Rensselaer Events Calendar (REC)

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Introduction

Every day there are hundreds of events that happen around the RPI campus, from clubs and greek life to official RPI events. Currently, the best way to be informed about these events is to read the morning mail, spot elusive flyers around campus or hunt down club information specifically. Our application is going to fix that by providing a centralized location for all of the events to be listed and displayed for users to see. It would include RPI affiliated clubs, Greek Life Organizations, official RPI events and events from any other RPI organization. This information would be displayed in various manners like a news feed of upcoming events, a calendar so that students can search for events on a specific date, a flyers page where clubs and greek life can visually display event information, and a clubs and greek life directory where people can search for a club, fraternity or sorority.

Project Team

Steven Li is a Computer Science and Information Technology & Web Science dual major, with concentrations in Data Science and Artificial Intelligence. He has experience as a full stack developer for various web application projects along with a good understanding of human and technical interaction. For this project, his main focus will be in the front-end and middle-end development as well front-end/back-end integration.

Finnegan Pike is an Information Technology & Web Science and Computer Systems Engineering dual with a minor in Economics. He has worked with HTML5, CSS3, Javascript, jQuery and PHP. For the REC project he is creating the overall design and interface for the website as well as the front-end/back-end integration of the web pages.

Chris Pence is a Computer Science and Information Technology & Web Science dual major. He has most of his experience in PHP and Javascript. For this project, he will be developing the Node.js backend.

John Gay is a dual Computer Science and Information Technology & Web Science major with a concentration in Data Science. John has experience developing the backend of course scheduler for Rensselaer Center for Open Source using Ruby on Rails. He also developed the backend on a new website for the Air Force ROTC Detachment at RPI. John will serve as a backend developer for this project.

Carlos Power is an Information Technology and Web Science major with a minor in Entrepreneurship. He worked in a startup called Knowdex which worked to provide educational material for aspiring lawmakers in Puerto Rico. He designed the front end for them using HTML, Bootstrap, Javascript and Angular. In this project he will also be doing front end development.

Problem Statement

There is currently no centralized platform to view all events held at RPI. In order for students to find information for different organizations at RPI including clubs, the Union, and Greek life, students have to search on many different websites and look at flyers posted around campus. The website would make it easier for RPI students to view all the events that are currently happening around campus and any future events. In addition, the site will contain a page where flyers can be posted and a dashboard will display the upcoming flyers. This will make it easier for students to find events as opposed to scanning through the disorganized flyers all around campus. There have been discussions with other students at RPI, especially those running RPI organizations, which have resulted in positive feedback for the need of this website. The need for a website that provides RPI organization information and scheduling is not an imagined problem.

Code Repository:

https://github.com/ChristopherPence/REC

Functional Requirements

1. Display upcoming events for Union and club/greek life.
    - Union events will be pulled from their RSS feed at http://events.rpi.edu. This way the Rensselaer events will be also on the calendar page.
    - Club/greek life events will be pulled from the back-end database where the leaders of the organizations will create an account on the website, obtain admin approval for authentication and authorization, and be able to add events under their organization to be displayed as well as creating a profile.
2. Each day's events will be displayed in a starting time chronological order.
    - Events will have a title, time, location, social media link, and description.
3. Listing of all of the current organizations that have currently signed up for the website.
    - Their club information will be pulled from the database and their profile will be displayed. This includes the organizations' name, meeting place, social media link, description, picture, and executive board members (president, vice-president, secretary, etc.).
4. Search for specific club/greek life events and general RPI events.
    - Mostly used for later dates and not as much for upcoming dates

5. Filter out certain clubs/greek life organizations or event categories. The filter would also allow you to filter a specific date or a range of dates and times.
6. A flyer webpage, one per club, that will allow organizations to display their information in a more pleasant and visual medium.

Non-functional Requirements

- Front-End
    - *HTML5*:
        i. HTML5 will be used to develop our website, because of the utility the plethora of tags provided, and because HTML5 is becoming the browser markup language standard.
    - *Bootstrap 4*:
        i. Bootstrap 4 will be used to style the webpage and make it responsive, so users can view the website from any device.
    - *CSS3*:
        i. CSS3 will be used to complement the style that Bootstrap 4 provides; it will add any customizations that Bootstrap 4 can not provide.
    - *AngularJS* (version 1.6.9):
        i. AngularJS will give the website a more dynamic feel. Angular will be used to display important information for the user using their expression and module functionality. This will be used to make the website more modular, getting information for the client side from the back-end, and posting the necessary data for the node server implementing express.
    - *JavaScript/jQuery*
        i. JavaScript will be used to create any extra functions, objects, or front-end details that we may need. jQuery library functions will be used for cleaner code.
- Back-End
    - *MongoDB*
        i. MongoDB will serve as the database for the website, using four collections to store the necessary information for the site. These collections include organizations, users, events, and flyers.
    - *Express.js*
        i. Express.js will server as a framework for Node.js in order to receive and send static pages and API calls from the web server. This will create the web server running the REC website. No API post call received on the web server will actually change anything in the API created for the REC website.
    - *Node.js*

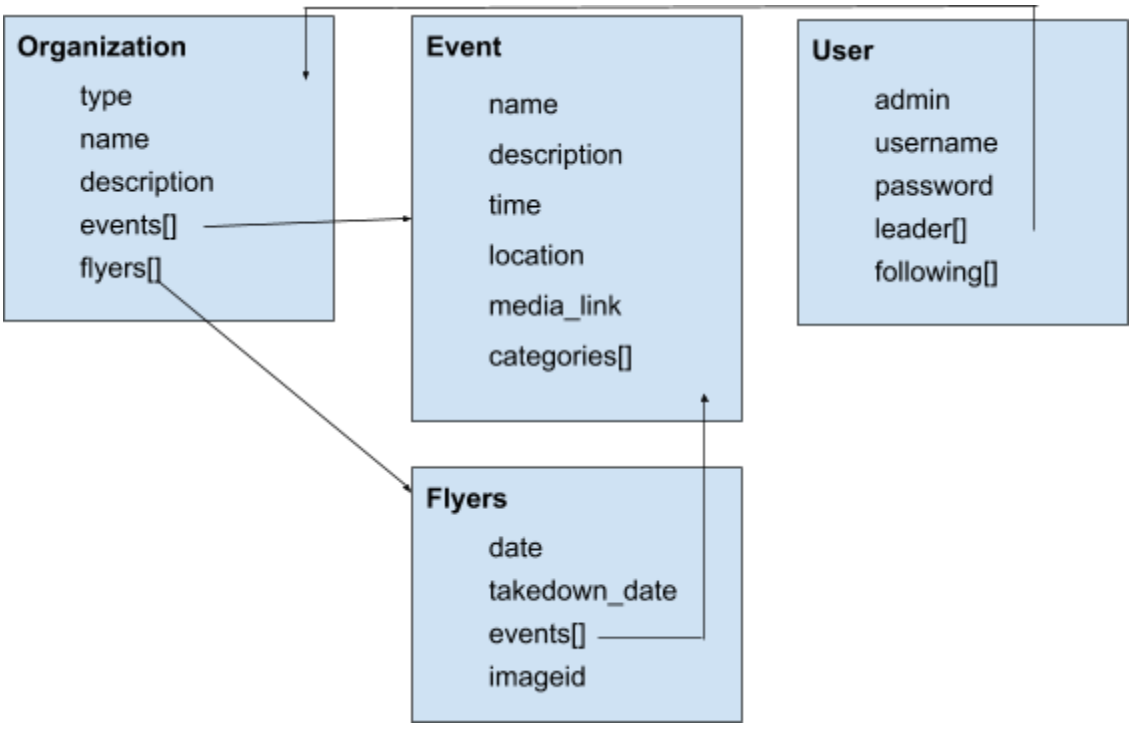
i. Node.js will allow the creation of a server that can connect the user interface to the server. This server can contain the website's files, databases, and structure.

Technological Compatibility

The website will be compatible with both the Chrome and FireFox browsers. Bootstrap 4 will be used for most of the front-end look of the website, and will allow the website's look to dynamically "fit" in whatever device is running the website. The main focus of the look will be for a computer, but Bootstrap 4 will allow the website to maintain it's look on a mobile device. All the other frameworks, and features will be able to work on both a computer, and mobile device, as long as any device runs the Chrome or Firefox browser.

Database Schema

The database, built using MongoDB, will have four main collections. The first collection is the organizations that will be associated with the site. This included both clubs and Greek life, and each organization will have an associated name and description, along with multiple events and flyers. Each event, hosted by an organization, will hold important information, such as the time and location. Additionally, there can be a list of categories for each event that will allow users to search for events and filter them by categories. There will also be a collection of users, who will have login information. Additionally, a user will be able to follow a club, or be a leader in a club which will give them posting permissions on the club's behalf. Finally, the flyers collection will be associated with each organization, and be sorted based on their dates. Flyers have the capability to be associated with multiple events (such as a RUSH flyer with a list of events). These four collections will make up the database, where all of the information for the site will be drawn from.



Conclusion

Rensselaer Event Calendar (REC) is a website that will help find events and clubs to maintain a community at RPI. Community is important for any campus institution, and it allows people to communicate and connect with each other. A fundamental aspect of RPI, or any other institution, that allows for students to network and grow as an individual are the campus clubs and organizations. If it is difficult for students to find out about club and organization events, then they lose out on potential opportunities that may benefit them academically and professionally. REC will allow students to quickly find events. The students will be able to plan their schedules ahead of time by seeing all the events that they wish to participate in. The clubs and organizations will be able advertise and announce their events to the students. REC is the bridge between student life and campus organizations.