

ALUMNI PORTAL

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Engineering degree in Computer Science and Engineering

by

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SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited with Grade "A" by NAAC

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **Mugunthan Raju G** (Reg.No: **38110333**) and **Yeruva Joseph Sravan Kumar Reddy** (Reg.No: **38110670**) who carried out the project entitled "**ALUMNI PORTAL**" under my supervision from **November 2021** to **April 2022**.

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We **Mugunthan Raju G** (Reg.No: **38110333**) and **Yeruva Joseph Sravan Kumar Reddy** (Reg.No: **38110670**) hereby declare that the Project Report entitled **ALUMNI PORTAL** done by us under the guidance of **Dr. J. ALBERT MAYAN, M.E., Ph.D** (Internal) is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering / Technology Degree **Computer Science and Engineering**.

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ABSTRACT

Alumni portal is providing common platform for every institute. This project is aimed at developing an interactive system for the alumni of particular college. The proposed system will help alumni and the concerned institution to create strong bonding through sharing their experiences, views, ideas, guidance, motivation inputs and strategies. A system that will be able to manage alumni data of an institution and provide easy access to secure information at both ends. This portal highlights the feature of communication, which will enable the current students to have interaction with the alumni of the college for getting various updates regarding job opportunities like industrial trends and industrial events etc. The proposed system will be developed with an open source platform on web. This will help the user to access the portal from any location. Few of the required web design packages will be developed for better understanding. Various reporting formats can be generated based on filtering strategies. The admin panel will have all the rights to control the complete operation of system and implement add-ons if required in future. The system will automatically list all alumni information their graduation and their status will be transferred from the student module to the alumni module.

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LIST OF ABBREVIATION

SHORT FORM	FULL FORM
API	Application Programming Interface
CSS	Cascading Style Sheets
DB	DataBase
HTML	HyperText Markup Language
HTTPS	Hypertext Transfer Protocol Secure
JS	JavaScript
JSON	JavaScript Object Notation
JWT	JSON Web Token
PaaS	Platform as a Service
REST	Representational State Transfer
SSH	Secure Sockets Layer
SSR	Server Side Rendering
UI	User Interface
WWW	World Wide Web

CHAPTER 1

INTRODUCTION

1.1 AIM OF THIS PROJECT :

Alumni associations play an essential role in higher education institutions, as they provide networking opportunities and contact between the university and the alumni or among the alumni. However, the lack of communication between the alumni, faculty and the department as a whole leading to the lack of updated data of alumni hinders the effective development of an alumni association. The lack of data update can be tied to disinterest or ignorance of the alumni about the potential of an alumni association to promote a professional network, academic and even personal relationships. Similarly, the need for an effective system to maintain these records and to update them frequently becomes increasingly pressing as the number of students enrolled in the campus continues to increase. One of the ways to consolidate the relationship between alumni and educational institutions is to create a virtual and interactive portal to provide useful information to the alumni to help extend the contact between the alumni and the university to beyond the period of course completion, regardless of geographic location or time.

1.1.1 OBJECTIVE :

In this project we developed an Alumni Information and Management with various technologies which helps to keep a track of Alumni current status and pave the way for interaction.

1.2 SCOPE :

To bring together all the old students and the faculty members to share their experiences with each other which utilize the rich experiences of old students of the college for the benefit and progress of the present students. It also helps to provide guidance to the present students in their endeavor for better employment and higher studies. To get the valuable advice of the Alumni in the overall development of the college.

1.3 Web Application

1.3.1 Preface :

A website application, which is also popularly known as a web app, is a software application program that uses web-based technology to perform specific tasks. Remote web servers host web applications and store relevant information from numerous connected computers. You can use a client program to run the web applications and access or enter the required data. That is why people often refer to web apps as client-server programs. Web applications have undergone many developments, and the current ones are far more sophisticated in their features and use than the earlier simplistic ones. They are also far more indispensable for personal and business use.

1.3.2 Frontend :

Front-end web development, also known as client-side development, is the practice of producing HTML, CSS and JavaScript for a website or Web Application so that a user can see and interact with them directly. The challenge associated with front end development is that the tools and techniques used to create the front end of a website change constantly and so the developer needs to constantly be aware of how the field is developing.

The objective of designing a site is to ensure that when the users open up the site they see the information in a format that is easy to read and relevant. This is further complicated by the fact that users now use a large variety of devices with varying screen sizes and resolutions thus forcing the designer to take into consideration these aspects when designing the site. They need to ensure that their site comes up correctly in different browsers (cross-browser), different operating systems (cross-platform) and different devices (cross-device), which requires careful planning on the side of the developer.

1.3.3 Backend :

Web development activities that are done at the back end of programs are referred to as back end development. Back-end development covers server-side web application logic and integration and activities, like writing APIs, creating libraries, and working with system components instead of frontend development, which focuses on customer-facing services and programs. Backend developers build code that allows a database and an application to communicate with one another. Backend developers take care and maintain the back-end of a website, Including databases, servers, and apps, and they control what you don't see.

Backend is the server-side of the website. It stores and arranges data, and also makes sure everything on the client-side of the website works fine. It is the part of the website that you cannot see and interact with. It is the portion of software that does not come in direct contact with the users. The parts and characteristics developed by backend designers are indirectly accessed by users through a front-end application. Activities, like writing APIs, creating libraries, and working with system components without user interfaces or even systems of scientific programming, are also included in the backend.

1.3.4 Database :

The Database is an essential part of our life. As we encounter several activities that involve our interaction with databases, for example in the bank, in the railway station, in school, in a grocery store, etc. These are the instances where we need to store a large amount of data in one place and fetch these data easily.

A database is a collection of data that is organized, which is also called structured data. It can be accessed or stored in a computer system. It can be managed through a Database Management System (DBMS), a software used to manage data. Database refers to related data in a structured form.

In a database, data is organized into tables consisting of rows and columns and it is indexed so data can be updated, expanded, and deleted easily. Computer databases typically contain file records data like transactions money in one bank account to another bank account, sales and customer details, fee details of students, and product details. There are different kinds of databases, ranging from the most prevalent approach, the relational database, to a distributed database, cloud database, and NoSQL databases.

1.3.5 Container:

A container is a standard unit of software that packages up code and all its dependencies so the application runs quickly and reliably from one computing environment to another. A Podman container image is a lightweight, standalone,

executable package of software that includes everything needed to run an application: code, runtime, system tools, system libraries and settings.

Container images become containers at runtime and in the case of Podman containers – images become containers when they run on Podman Engine. Available for both Linux and Windows-based applications, containerized software will always run the same, regardless of the infrastructure. Containers isolate software from its environment and ensure that it works uniformly despite differences for instance between development and staging.

CHAPTER - 2

LITERATURE SURVEY

2.1 Ruchika Kolhe :

The proposed system is, the alumni tracking application is a web-based system that is accessible to all alumni. It can also be used as a website/medium for graduates and their respective college alumni coordinators to stay in touch with each other. Important data from the alumni are solicited through this platform. These data, particularly on their employment, can be used as bases in making strategic decisions, i.e. curriculum revision, research agenda preparation, potential extension activities among others. The website can be accessed using a mobile device through which college graduates can update their current employment status and other information. All the collected data shall be stored in a server. There is no automata for inclusion of upcoming Alumni data.

2.2 Yusen Lan :

The current application processes and system frameworks are difficult to solve these problems. It is necessary to transform the management model through information gathering technology, data mining technology and social networking platforms. In this section, we build an integrated intelligence alumni information management system to optimize the process of alumni management, assist school leaders in making decisions, and promote the full use of alumni resources. This system consists of three major platforms: Alumni Social Network Platform, Intelligent Data Acquisition and Storage Platform and Data Mining and Auxiliary Decision-Making Platform. It doesn't support the current students to

level up their standards. It fulfills the social demand of modern college. It doesn't support the current students to level up their standards.

2.3 Gloria M. Alcantara :

In this work, we are trying to develop alumni web application to established interaction between alumni and institutes. This web application is developing in Word press with the help of some inbuilt plugins and some own developed plugins. The web application serve as a useful site to any institution and Alumni to know what is going on in our college and can also know about the institute. This portal provides access to only authorized users. The web application helps to generate report regarding accreditation from Higher Education Committee under government of nation . This system updates the current role of the Alumni everytime. Here, they failed to develop the interactive Alumni Portal.

2.4 Basanta Joshi :

The main research question that the paper attempts to address is - how to collect and maintain records of alumni with minimal requirement of centralized data collection and manual entry. Enticing and motivating alumni, who have graduated and busy in their own ways, to enter their latest profile is also challenging. As a partial solution to the above problem, the main research contribution of this work is the development and implementation of an online system. Alumni Data are genuinely true and have been cleaned by several processes. Manual cleaning of data makes it a tedious system.

2.5 S.C.Vidhate:

The system of alumni tracking application is a web-based system that is accessible to all alumni. It can also serve as a website/medium for graduates and

their respective college alumni coordinators to stay in touch. This platform collects critical information from alumni. These data, particularly on their employment, can be used to inform strategic decisions, such as curriculum revision, research agenda preparation, and potential extension activities, among other things. A mobile device can be used to access the website, where college graduates can update their current employment status and other information. All collected data must be saved on a server. There are no automata for incorporating upcoming Alumni data.

2.6 Debao Dai:

These challenges are difficult to solve using current application processes and system frameworks. The management model must be transformed using information gathering technology, data mining technology, and social networking platforms. In this section, we will create an integrated intelligence alumni information management system to optimize the alumni management process, assist school leaders in making decisions, and promote the full utilization of alumni resources. This system is divided into three major platforms: the Alumni Social Network Platform, the Intelligent Data Acquisition and Storage Platform, and the Data Mining and Auxiliary Decision-Making Platform. It does not encourage current students to raise their standards. It satisfies the social requirement of a modern college. It does not encourage current students to raise their standards.

2.7 Ruth G. Luciano:

In this project, we are attempting to create an alumni web application to facilitate interaction between alumni and institutes. This web application is being built in Wordpress using some built-in plugins as well as some custom plugins. The web application serves as a useful site for any institution and Alumni to learn

about what is going on in our college and to learn about the institute. Only authorized users have access to this portal. The web application aids in the generation of accreditation reports from the Higher Education Committee of the government of the nation. Every time the system is updated, the current role of the Alumni is updated. They failed to create an interactive Alumni Portal in this case.

2.8 Lumanti Dangol:

The leading research topic that the paper seeks to answer is how to acquire and manage alumni records with minimum centralized data collecting and manual entry. It is also difficult to entice and motivate alumni who have graduated and are busy in their own ways to enter their most recent profile. The main scientific contribution of this work is the invention and implementation of an online system as a partial solution to the above challenge. Alumni data are real and have been sanitized through a number of methods. Manual data cleaning makes it a time-consuming system.

CHAPTER 3

METHODOLOGIES

3.1 REQUIREMENTS :

3.1.1 HARDWARE REQUIREMENTS :

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatible, and sometimes incompatible hardware devices for a particular operating system or application.

- 01. CPU's Processor : Min Pentium IV
- 02. RAM : Min 4 GB (Main Memory)
- 03. Processor's Clock Speed : 2.4 GHz
- 04. Storage Memory : Min 30 GB
- 05. Mouse : At least Trackball Mouse
- 06. Keyboard : QWERTY Keys
- 07. Monitor Display : IPS display
- 08. Network Speed : Min 2 Gbps

3.1.2 SOFTWARE REQUIREMENTS

Software requirements deal with defining software resource requirements and prerequisites that need to be installed on a computer to provide optimal

functioning of an application. These requirements or prerequisites are generally not included in the software installation package and need to be installed separately before the software is installed.

01. Operating System : Windows / Mac OS / Linux distros

02. IDE : Visual Studio Code

03. Browser : Chrome / Firefox / Safari / Opera

04. API Validator : Thunder Client

3.2 TECHNOLOGIES :

3.2.1 FRONTEND :

3.2.1.1 HTML :

HTML (HyperText Markup Language) is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation or functionality/behavior. "Hypertext" refers to links that connect web pages to one another, either within a single website or between websites. Links are a fundamental aspect of the Web. By uploading content to the Internet and linking it to pages created by other people, you become an active participant in the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are

delineated by tags, written using angle brackets. Tags such as `<img />` and `<input />` directly introduce content into the page. Other tags such as `<p>` surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags but use them to interpret the content of the page.

3.2.1.2 CSS :

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the structural content; and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting. Separation of formatting and content also makes it possible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device. The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable.

3.2.1.3 Javascript :

JavaScript (JS) is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. While it is most well-known as the scripting language for Web pages, many non-browser environments also use it, such as Node.js, Apache CouchDB and Adobe Acrobat. JavaScript is a prototype-based, multi-paradigm, single-threaded, dynamic language, supporting object-oriented, imperative, and declarative (e.g. functional programming) styles. Read more about

JavaScript. This section is dedicated to the JavaScript language itself, and not the parts that are specific to Web pages or other host environments. For information about API specifics to Web pages, please see Web APIs and DOM. The standards for JavaScript are the ECMAScript Language Specification (ECMA-262) and the ECMAScript Internationalization API specification (ECMA-402). The JavaScript documentation throughout MDN is based on the latest draft versions of ECMA-262 and ECMA-402. And in cases where some proposals for new ECMAScript features have already been implemented in browsers, documentation and examples in MDN articles may use some of those new features.

3.2.1.4 React JS :

ReactJS is a declarative, efficient, and flexible JavaScript library for building reusable UI components. It is an open-source, component-based front end library responsible only for the view layer of the application. It was created by Jordan Walke, who was a software engineer at Facebook. It was initially developed and maintained by Facebook and was later used in its products like WhatsApp & Instagram. Facebook developed ReactJS in 2011 in its news feed section, but it was released to the public in the month of May 2013. Today, most of the websites are built using MVC (model view controller) architecture. In MVC architecture, React is the 'V' which stands for view, whereas the architecture is provided by Redux or Flux.

A ReactJS application is made up of multiple components, each component responsible for outputting a small, reusable piece of HTML code. The components are the heart of all React applications. These Components can be nested with other components to allow complex applications to be built of simple building blocks. ReactJS uses a virtual DOM based mechanism to fill data in HTML DOM. The virtual DOM works fast as it only changes individual DOM elements instead of reloading complete DOM every time. To create React apps, we write React components that correspond to various elements. We organize these components inside higher level components which define the application structure. For example, we take a form that

consists of many elements like input fields, labels, or buttons. We can write each element of the form as React components, and then we combine it into a higher-level component, i.e., the form component itself. The form components would specify the structure of the form along with elements inside of it.

3.2.1.5 Material UI :

Material UI is an open-source, front-end framework for React components that has 60,500 plus stars on github. It is built using Less. Less (stands for Leaner Style Sheets), is a backward-compatible language extension for CSS. Material UI is based on Google's Material Design to provide a high-quality, digital experience while developing front-end graphics. Material Design focuses on providing bold and crisp designs – it builds textures by focusing on how the components cast shadows and reflect light. Some frontend frameworks are not very well documented, this makes it hard to develop with them. However, Material UI has detailed documentation that makes it easy to navigate through the framework. Material UI stays recent with regular updates. At the time this article was written, the most recent update was v4.11.0 (dated July 1, 2020). The components throughout are consistent in design and color tones, which allows the developed application/webpage to look aesthetically appealing.

3.2.1.6 Webpack :

Webpack is a static module bundler for JavaScript applications that takes all the code from your application and makes it usable in a web browser. Modules are reusable chunks of code built from your app's JavaScript, node_modules, images, and the CSS styles which are packaged to be easily used in your website. Webpack separates the code based on how it is used in your app, and with this modular breakdown of responsibilities, it becomes much easier to manage, debug, verify, and test your code. When Webpack processes your application, it

builds a dependency graph which maps out the modules that your project needs and generates one or more bundles. A bundle is a distinct grouping of connected code that has been compiled and transformed for the browser. If one file depends on another (it uses the code from a separate file). Webpack also takes your non-code assets (img, fonts, styles, etc.) and converts them to dependencies for your application.

3.2.2 BACKEND :

3.2.2.1 Node JS :

Node.js is an open-source and cross-platform JavaScript runtime environment. It is a popular tool for almost any kind of project! Node.js runs the V8 JavaScript engine, the core of Google Chrome, outside of the browser. This allows Node.js to be very performant. A Node.js app runs in a single process, without creating a new thread for every request. Node.js provides a set of asynchronous I/O primitives in its standard library that prevent JavaScript code from blocking and generally, libraries in Node.js are written using non-blocking paradigms, making blocking behavior the exception rather than the norm. When Node.js performs an I/O operation, like reading from the network, accessing a database or the filesystem, instead of blocking the thread and wasting CPU cycles waiting, Node.js will resume the operations when the response comes back. This allows Node.js to handle thousands of concurrent connections with a single server without introducing the burden of managing thread concurrency, which could be a significant source of bugs.

Node.js has a unique advantage because millions of frontend developers that write JavaScript for the browser are now able to write the server-side code in addition to the client-side code without the need to learn a completely different language. In Node.js the new ECMAScript standards can be used without problems, as you don't have to wait for all your users to update their browsers - you are in charge of

deciding which ECMAScript version to use by changing the Node.js version, and you can also enable specific experimental features by running Node.js with flags.

3.2.2.2 NPM :

Node-Package-Manager is two things: first, it is an online repository for the publishing of open-source Node.js projects; second, it is a command-line utility for interacting with said repository that aids in package installation, version management, and dependency management. A plethora of Node.js libraries and applications are published on npm, and many more are added every day. These applications can be searched for on <https://www.npmjs.com/>. Once you have a package you want to install, it can be installed with a single command-line command. If you are developing the Next Great Application. You come across a problem, and you decide that it's time to use that cool library you keep hearing about - let's use Caolan McMahon's `async` as an example. Thankfully, npm is very simple to use: you only have to run `npm install async`, and the specified module will be installed in the current directory under `./node_modules/`. Once installed to your `node_modules` folder, you'll be able to use `require()` on them just like they were built-ins.

Another important use for npm is dependency management. When you have a node project with a `package.json` file, you can run `npm install` from the project root and npm will install all the dependencies listed in the `package.json`. This makes installing a Node.js project from a git repo much easier!

3.2.2.3 Express JS :

Express.js is a free and open-source web application framework for Node.js. It is used for designing and building web applications quickly and easily. Web applications are web apps that you can run on a web browser. Since Express.js only requires javascript, it becomes easier for programmers and developers to build

web applications and API without any effort. Express.js is a framework of Node.js which means that most of the code is already written for programmers to work with. You can build a single page, multi-page, or hybrid web applications using Express.js. Express.js is lightweight and helps to organize web applications on the server-side into a more organized MVC architecture.

It is important to learn javascript and HTML to be able to use Express.js. Express.js makes it easier to manage web applications. It is a part of a javascript based technology called MEAN software stack which stands for MongoDB, ExpressJS, AngularJS, and Node.js. Express.js is the backend part of MEAN and manages routing, sessions, HTTP requests, error handling, etc. The JavaScript library of Express.js helps the programmers to build efficient and fast web apps. Express.js enhances the functionality of the node.js. It has made programming in node.js effortless and has given many additional features.

3.2.3 DATABASE :

3.2.3.1 MongoDB :

MongoDB is an open source NoSQL database management program. NoSQL is used as an alternative to traditional relational databases. NoSQL databases are quite useful for working with large sets of distributed data. MongoDB is a tool that can manage document-oriented information, store or retrieve information. MongoDB supports various forms of data. Instead of using tables and rows as in relational databases, the MongoDB architecture is made up of collections and documents.

3.2.3.1 Firebase :

Firebase is a development platform known originally for its realtime database that's still at its core a multi-node, key-value database optimized for

synchronizing data, often between user machines or smartphones and centralized storage in the cloud. It's designed to make life easier for developers by handling much of the pushing and pulling of data. That relieves app developers of the programming burdens associated with managing versions or locations. They can write the new bits to Firebase and the data will be consistent throughout the system. Firebase is valued largely because it can constantly propagate and synchronize changes between local copies of information stored on users' machines with versions kept in the cloud.

3.2.4 SECURITY :

3.2.4.1 JWT Authentication:

A JSON web token is JSON (JavaScript object notation) with some extra structure. JWTs include a header and payload that use the JSON format. Optionally, the tokens can be encrypted or signed with a message authentication code (MAC). Signed tokens are commonly referred to as JSON web signatures (JWS) and encrypted tokens as JSON web encryption (JWE). The JWT is formed by concatenating the header JSON and the payload JSON with a "." and optionally appending the signature. The whole string is then base64 URL encoded.

3.2.5 TEST FRAMEWORKS :

3.2.5.1 Postman :

Postman is an application for testing APIs, by sending request to the web server and getting the response back. API testing is used to determine whether the output is well-structured and useful to another application or not, checks the response on the basis of input (request) parameter, and checks how much time the API is taking to retrieve and authorize the data too. It allows users to set up all the

headers and cookies the API expects, and checks the response. Productivity can be increased using some of the Postman features, which are listed below. A test in Postman is fundamentally a JavaScript code, which runs after a request is sent and a response has been received from the server.

3.2.5.2 JEST :

Jest is an open-source testing framework built on JavaScript, designed majorly to work with React and React Native based web applications. Often, unit tests are not very useful when run on the frontend of any software. This is mostly because unit tests for the front-end require extensive, time-consuming configuration. This complexity can be reduced to a great extent with the Jest framework.

Moreover, Jest can be used to validate almost everything around JavaScript, especially the browser rendering of web-applications. Jest is also widely preferred for automated browser testing, making it one of the most popular Javascript testing frameworks in existence. Additionally, Jest provides a blended package of an assertion library along with a test runner and a built-in mocking library. It stands out by virtue of its simplicity, which makes it an ideal tool to test JavaScript Library Projects such as AngularJS, Vue JS, Node JS, Babel and TypeScript.

3.2.6 CLOUD PLATFORM:

3.2.6.1 Heroku :

Heroku is known for running apps in dynos – which are really just virtual computers that can be powered up or down based on how big your application is. Think of dynos as malleable building blocks for running your app. If you want to process more data or run more complex tasks, you are going to need to add more blocks (what is called scaling horizontally) or increase the size of the blocks (what is called scaling vertically). Heroku then charges you a monthly fee

based on the number of dynos that you have and the size of each dyno. Although Heroku charges you by the dyno, they aren't actually hosting your app. In fact, the entire Heroku platform, as well as every app built on Heroku is deployed to Amazon Web Services(AWS).

3.2.7 CONTAINERIZATION:

3.2.7.1 Docker:

Docker is an open source containerization platform. It enables developers to package applications into containers—standardized executable components combining application source code with the operating system (OS) libraries and dependencies required to run that code in any environment. Containers simplify delivery of distributed applications, and have become increasingly popular as organizations shift to cloud-native development and hybrid multi cloud environments.

Developers can create containers without Docker, but the platform makes it easier, simpler, and safer to build, deploy and manage containers. Docker is essentially a toolkit that enables developers to build, deploy, run, update, and stop containers using simple commands and work-saving automation through a single API. Docker also refers to Docker, Inc. (link resides outside IBM), the company that sells the commercial version of Docker, and to the Docker open source project (link resides outside IBM), to which Docker, Inc. and many other organizations and individuals contribute.

3.3 Work Methodology :

Alumni portal connects with both staff,juniors,seniors and with management . Alumni portal runs on a backend server using nodejs and expressjs. It has 3 types of users with specified permissions i.e Admin,Alumni,Student. Each user has separate

permissions to modify or add any type of data. There are several endpoints to make every action.

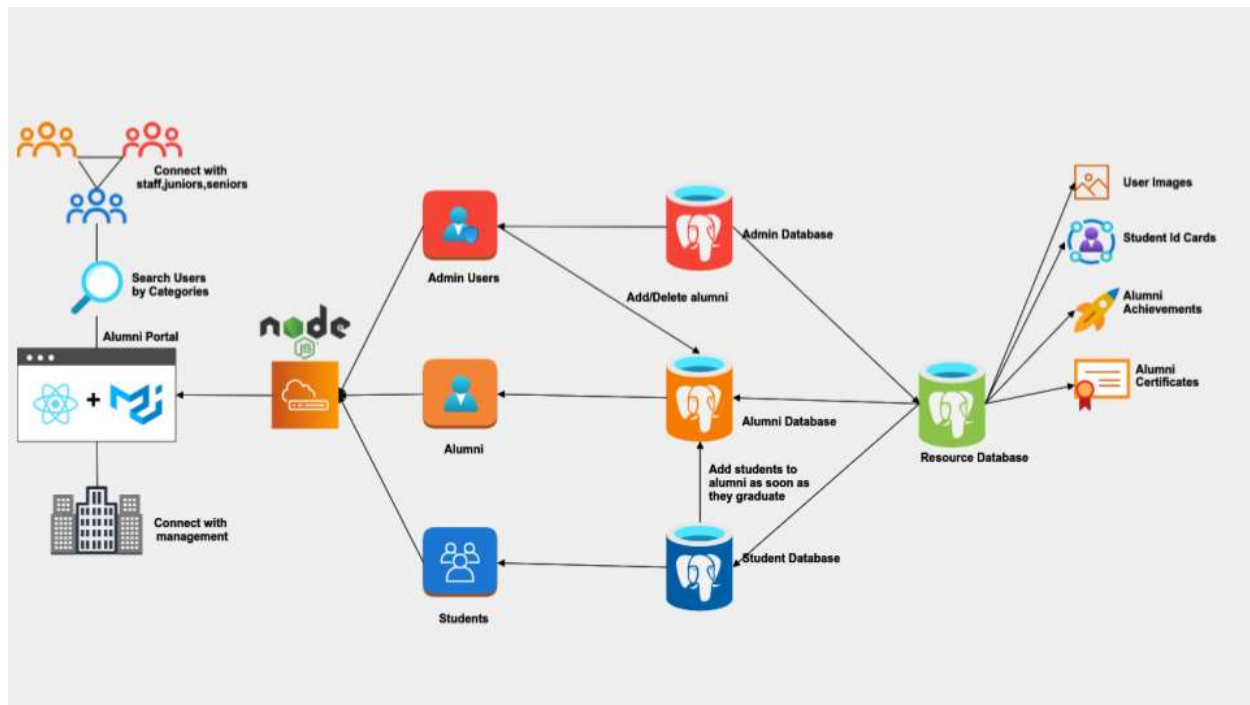


Fig 3.1 System Architecture

In the front end There are Login/Logout, Signup pages. Form data will be validated by the front-end before being sent to the back-end. This reduces the useless requests to the backend. Depending on User's roles (admin, moderator, user), Navigation Bar changes its items automatically. When the request is passed to backend, backend contacts server and the node.js server validates the username and password. As this is one time authentication, a jwt token is generated and passed back to front which is used for further authentication purposes. This technique reduces the load on database and server as jwt carries auth details for the user every time.

JWT token is being stored in local storage of the browser and used on every api call. If the credentials are rejected by the server, front-end handles the issue by showing

an error pop-up the user by appropriate error message that is passed the back-end. Once the user is logged in, each subsequent request will include the JWT, allowing the user to access routes, services, and resources that are permitted with that token. Single Sign On is a feature that widely uses JWT nowadays, because of its small overhead and its ability to be easily used across different domains.

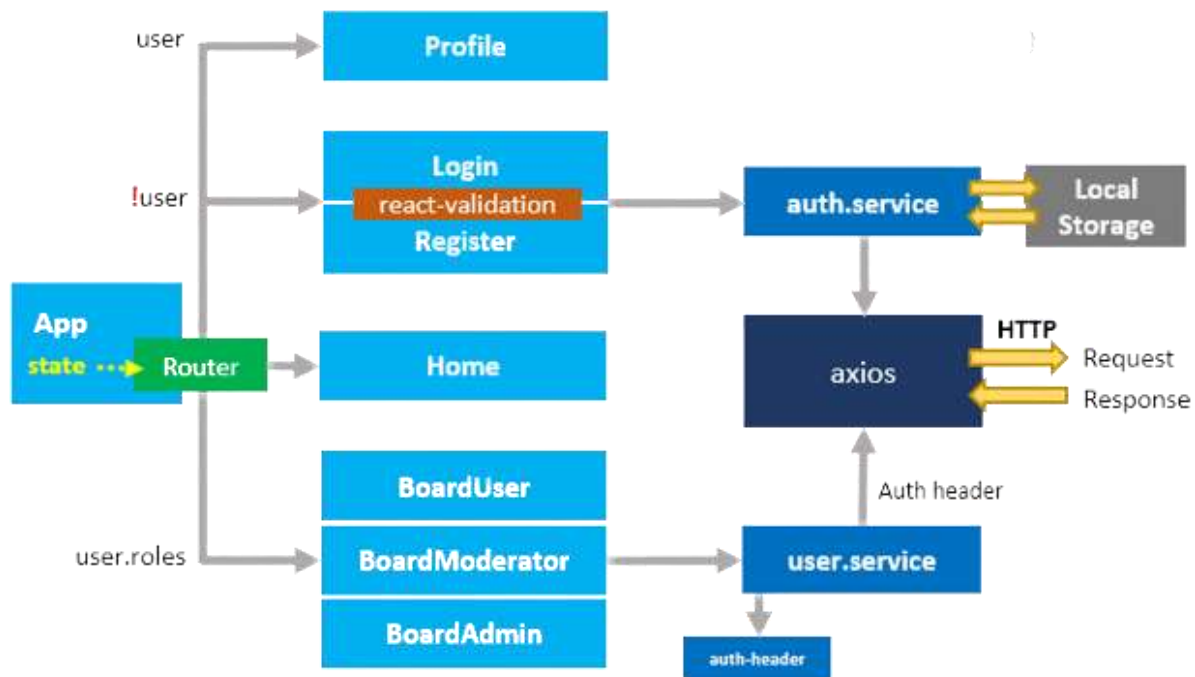


Fig 3.2 Sequential Diagram

In the back-end there are 3 types of endpoints 1. User Endpoints 2. Admin Endpoints 3. Dev Endpoints . User Endpoints are used to have basic auth and any user with a valid auth token can access these endpoints. Admin endpoints can only be accessed by the users with valid admin token this adds additional security to prevent any user from manipulating the database. Admins can ban the users and the

front end keeps checking the ban endpoint to make sure the user has access to the token.

Search uses. Indexes are special data structures that store a small portion of the collection's data set in an easy to traverse form. The index stores the value of a specific field or set of fields, ordered by the value of the field. The ordering of the index entries supports efficient equality matches and range-based query operations. In addition, MongoDB can return sorted results by using the ordering in the index. The returned items are then rendered on the front end to show the users that relate to the search parameters.

CHAPTER 4

RESULT DISCUSSION

4.1 : RESULT :

Admittedly, alumni are valuable assets of the institutions of higher education. Thus, the more alumni communication is intact the greater opportunities for feedback and knowledge development. An alumni portal facilitates the promotion of research, the exchange of experience, in addition to providing personal, professional and academic networking. The developers decided to create the Alumni Portal System to help the university to track the alumni and to gather their information thru online portal without hassle.

Alumni can use their own personal computers devices to add, monitor and update their current status. In view of the above, the developers would like to recommend that additional verification procedures be made to ensure that Only bonafide alumni can register in the system. Main innovations encompass the inclusion not only of the alumni, but also the current students to the alumni portal, therefore, the link with the university is strengthened from the beginning with a tendency to bolster the bond between the students (current and alumni) and the educational institution.

4.2 OUTPUT EXPLANATION:

4.2.1 Login Page :

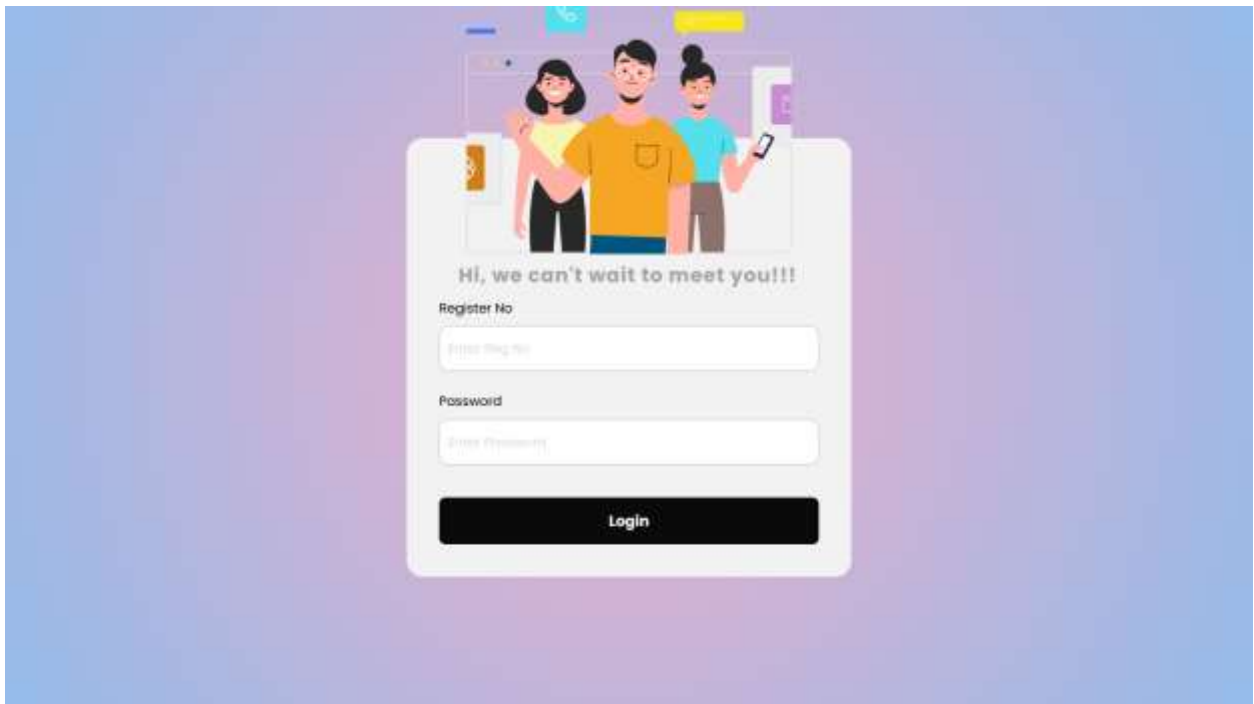


Fig 4.1 Login Page

A login page could be a web page or a section page to an online site that requires client distinguishing proof and verification, frequently performed by entering a username and password combination. Logins may give access to a whole location or portion of the website . Logging in not as it were gives location to for the client, but too permits the site to track client activities and behavior. Logging off a webpage or location may be manual by the client or they can happen naturally when certain conditions (such as closing the page, turning off the computer, a long time delay, happen Here, login takes place with the help of JSON Web Token which ensures security of the web application. Initially it takes a username password to verify whether a given username really exists or not,

after it checks the given password against that username. Above process will avoid vulnerabilities, third party access and mal-users. This will act as a first line of defense with a gateway which allows authorized users and admins to access the Alumni Portal web application.

4.2.2 Home Page :

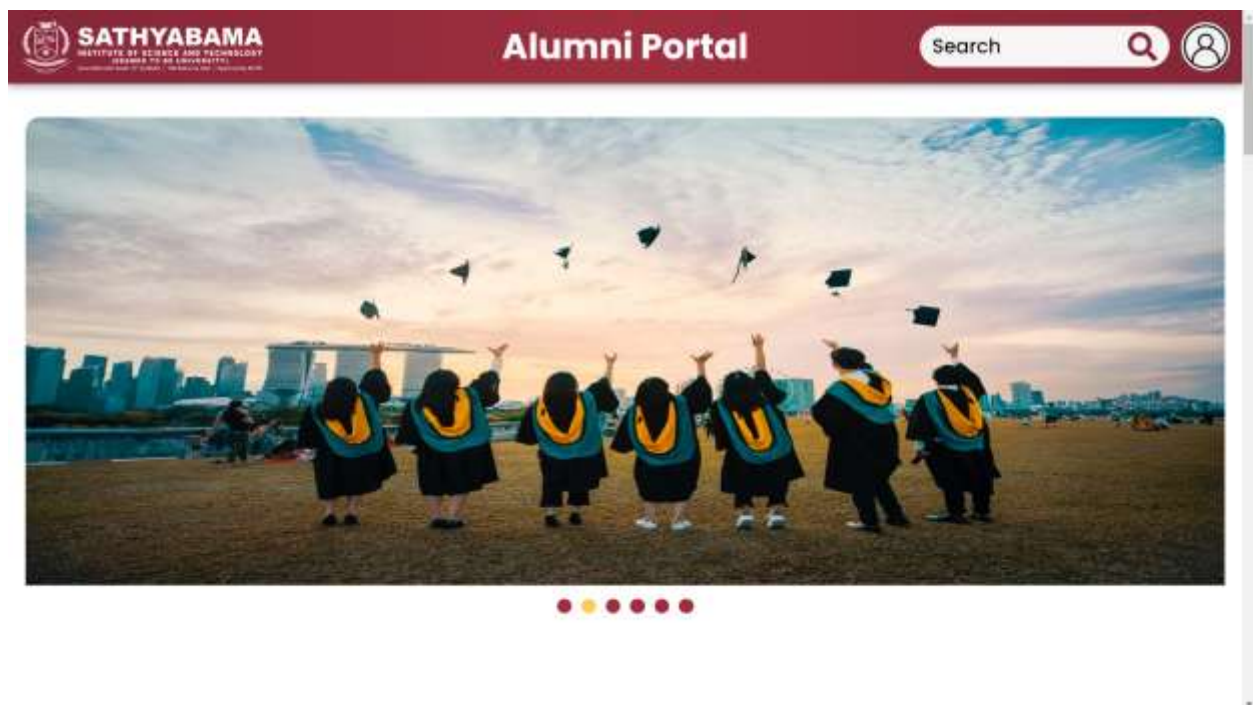


Fig 4.2 Home Page

A landing page is the first page of a website. When you visit a web URL that merely contains a domain name, this is the default page that loads. The root directory of a website houses the home page. The home page on most web servers can have a variety of filenames. Although there is no set structure for a home page, most feature a navigation bar with links to other areas of the website. A search bar, information about the website, and current news or changes are all frequent characteristics seen on a home page. Some websites include material that

is updated on a daily basis. It is the page that visitors find themselves in when they load a URL. Web managers can control the home page as a way of directing the user experience.

4.2.3 Activity Page :

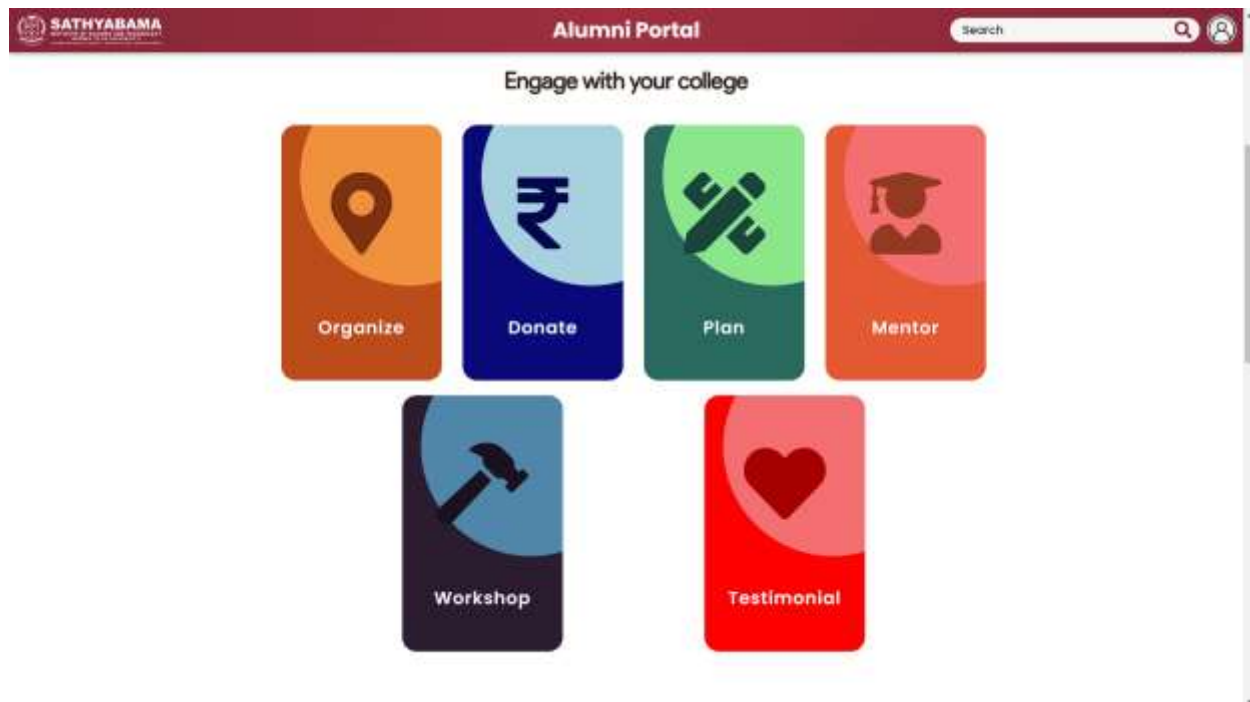


Fig 4.3 Activity Page

Here, we can find activities which bring engagement among graduates, current students as well as college staff members. There are lots of things to do in the activities section.

- Organize events, competitions, hackathons which induce winning mindset among current students.
- Making donations to the institute helps to raise funds for scholarships, develop a good infrastructure for student and staff betterment.
- Planning the curriculum and syllabus is so vital for currently pursuing students to gain knowledge for current industry standards.

- Mentoring students will help them improve themselves and make them acquire industry expected knowledge.
- Workshops act as a great platform to learn anything and provide them to demonstrate the things that they learn.
- Testimonials showcase value and things gained by the graduates when they were pursuing in the institute.

4.2.4 Events Page :



Fig 4.4 Event Page

Events and competition opportunities are great for students who want to show their abilities and talents. Competitions play an important role in pushing students to succeed and excel by providing much more than simply the winning prize. Competitions provide players with the opportunity to obtain valuable experience, demonstrate abilities, assess and evaluate outcomes, and discover personal potential. Competitions also motivate pupils to try new things and improve their ideas and talents. The lesson to be learned is that when we're struggling to go on, we can look back at our past achievements and how good it felt to get there.

Competition allows us to use our previous triumphs as an added boost to keep pushing forward during difficult times in everything we choose to pursue.

4.2.5 Search Page :

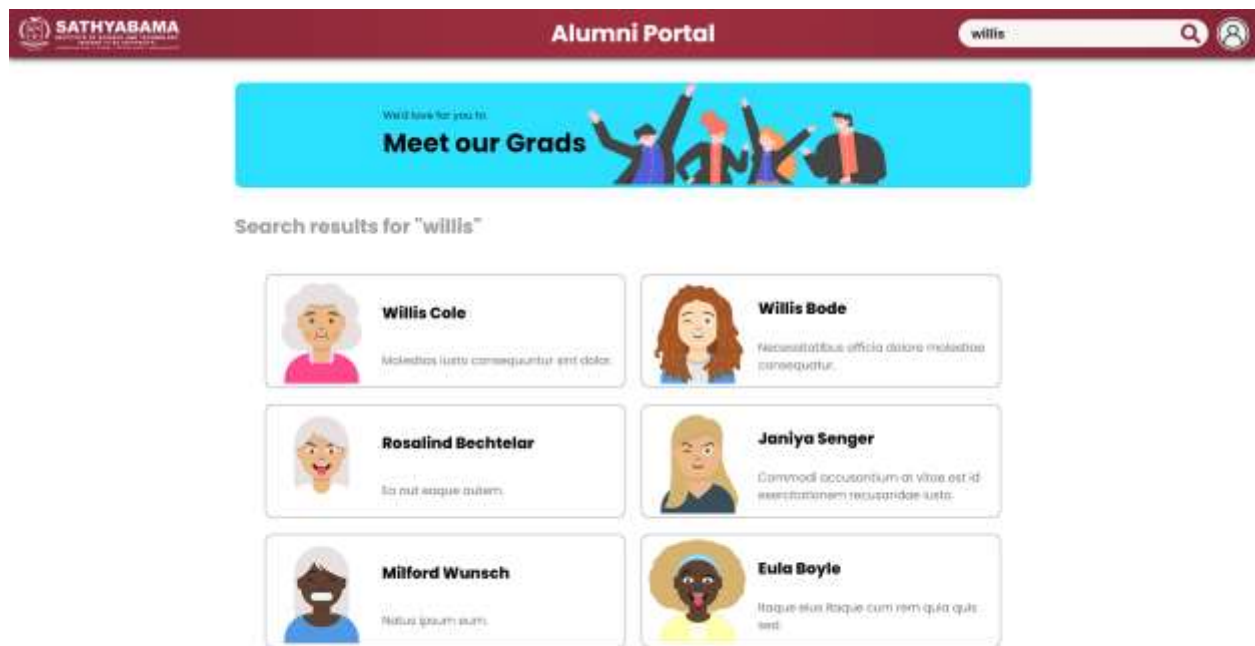


Fig 4.5 Search Page

Search for Alumni is so important for students and institutes because to pick a great person will definitely leave a good impact for both. Site search is a feature that allows visitors to quickly and effectively search the content or product catalogs of a specific website. A fantastic site search tool is one that is personalized to the unique website. A smart site search not only regularly indexes the site to guarantee the most recent information is immediately available, but it also directs visitors as they explore a website's content, assisting them in discovering stuff they may not have even realized they were interested in. Search bars are a crucial aspect

of website functioning and appearance, and most of us would find it strange to use a website without one. A search bar is a no-brainer when developing a website, but genuinely useful site search is much more than that.

4.2.6 User Profile :

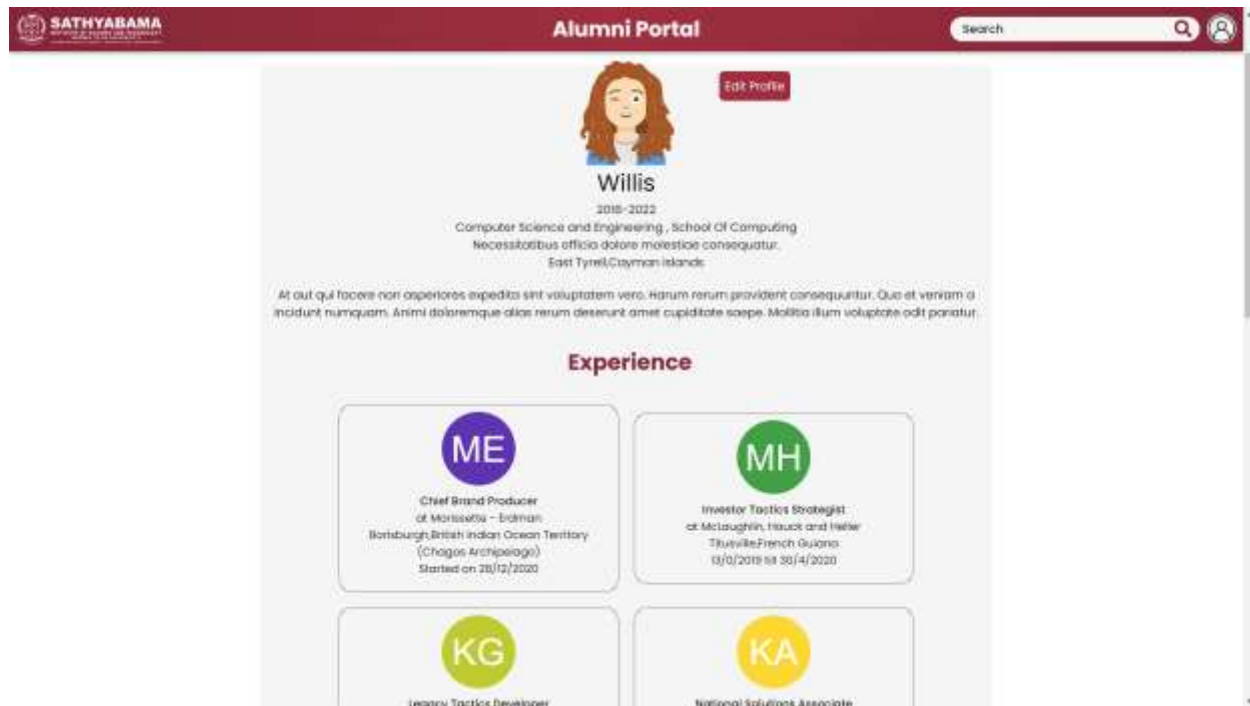


Fig 4.6 User Profile

Personal information may be included in a user profile. Most user profiles include a set of criteria that are either required or optional. In certain circumstances, the user profile may have many parts and tabs. Administrators often monitor and manage user profiles in the case of software applications or network-related applications. In certain situations, they are kept up to date by the users themselves. The user profile allows the system to be personalized and can assist in tailoring certain features to his or her needs. A user profile may typically be used to determine a person's preferences and requirements.

User profiles have information for most attributes like system needs, general data, restrictions and application settings.

It can help in specifying the terms for certain features in the system such as profile visibility, layout view, color themes, preferred languages, date format and message display format. User profiles can be created, modified and deleted. Most user profiles have a user description like account details, user details and password-related information. In most circumstances, the user profile aids in providing users with additional security. Users can build authentication measures using various characteristics in their user profile, such as a secret question or password. With most apps, a user profile can also aid in password recovery or the establishment of a new password for users.

4.2.7 Admin Dashboard :

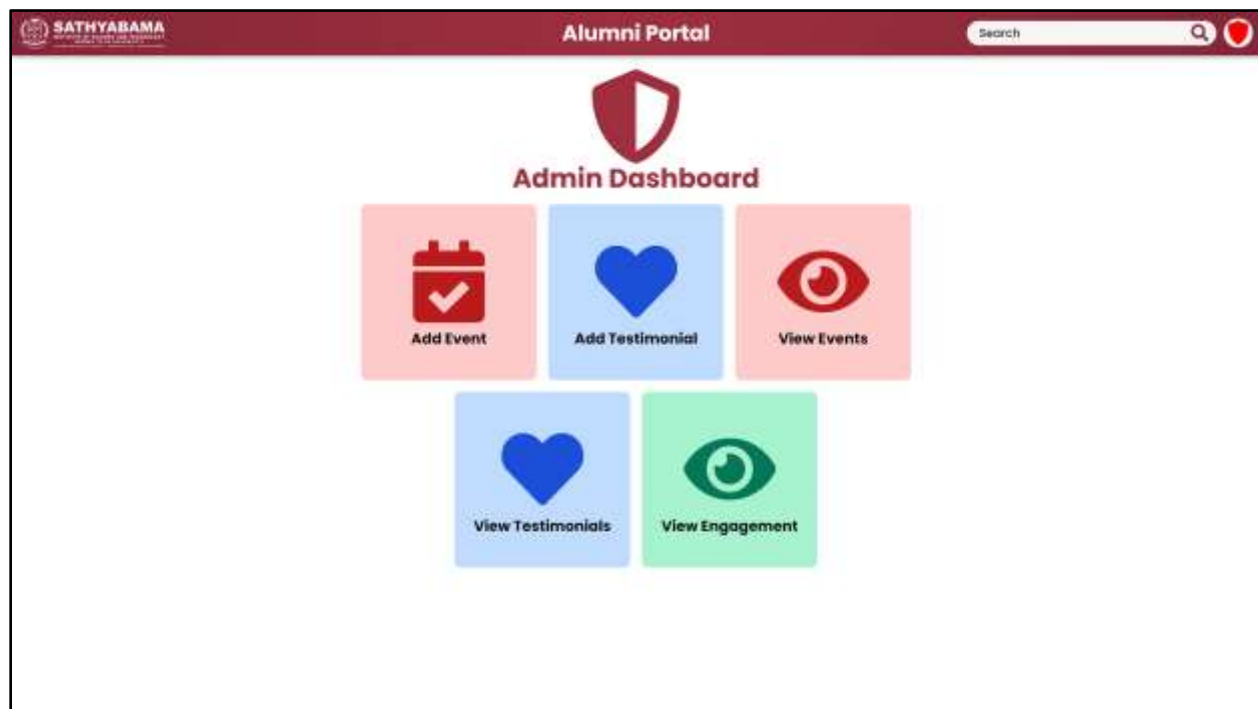


Fig 4.7 Admin Dashboard

Admin Pages display in the administration area. Appropriate menus and other styling appear is necessary for the content. The admin panel contains your build and can be found on your App Dashboard. It exists in order to give you control over your app once it's built.

It was started by creating the backend data models, admin, as well as APIs, then adding them to the admin panel. The server side will serve as the main first deliverable and makes for good pages. You can build the entire backend in just an hour or two if you have already planned the app out: you're just clicking on a data entry.

4.2.8 Testimonials :

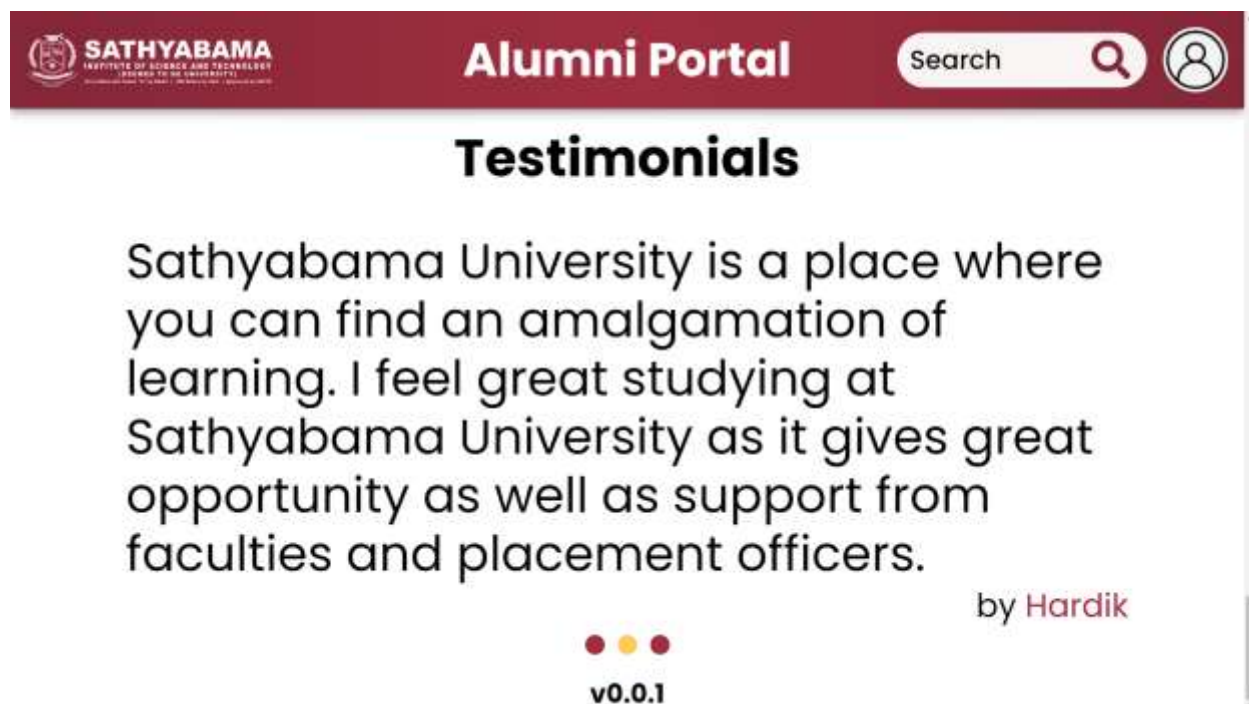


Fig 4.8 Testimonials

A testimonial is a third party statement that comments on how good someone or something is. By strategically placing website testimonials on a dedicated 'Testimonials' page, as well as on your 'About Us' page, product pages, and more, you can convince interested users that you're worth their trust. In fact, reaffirming your product's worth is one of the key techniques in the psychology of selling.

4.2.9 Event Control View :



Fig 4.9 Event Control View Page

From here only admin can control the event display and event deletion from the admin dashboard which will make sure those events are current and errorless. This made an admin work easier by having an eye on event sequence data. A benefit of having everything in a single place is that all your information is positioned in a specific order, making it easier for your audience to navigate your website and get all the information they can get when they interact with your brand. It's easy to scroll through and doesn't take much time to find what you're looking for.

4.2.10 Testimonial Control View :

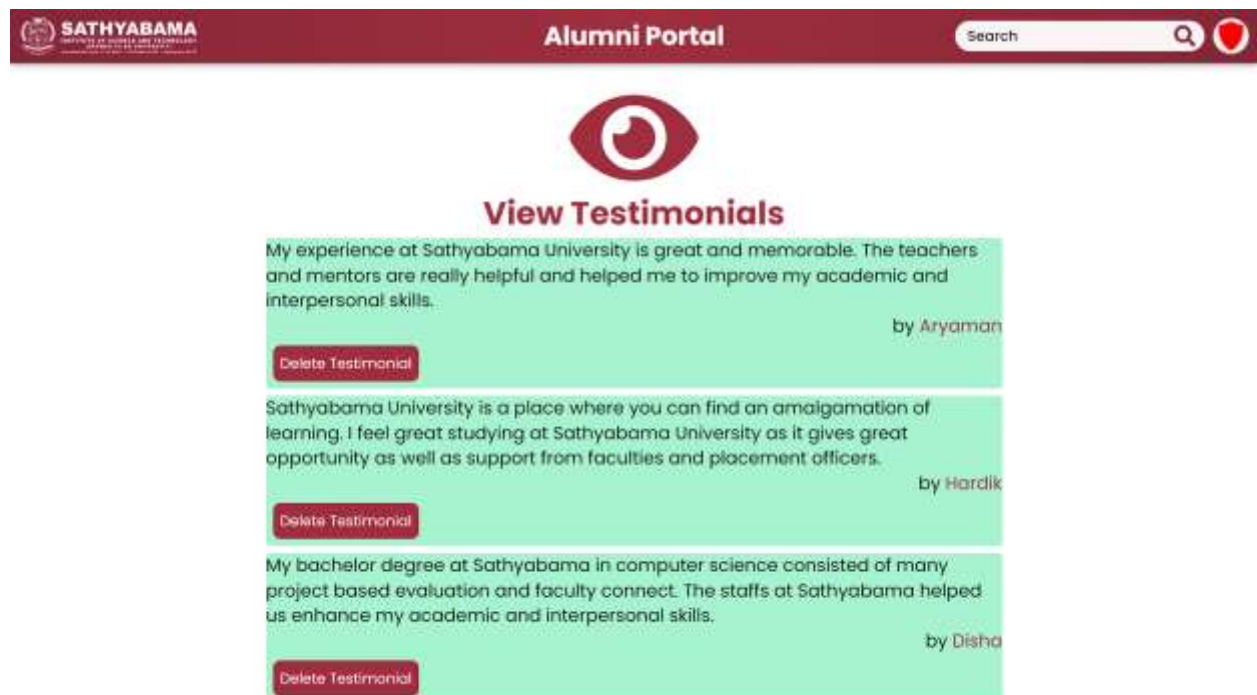


Fig 4.10 Testimonial Control View

From here only admin can control the testimonial display and testimonial deletion from the admin dashboard which will make sure those testimonials are errorless. This made an admin work easier by having an eye on testimonials sequence data.

4.2.10 Engagement Control View :

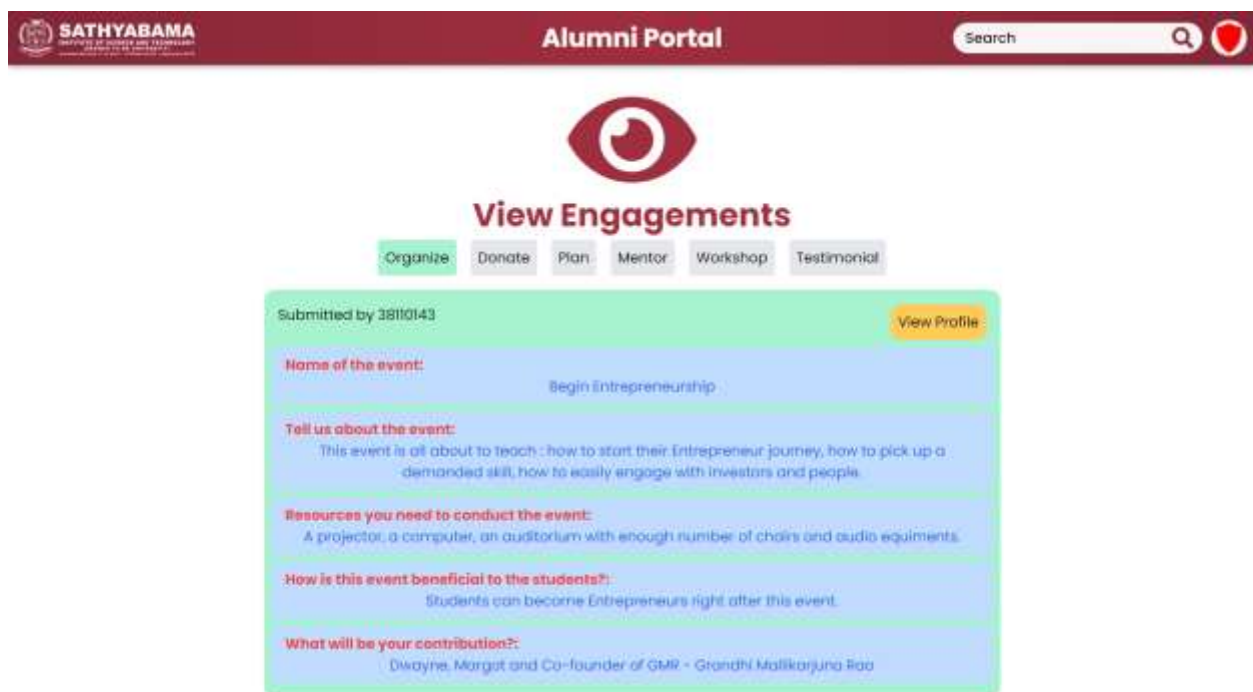


Fig 4.11 Engagement View

In this page an admin can see the Alumni activities and involvements in the form of engagement in the event, planning and so on. This page shows

different types of alumni activities and their details over here which brings a new feature called single page rendering. Admin can verify the details whether it is a genuine form application or a spam form application so that admin can ban that user which makes sure the geniality.

CHAPTER 5

CONCLUSION AND FUTURE WORK

5.1 CONCLUSION :

School can be expensive and we all know it's hard work. People may not realize it, but education is so much more than just the qualifications you receive at the end. It's about the lessons you learn, the people you meet, and the relationships you build. So why would you expect to leave all of that behind after graduation? Alumni networks provide long-term value to an educational institution by giving alumni the chance to stay in contact and continue to learn from each other long after they have left school. Support networks are hard to come by out there in the world and having a ready-made one full of people with shared experiences just waiting to connect is a luxury that few can afford to turn down. When you can, join your school's alumni network.

Due to the need to connect all alumni (students who have already passed) to the organization, it was possible to share their perspectives, experiences, orientations, ideas, strategies and motivations. The focus of the alumni portal app is on the interaction between graduates and current students at the university. In this way, students or alumni can get to know each other and their current activities. This portal focuses on the interaction/communication feature that allows the current students to interact with the alumni of the university or organization to get various updates on current industry trends, internship opportunities, project sponsorships and multiple references opening up in the company World. Therefore, in this project, we developed a dynamic alumni portal design that enables two-way interaction between all students and all students.

5.2 FUTURE WORK :

The proposed work in the Alumni Portal will make the Alumni data available in an organized web application which will help current students and college staff members to know instantly about them. However there are some other further plans like including current students as future alumni in this portal, engagement point system, referral system for current students to get their internship/job which makes effort much more easier.

5.3 FUTURE SCOPE :

- This alumni portal would provide a common platform for interaction of college related members.
- Virtual alumni meetings.
- Job posting.
- Internships.
- Industry sponsored projects.
- Entrepreneurial guidance.
- Portal provides active user status, chat rooms, personal chatting & messaging.

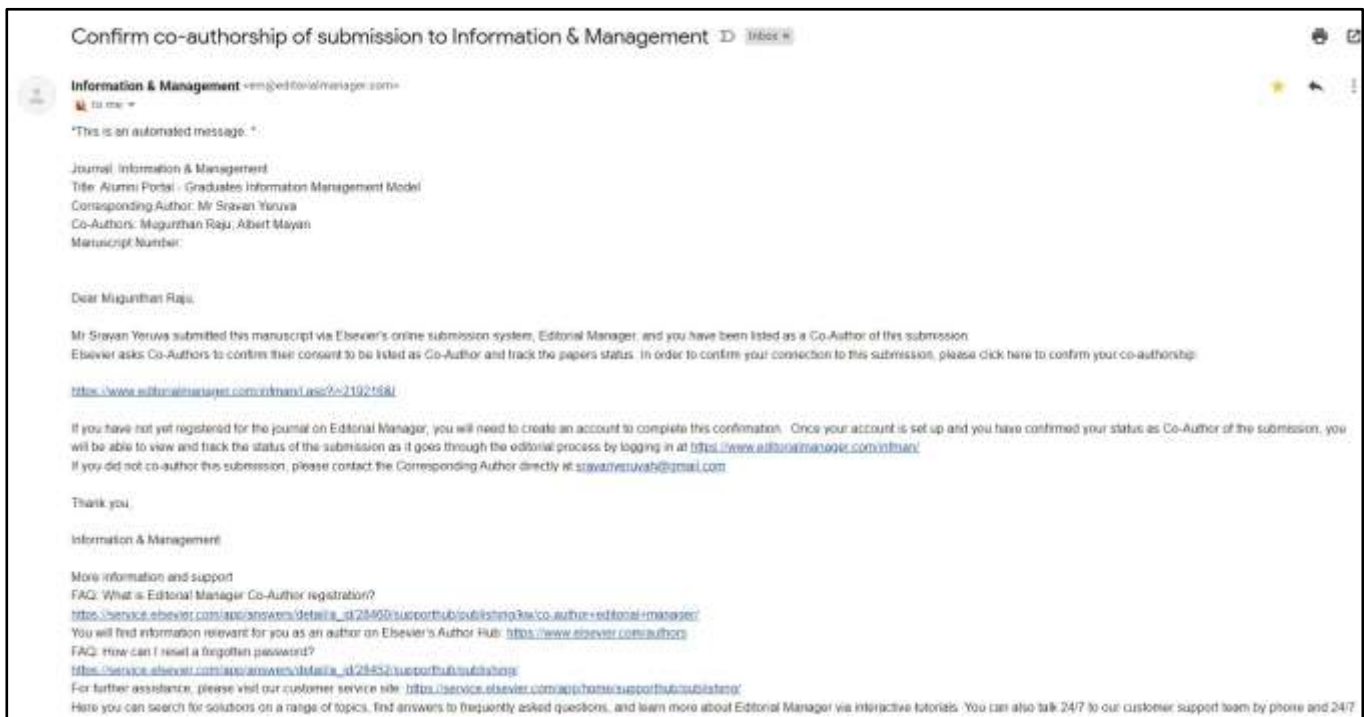
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APPENDICES

A) RESEARCH PAPER - JOURNAL SUBMISSION :



B) PLAGIARISM REPORT :



C) SAMPLE CODE :

```
import classes from "./HomePage.module.css";
import HomeTile from "./HomeTile";
import Divider from "../GlobalComponents/Divider/Divider";
import EventSlider from "./EventSlider/EventSlider";
import Carousel from "react-elastic-carousel";
import "./elastic_carousel.css";
import SearchWidget from "./SearchWidget/SearchWidget";
import { useNavigate } from "react-router";
import FullCarousel, {
  CarouselItem,
  TestimonialItem,
} from "./Carousel/FullCarousel";
import { useEffect } from "react";
import { getController } from "../GlobalServices/apiController";
import Testimonials from "./Testimonials/Testimonials";
function HomePage({ loader, setToken }) {
  const imageLinks = [
    "https://cdn.pixabay.com/photo/2015/04/23/22/00/tree-736885__480.jpg",
    "https://images.unsplash.com/photo-1541339907198-
e08756dedf3f?ixlib=rb-
1.2.1&ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=f
ormat&fit=crop&w=1170&q=80",
    "https://cdn.pixabay.com/photo/2015/04/23/22/00/tree-736885__480.jpg",
    "https://cdn.pixabay.com/photo/2015/04/23/22/00/tree-736885__480.jpg",
    "https://cdn.pixabay.com/photo/2015/04/23/22/00/tree-736885__480.jpg",
    "https://cdn.pixabay.com/photo/2015/04/23/22/00/tree-736885__480.jpg",
  ];
```

```

useEffect(() => {
  async function fetchData() {
    const request = await getController("/user/isUserBanned", {
      id: localStorage.getItem("id"),
    });
    console.log(request.data);
    if (request.data === true) {
      if (request.data !== localStorage.getItem("ban")) localStorage.clear();
      setToken("");
    }
  }
  fetchData();
}, []);
return (
  <div className={classes.body}>
    {/* Carousel */}
    <div className="w-full ">
      <FullCarousel>
        {imageLinks.map((link) => {
          return (
            <img className="object-fill h-96" src={link} alt="" srcset="" />
          );
        })}
        {/* <CarouselItem>Item 1</CarouselItem>
        <CarouselItem>Item 2</CarouselItem>
        <CarouselItem>Item 3</CarouselItem>
        <CarouselItem>Item 4</CarouselItem>
        <CarouselItem>Item 5</CarouselItem>
        <CarouselItem>Item 6</CarouselItem>
        <CarouselItem>Item 7</CarouselItem>
        <CarouselItem>Item 8</CarouselItem> */}

```

```

    </FullCarousel>
</div>
{ /* <div className={classes.sliders}>
    <Sliders></Sliders>
</div> */ }
<Divider />
{ /* Engage with your college */ }
<h1 className={classes.h2}>Engage with your college</h1>
<div className={classes.cards}>
    <HomeTile
        iconName={`fas fa-map-marker-alt fa-7x`}
        title="Organize"
        darkColor="rgb(189,76,27)"
        lightColor="rgb(240,145,61)"
        desc="Organize an event in you college"
        navigateTo="/organize"
    ></HomeTile>
    <HomeTile
        iconName={`fas fa-rupee-sign fa-7x`}
        title="Donate"
        darkColor="#090979"
        lightColor="rgb(168,209,223)"
        desc="Donate anything"
        navigateTo="/donate"
    ></HomeTile>
    <HomeTile
        iconName={`fas fa-pencil-ruler fa-7x`}
        title="Plan"
        darkColor="rgb(42,105,94)"
        lightColor="rgb(140,231,140)"
        desc="Have an idea ? Lets Plan it together"

```

```

        navigateTo="/plan"
    ></HomeTile>
    <HomeTile
        iconName={`fas fa-user-graduate fa-7x`}
        title="Mentor"
        darkColor="rgb(229,89,52)"
        lightColor="rgb(243,111,114)"
        desc="Guide your juniors for a better career"
        navigateTo="/mentor"
    ></HomeTile>
    <HomeTile
        iconName={`fas fa-hammer fa-7x`}
        title="Workshop"
        darkColor="rgb(43,28,47)"
        lightColor="rgb(79,134,169)"
        desc="Conduct a workshop in college"
        navigateTo="/workshop"
    ></HomeTile>
    <HomeTile
        iconName={`fas fa-heart fa-7x`}
        title="Testimonial"
        darkColor="red"
        lightColor="rgb(243,111,114)"
        desc="Write a review for your college"
        navigateTo="/testimonial"
    ></HomeTile>
</div>
<EventSlider />
<SearchWidget></SearchWidget>
<Testimonials />
<div className="font-bold">v0.0.1</div>

```

```
    </div>  
  );  
}  
  
export default HomePage;
```