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IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Smart College Event Management System Using MERN Stack

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Abstract: Events are the most important component of college life. When the number of events held grows by the day, it becomes difficult to manage details using spreadsheets and traditional databases, and it also becomes difficult to disseminate Event information. To solve the drawbacks of traditional event management systems, a new Smart Event Management System that uses web development to manage various tasks was developed. The project's purpose is to build an Event Management System for our College. Given the flaws and inefficiencies of college event management systems, there is an urgent need to design an automated system that can aid with data management and report generation, which is the primary focus of our project.
Keywords: Event Management System, Event Database, Report Generation, Admin User Login

I. INTRODUCTION

This is a Smart College Event Management System, a web development project. The Events Management System is extremely useful for events. All the events related information will be given at one platform. This application serves as a platform for learning about events and applying for them. For a given Student (Technical/ Non-Technical) Consider the flow of events that occur when a user registers with this application to learn how to utilize it. After registration, users may login to view event data such as name, contact information, address, event venue, date, event time, event cost, and so on. This system is designed to meet the needs of users so that their events run smoothly and efficiently. This program minimizes data entry mistakes as much as possible. The system is user-friendly since it does not demand any specific expertise from the user. The front end will be a React Based java script application whereas the server will run on Node.js using Express.js. The database side of things will be based on MongoDB whereas Mongoose will help Node.js communicate with the database.

II. PROPOSED SYSTEM/PROBLEM STATEMENT

Colleges sponsor a range of events and projects throughout the year. The existing system which we are using in our college is a traditional process and is a complete manual process. It is challenging to disseminate and handle information effectively. Our event management system will particularly help in overcoming this difficulty by centralizing all information on an interactive website. Our system has remote access options, allowing you to manage your staff at any time. These systems will eventually help you to better manage your resources.

III. SYSTEM IMPLEMENTATION

A. Software Requirements

We need the following software to accomplish our project.
1) Writing Code (Sublime Text)
2) MERN Stack
a) *MongoDB:* A cross-platform document database.
b) *Express:* A back-end web application framework.
c) *React:* A JavaScript library for building user interfaces.
d) *Node.js:* A cross-platform JavaScript runtime environment
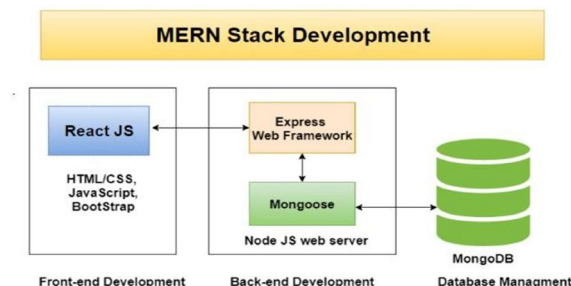
3) Web Browser for accessing the website.

IV. SYSTEM IMPLEMENTATION

1) *Admin Login:* The administrator has the ability to create, remove, and modify events. Admin can check on the volunteers who are helping out during an event. New volunteers can be assigned by the administrator. Admin has a list of all users/students who will be attending any event.
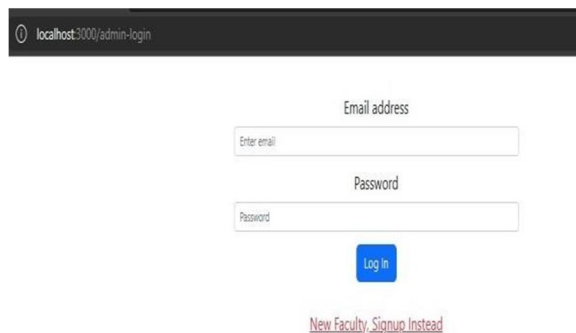

Figure 1. ADMIN LOGIN

2) *User Login:* Users can access event information by logging in using the login portal on this event management system website. People might check in through the portal and be assigned an event to work on as a volunteer.

3) *Registration:* Users can register themselves in the registration portal and then login using the login portal. Every user must register before logging in and create a password in order to use the event management system whenever and whenever they want. Registering saves the login credentials in the database and verifies them each time a user logs in using the login portal.
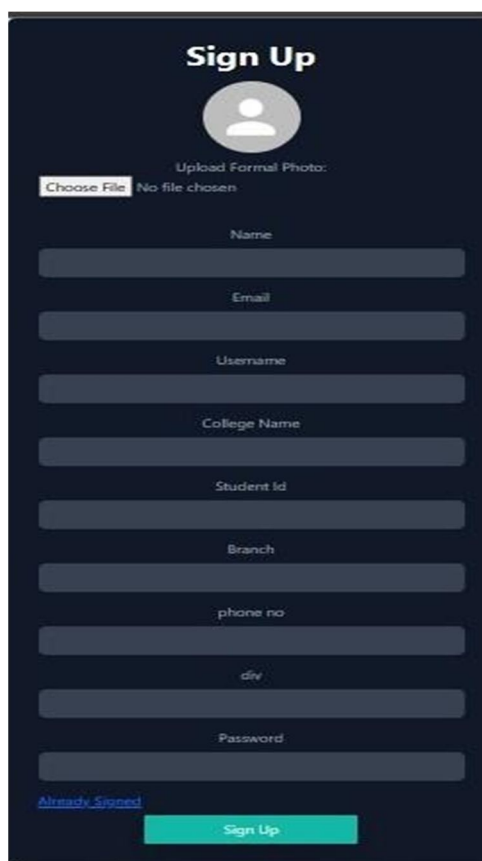

Figure 2. Sign Up

4) *Administrator:* The portal's administrator has total access to the data and may create and delete any event. He or she will have the ability to limit the amount of entries thatcan be accepted. Before launching the event, it is necessary to understand the brand, define the target audience, develop the event idea, and coordinate thetechnological components.
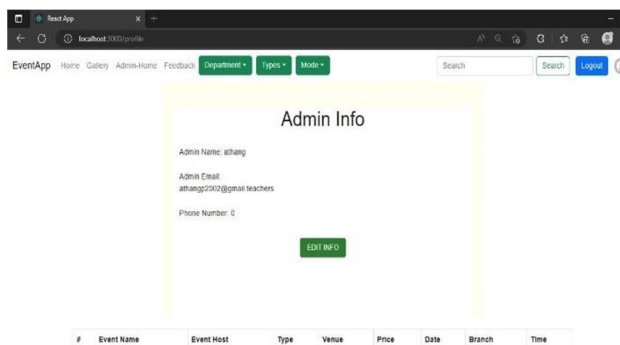

Figure 3. Admin info

5) *Users:* Users may check the availability ofan event, book an event, check the venue and timings of an event, fee, and numerous other information such as volunteer needs or any other event update in the user module.
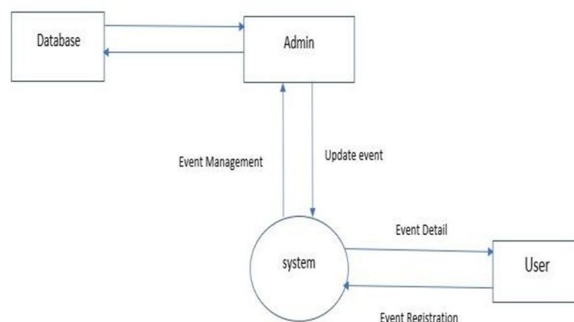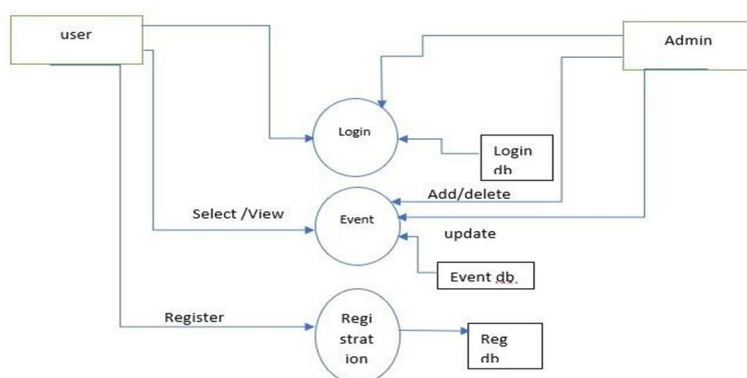

Figure 4. DFD Level 0

Figure 5. DFD Level 1

V.   TECHNOLOGIES USED

1) *HTML:* HTML, or Hyper Text Markup Language,is the standard markup language for texts intendedto be displayed in a web browser. Technologies likeCascading Style Sheets (CSS) and programming languages like JavaScript can help.

2) *CSS:* CSS is a style sheet language used to describethe presentation of a document written in a markuplanguage such as HTML. CSS is intended to separate display from content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, allow multiple web pages to share formatting by specifying the relevant CSS in a separate.css file, reducing complexity and repetition in structural content, and allowingthe.css file to be cached to improve page load speedbetween the pages that share the file and its formatting.

3) *Java Script:* JavaScript is a fundamental technology of the World Wide Web. Around 97% of websites utilize it client-side for web page behavior, with third-party libraries frequently incorporated. To run the code on the user's device, all major web browsers include a specialized JavaScript engine. JavaScript, being a multi- paradigm language, allows event-driven, functional, and imperative programming paradigms. It supports text, dates, regular expressions, standard data structures, and the Document Object Model via application programming interfaces (APIs) (DOM). The MERN stack: The MERN design makes it simple to build a three-tier architecture (frontend, backend, and database) purely out of JavaScript and JSON.
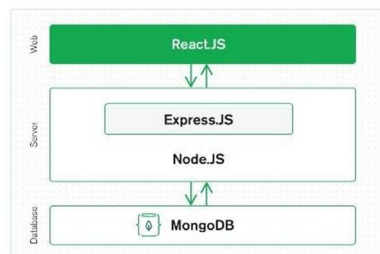

Figure 6. Mern Stack

4) *React.js Front End:* React.js, a declarative JavaScript framework for developing dynamic client-side HTML applications, sits at the top of the MERN stack. React allows you to create sophisticated interfaces using basic Components, connect them to data on your backend server, and render them as HTML.

5) *Express.js and Node.js Server Tier:* The Express.js server-side framework, which runs within a Node.js server, is the next level below. Express.js touts itself as a "fast, unopinionated, simple Node.js web framework," and that is precisely what it is. Express.js has robust models for URL routing (which matches an incoming URL with a server function) and managing HTTP requests and answers.

6) *MongoDB Database Tier:* If your application maintains data (user profiles, content, comments, uploads, events, etc.), you'll need a database that's as simple to use as React, Express, and Node. That's where MongoDB comes in: JSON documents written in your React.js front end may be transmitted to the Express.js server, where they can be processed and (if they're valid) saved straight in MongoDB for subsequent retrieval. Again, if you're creating on the cloud, Atlas is a good option. Continue reading if you want to build your own MERN stack.

IV. RESULT

The event management software was created with careful preparation and direction. This project is developed using an iterative waterfall methodology. Each part of planning is completed correctly. The design phase will be completed in accordance with procedure. Each module and sub-module will be subjected to unit testing. Following that, the modules and sub-modules will be combined, and integrated testing will be carried out. The project's goal is to provide full and simple event management for all types of events.

V. CONCLUSION

We designed a new system after discovering shortcomings in the prior manual system that gives an easy way to handle the college's Event functionalities. It is a platform that links several departments of an institution, such as administration, staff, and students. This project will aid the proper events in managing and automating the platform's whole database.

An intuitive graphical user interface (GUI) is offered, allowing users and administrators to access all Event related information. The project will surely reduce human effort and make user and admin responsibilities easier. It is dependable, saves time, and is simple to use. We are developing an event management system with features such as an attendance sheet, while keeping the advantages and applications in mind.

VI. FUTURE SCOPE

Users indicate that further study might help to enhance the existing project. Additional functions may be added to the system in the future as part of future research to expand and extend the system's capabilities. Future research may possibly develop a mobile application for iOS or Android, making the system more accessible and accommodating and supporting more people who utilize different mobile platforms.

Manage the many organizer profiles you've made for various sorts of events. You may also share each of them with your connections across several platforms. Search by ID or scan the QR code provided to guests when they register.

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