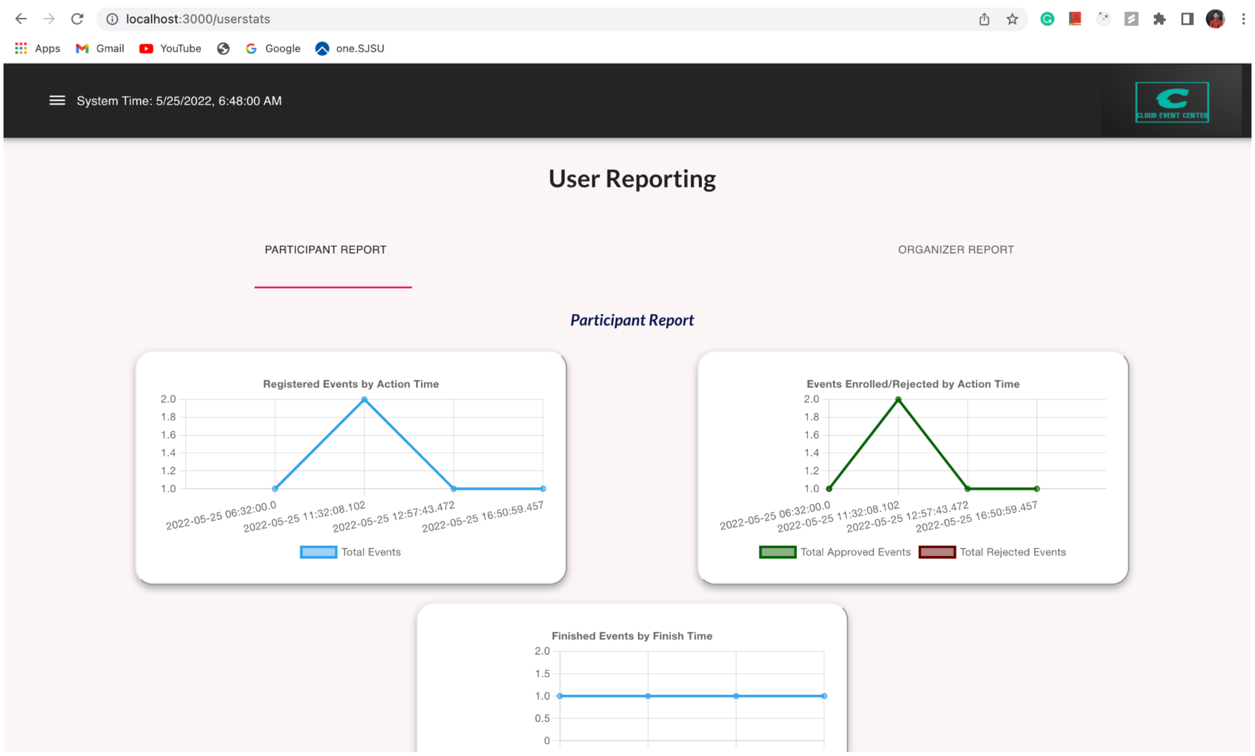
Pending Participants Request

Participant Name: Bob

Ay gupta Event on 26

Participant Reputation Score: 0.0

- User Reports - Here we can see an analytical dashboard to see user reports.



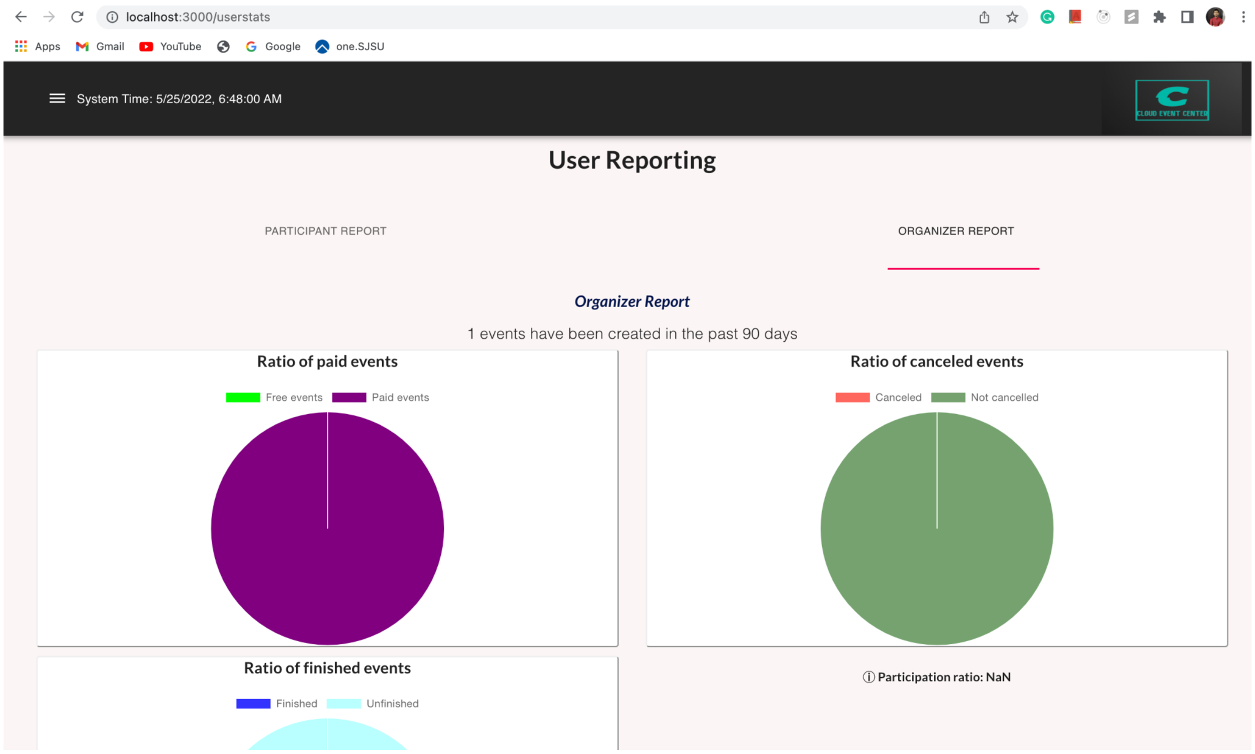
System Time: 5/25/2022, 6:48:00 AM

User Reporting

PARTICIPANT REPORT

ORGANIZER REPORT

Participant Report



System Time: 5/25/2022, 6:48:00 AM

User Reporting

PARTICIPANT REPORT

ORGANIZER REPORT

Organizer Report

1 events have been created in the past 90 days

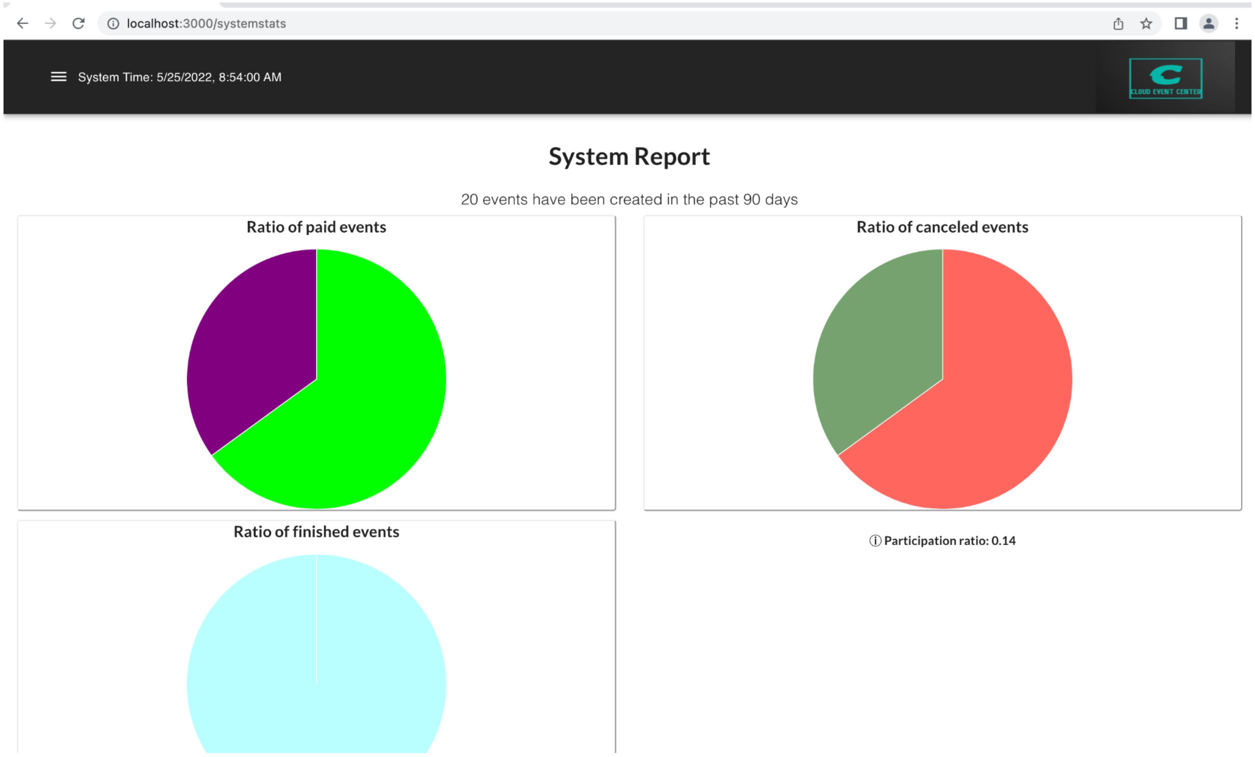
Ratio of paid events

Ratio of canceled events

Ratio of finished events

ⓘ Participation ratio: NaN

- System Reports- Analytical dashboard for a system report


localhost:3000/systemstats
System Time: 5/25/2022, 8:54:00 AM
CLOUD EVENT CENTER

System Report

20 events have been created in the past 90 days

Ratio of paid events

Ratio of canceled events

Ratio of finished events

ⓘ Participation ratio: 0.14

5. Testing plan executed and results

For testing purposes, we have performed various validations on both frontend and backend. Before any API call from the frontend, we checked the payload to check parameters' correctness and saving on Api call in case of invalid request. On any API call, we also have validations on the backend checking the payload and if there is any error we send the error status code and error message on the frontend which thus displays the error message through an alert so that the user can make corrections accordingly. Also, we have various Html form validations which help in avoiding invalid input by users. The result of our test plan is that we are able to avoid any inconsistency in the database and show proper display messages to users in case of invalid API calls. We did the unit testing on components we worked on individually as well as integration testing once integration with other components is done.

6. Lessons learned:

- By completing the project, we were able to implement various technologies being taught to us in the course. We got in-depth knowledge and hands-on experience of Spring Boot, and Spring MVC.
- We got a chance to learn about firebase authentication and how to integrate email services.
- We got knowledge of using JPA and learned how to integrate a full-stack application built on java Springboot as backend and React as frontend.

7. Possible Future work:

- We would like to implement google maps so that it's easier to locate an event center.
- Adding an online payment option would help to make an application more robust.