PlacedIn Using React and .NET

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Abstract— PlacedIN has very important role in college its aims at providing the help to automate and simplify the registration Process and list of eligible students generated for placement. This system do all work regarding placement like collection of student data, authenticate and activate the student profiles, notifying eligible students via Email, check the number and percentage of placed and unplaced student. Gives proper login with time and role based secured access is provided to placement officer, company, college staff and students. Students logging should be able to upload their information in the form of a resume. Placement officer can access, view information of user and prepare schedule of all activities regarding placements. Company can give their own application procedure by providing link. College staff can see the registered students and their status. All registered users are eligible to participate in forum.

Collecting and authorizing the resumes, communicating about the various job opportunities with the students, managing the corporate relationship for inviting them for the placements, provides job openings to the alumni students who are not placed, maintaining information about placed students and then communicate with different users of system. Manage Company Profiles & Job Postings, Authenticate and activate the student profiles as well as company profile, Send Notifications to students, create list of students as per company criteria for Job Request, provides the list of shortlisted student with resume to company HR, send data of shortlisted students based on Search Criteria, Manage student profiles.

I. INTRODUCTION

The purpose of the project "PlacedIn using react and .Net", the manual work makes the process slow and other problems such as inconsistency and ambiguity on operations. In order to avoid this web based placement managed system is proposed, where the student information in the college with regard to placement is managed efficiently. It intends to help fast in fast access procedures in placement related activities and ensures to maintain the details of the student. Students logging should be able to upload their personal and educational information. The key feature of this project is that it is one time registration enabled.The placement cell calls the companies to select their students for jobs via the campus interview. The placement cell allows the companies to view the student resumes in selective manner. They can filter the students profile as per their requirement. The job details of the placed students will be provided by the administrator. The administrator plays an important role in our project. Our project provides the facility of maintaining the details of the students and gets the requested list of candidates for the company who would like to recruit the students based on given query.

II. PROBLEM STATEMENT

A. Literature Survey

Almahdi Alshareef, Ahmed Alkilany basically focuses on providing a simple interface for the easy collation and maintenance of all manner of student information. The creation and management of accurate, up-to-date information regarding students' academic careers is critical students and for the faculties and administration of Sebha University in Libya and for any other educational institution. A student information system deals with all kinds of data from enrollment to graduation, including program of study, attendance record, payment of fees and examination results to name but a few. All these data need to be made available through an Online Interface.

Prabhu T Kannan, Srividya K Bansal focuses on providing information to support the operation, management and decision-making functions of enterprises or organizations. In the face of huge amount of information, it is required to possess the student information management system to improve the efficiency of student management. Through this system, the standardized management, scientific statistics and fast query of student information can be realized, and thus the workload of management can be reduced. In this paper, a typical student information management system will be established to realize the systematization, standardization and automation of student information relationship.

S.R.Bharamagoudar, Geeta R.B, S.G.Totad focuses on simple interface for maintenance of student information. The creation and management of accurate, up-todate information regarding a student's academic career is critically important in the university as well as colleges. Student information system deals with all kind of student details, academic related reports, college details, course details, curriculum, batch details, placement details and other resource related details too. It tracks all the details of a student which can be used for all reporting purpose, tracking of attendance, progress in the course, completed semesters, years. Different reports and Queries can be generated based on vast options related to students, batch, course, faculty, exams, semesters, certification and even for the entire college.

Shiqiu Huang, Rzhang, zhengwei Qi investigated on the Dynamic taint analysis is a prevalent approach to protect a program from malicious behaviors, but fails to provide any information about the code which is not executed. This paper describes a novel approach to overcome the limitation of traditional dynamic taint analysis by integrating static analysis Into the system and presents framework SDCF to detects of ware vulnerabilities with high code coverage.

Our experiments show that SDCF is not only able to provide efficient runtime protection by introducing an overhead of 4.16 based on the taint tracing technique, but is also capable of discovering latent software vulnerabilities which have not been exploited , and achieve code coverage of more than 90%.

Hecio A. Soares and Raimundo S. Moura basically focuses on the users can access easily to this and the data can be retrieved easily in no time. In the student registration form, we can give personal details, educational qualifications, and professional skills and upload resume. The job details of the placed students will be provided by the administrator. The job provider and the placements coordinator to take effective actions on the web as follow-on from the information they have viewed. The administrator plays an important role in our project. He provides approval of student registration and updating.

Source : https://dzone.com/articles/why-choosereact-for-front-end-development The DOM has a tree like structure and changes on top may affect the bottom and this will create a problem on giving delay to UI

responses and affecting the user experience React solves the problem with a layer of the Virtual DOM between the user layer and actual DOM fortunately. The Virtual DOM is a virtual representation of the DOM and rather than staying on the screen, it stays on the memory. The changes made on the Virtual DOM is taken care by an algorithm which is made and determines which changes must has to be made to the real DOM and, thus, the user's screen. Virtual DOM absorbs any changes to the DOM and keeps them in memory. The algorithm then detects on which component the change was made and updates that part of the DOM. This change will be reflected on the user's screen without disturbing the other components.

When React came into the picture, Angular was the only and major contender in the JS framework space. While Angular was a complete and proper framework, it was very difficult for developers as they had to do a lot of coding. Even seasoned JavaScript developers, found it difficult to code and they were looking for some alternative to solve their solution. Angular.JS was never the most desirable way to build JS applications. It has more functionalities and those were not needed by most developers.

React.js came and it revolutionized the way web applications are developed. However, React isn't an MVC framework as Angular is. It is only library. That is, React.js doesn't include state managers, routers, and API managers in the core library. It may look like a limitation but for React developers, but this is only the best in making website as code is very easy to understand with all components and other things. The aim of the paper is to demonstrate the suitability of the react.js frameworks available for the development of web applications as well as mobile
.

React gives a much effective and light weight document object model. It doesn't communicate with the DOM produced by the program yet responds to the document object model put away in the memory. This outcomes in a bursting quick and powerful execution of the application.

In the vast majority of the other web development frameworks, direct interaction with the program DOM is made which brings about direct whole DOM tree control on every single page activating occasion. Subsequently, when a huge lump of information is to be adjusted, the presentation gets seriously influenced. Despite what might be expected, ReactJS utilizes something known as a virtual DOM. Its working is very straightforward. Correlations with virtual DOM and genuine DOM are made utilizing a diff() algorithm and just the nodes changes the along these lines reflected go into the document object model tree.

Despite of a couple of minor weaknesses that that ReactJS has, it is unquestionably a definite shot distinct advantage. Present day web is everyday getting increasingly unique and client intelligent. Client experience configuration patterns are persistently changing and advancing.

The customer contents currently ensure that solitary vital and fundamental information is pushed, and a consistent and satisfying experience is kept up over the whole web. It is the present world's interest for straightforwardness, effectiveness, and more prominent openness. ReactJS has serious force and highlights to meet prerequisites of the present patterns. More or less, it can said that ReactJS is unquestionably going to affect the way applications are composed for the web.

There has been considerable interest in using control theory to build web servers, database managers, and other systems. We claim that the potential value of using control theory cannot be realized in practice without a methodology that addresses controller design, testing, and tuning. Based on our experience with building a controller for the .NET thread pool, we develop a methodology that: (a) designs for extensibility to integrate diverse control techniques, (b) scales the test infrastructure to enable running a large number of test cases, (c) constructs test cases for which the ideal controller performance is known a priori so that the outcomes of test cases can be readily assessed, and (d) tunes controller parameters to achieve good results for multiple performance metrics. We conclude by discussing how our methodology can be extended, especially to designing controllers for distributed systems.

Microservices are small applications with a single responsibility that can be deployed, scaled, and tested independently. They're gaining momentum across industries to facilitate agile delivery mechanisms for service-oriented architecture and to migrate function-oriented legacy architectures toward highly flexible service orientation. This article presents a brief overview of microservice technologies and how to migrate to them.

A. Objectives

To ensure that the placement hiring procedure is speedier than the previous system. Collecting and authorizing the resumes, communicating about the various job opportunities with the students, managing the corporate relationship for inviting them for the placements, provides job openings to the alumni students who are not placed, maintaining information about placed students and then communicate with different users of system. Provide a user friendly interface for admins to access the placement drives and for non-admins to check the company drives and apply for it Allow new students or staff to enter their details into the database via a graphical user interface. Ability to show the user whether or not the placement process was effective.

B. Existing System

Existing system does all process has done by manually. Placement officers maintain the information about students via google forms. If any modifications or updates are required in their profile of any students, student has to ask class representative to update the details. This is very difficult task for TPO to maintain the student data and company details as it is time consuming, lack of security of data and also it takes more man, etc,. This is so difficult to the Tpo when number of user's increases.

The students were not being made aware of the T&P activity other than placements. The information like company CV Format, Job details are not available to the student. There was no record kept of the past students and their working status. There was less communication between placement officer and current student. So that this can be improved by designing Advanced software.

C. Proposed System

The Placement Application aims to provide a platform for the students, where they can get updated regarding placements directly from the Placement officer, they can communicate with their seniors and get all the stats related to previous placements and upcoming companies for the college.

The PlacedIn web portal give easy access to the users that they can add and retrieve information so quickly. The proposed system is fully computerized, which overcome all the drawbacks of existing system. Students can view and update information at any time. Students can edit their CVs. Students can access relevant stuff placed online for them. For alumni the last three years' data will be maintained.

The TPO can give an approval to edit information done by the student. In addition, TPO can also search the eligible student based on the company criteria and can generate the list of eligible students. Also TPO can send an automated email to the eligible student. TPO can communicate with the student through the forum module.

The proposed system can overcome all the limitation of the existing system, such as student's information is maintained in the database, it gives more security to data, ensures data accuracy, reduces paper work and save time, only eligible students get chance, it makes information flow efficient and paves way for easy report generation, reduce the space. proposed system is cost effective.
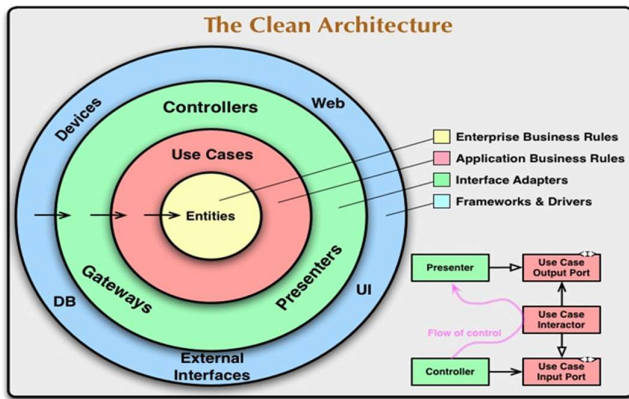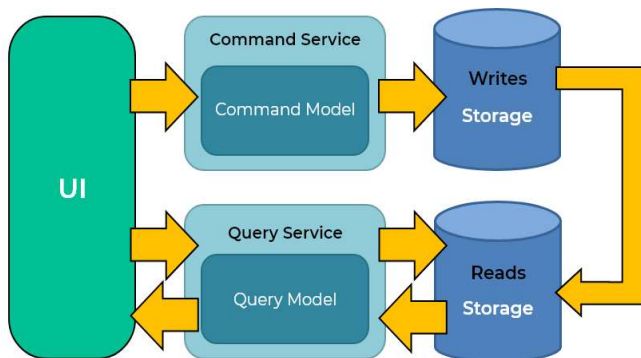
I.   METHODOLOGY

Fig 3.1

The methodology is as shown in Fig 3.1

Clean architecture is required for independent and extensible software. Clean architecture gives a up hand for development where we don't have to be dependent on development technologies like frontend, database and backend.

It is always ready to deploy by leaving the wiring up of the object for last. Or by using feature flags, so we get all the benefits of continuous integration. Multiple works on stories so that different pairs can easily work on the same story at the same time to complete it quicker.

I.   CQRS design pattern:

CQRS stands for Command and Query Responsibility Segregation, a pattern that separates read and update operations for a data store. Implementing CQRS in your application can maximize its performance, scalability, and security. The flexibility created by migrating to CQRS allows a system to better evolve over time and prevents update commands from causing merge conflicts at the domain level.
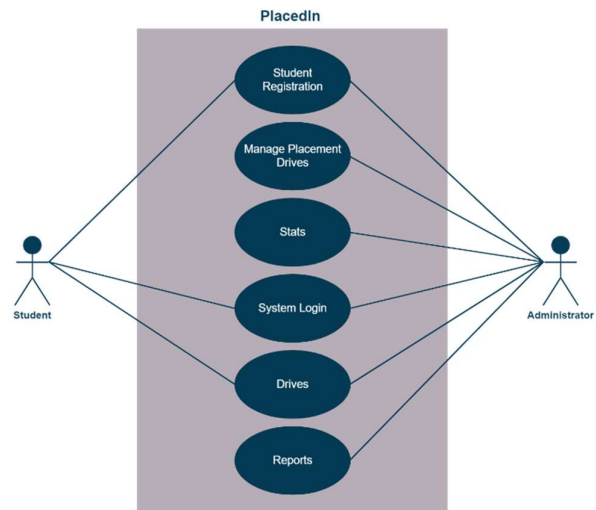

A.   UML Use-Case Diagram

Fig 3.2

A use-case diagram is used to depict the various ways in which a user can engage with a system as shown in Fig 3.2 . A use case diagram is brief and to-the-point. Instead, a proper use case diagram depicts an overview of the relationship b/w use cases, actors and systems. In the above use case diagram, there are 2 actors named Admin and student. There are total of 6 use cases that represent the specific functionality of the PlacedIn. Each actor interacts with a particular use case.

It is not necessary that each actor should interact with all the use cases, but it can happen. Each actor has to first log in into the system. An admin actor can maintain the student details and placement drives that is to enroll/register the students to the drives. It includes create, update & delete operations. He is the one who has all the control over the drives. He can generate reports i.e., export the details into a .csv file. He can do that daily or get complete stats of students. The actor Student can apply and view the company drives.

IV.   ALGORITHM OF THE PROPOSED SYSTEM

A.   React JS

React is a JavaScript library for building user interfaces.

- **Declarative:** React makes it painless to create interactive UIs. Design simple views for each state in your application, and React will efficiently update and render just the right components when your data changes. Declarative views make your code more predictable, simpler to understand, and easier to debug.

- **Component-Based:** Build encapsulated components that manage their state, then compose them to make complex UIs. Since component logic is written in JavaScript instead of templates, you can easily pass rich data through your app and keep the state out of the DOM.

- **Learn Once, Write Anywhere:** We don't make assumptions about the rest of your technology stack, so you can develop new features in React without rewriting existing code. React can also render on the server using Node and power mobile apps using React Native.

B. *.NET*

.NET is a software framework that is designed and developed by Microsoft. The first version of the .Net framework was 1.0 which came in the year 2002. In easy words, it is a virtual machine for compiling and executing programs written in different languages like C#, VB.Net, etc.

It is used to develop Form-based applications, Web-based applications, and Web services. There is a variety of programming languages available on the .Net platform, VB.Net and C# being the most common ones. It is used to build applications for Windows, phones, web, etc. It provides a lot of functionalities and also supports industry standards.

.NET Framework supports more than 60 programming languages in which 11 programming languages are designed and developed by Microsoft. The remaining Non-Microsoft Languages are supported by .NET Framework but not designed and developed by Microsoft.

C. *Visual Studio Code IDE*

Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.
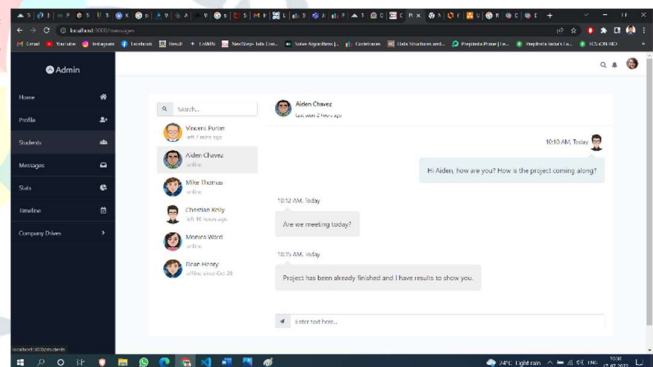
D. *MySQL Database*

A database is a collection of data that is organised. MySQL is a more secure database. MySQL runs on a wide range of operating systems, including Windows, Linux, Solaris, and other UNIX variants. MySQL allows you to execute the client and server on the same computer or on separate computers, over the internet or on a local network. MySQL is a straightforward and straightforward database management system.
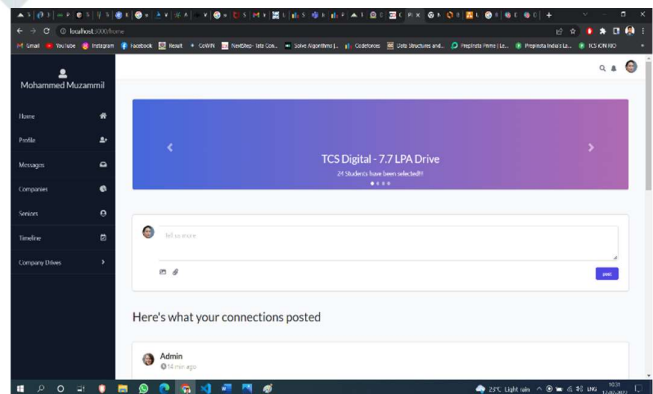
E. *Microservices*

Microservices are an architectural and organizational approach to software development where software is composed of small independent services that communicate over well-defined APIs. These services are owned by small, self-contained teams. Microservices architectures make applications easier to scale and faster to develop, enabling innovation and accelerating time-to-market for new features.

V. ACKNOWLEDGEMENT

VI. RESULTS AND DISCUSSION

• Training and placement department maintains the details of each student.

• Students can view the status of their upcoming campus drives.

• Search feature helps to admin because they check particular student is present or not

• Admin or concerned student can only update student details and academic records like email id , current semester, correspondence address and marks obtained in different semesters via csv file.

• Provides a proper communication channel between student and training & placement department using the Sms.

• Latest information about which company is visiting the campus is provided in the website which helps the students to get updated information quickly.

• Website is user friendly with more GUI so that student view the information easily.

• Duplicate registrations can be avoided and hence it provides reliability.

• Only administrator can modify the Placement and organization record if needed.

• website more helps to make a short list of students who get placed in certain Company and who is unplaced. student can manage passwords, access previous drives reviews and view eligibility criteria for on-going recruitments.
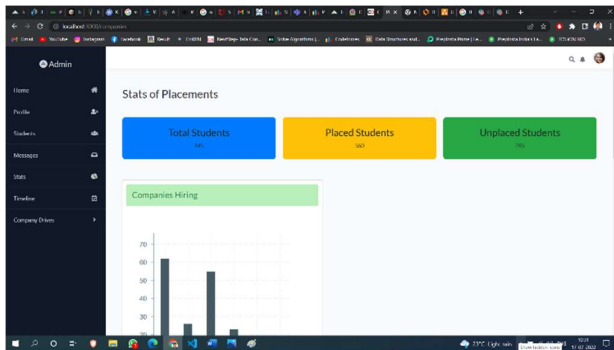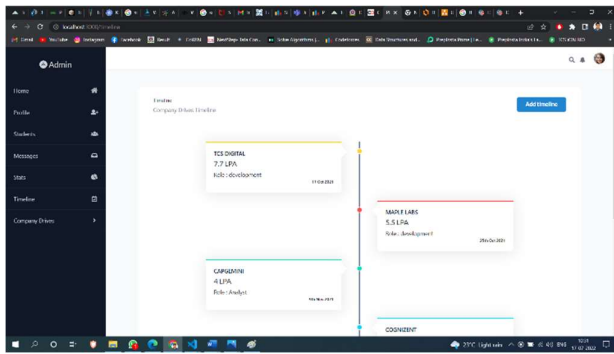

Some of the Snapshots of our project

VII. CONCLUSION AND FUTURE WORK

The final product will provide a platform for students and placements officers, where they can post information regarding placements. Students can access the previous year's placement stats and also information regarding upcoming opportunities. The students can connect with their seniors and also experience a secure and distraction-free platform.

In the existing Placement system, there was poor communication and opportunities for alumni student. Also current students were not get any guidance from senior students. Proposed system gets automated. This system provides registration all the user, personalization to the user, resources to be provided online, communication between the users, online feedback. Students can update their own data. The admin can see the user's information and will validate it accordingly, generate the student list based on the company criteria, company details can be provided to the user, searching and sorting of users can be done, and reports can be generated. Admin will notify each student by sending mail. Alumni data can be maintained. This system also provide forum which is accessible for the students and admin where each students and admin can chat related to placement activities. Overall the process of the training and placement department is automated and advanced.

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