

# Design and Development of Department Placement Portal using MERN Technology

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**Abstract:** Placement portal reduces manual work in activities of placement process and provides opportunities to the students to use collective intelligence to increase selection ratio and eases out placement process. Placement portal focuses on the reduction of manual work and securing data. Creation of student credentials, providing details of company and job to students and keeping the experience of students in the placement process. Placement portal provides modules like Student and Admin. Company details are created by the admin. It manages the Placement process of each Job posting individually. Creation of student credentials, Company Profiles, Manage Job Postings, Authentication for login, Sending emails to students, Creating list of placed students and statistics of placement. Students share their experience of the placement process. The web portal was implemented using the MVC Architecture and MERN Stack (MongoDB, Express, ReactJS, NodeJS) for development.

**Keywords:** Placement Portal, MERN Stack, MVC Architecture, Placement, Experience

## I. INTRODUCTION

For every student as well as college placement is important. Placement process is very difficult to handle as it involves a lot of data. In the Placement Process, college departments face issues in keeping track of the student database, eligible students, placed students and other processes. Department manually collects data most of the time and it is time consuming and databases stored as excel sheets may be altered by mistake. Students may or may not inform the department if they receive personal emails. Interview experiences are not available to every student. The proposed work provides the facility to the students for viewing the job, applying for the same and sharing the experience, which help the students to prepare themselves for the interviews and help to increase the technical knowledge. Details of the Company are provided to the students with the Eligibility Criteria and other Requirements by the admin. So the students can prepare themselves according to the requirements. The ultimate goal of the Project is to provide the students with clear information about the Company, and secure the student data. This Project also provides the clear information about, how many students placed, Total number of students, Total number of companies visited.

## II. LITERATURE SURVEY

[1] S. K. Thangavel, P. D. Bkaratki and A. Sankar, proposed a paper that is reviewed to predict the placement status of the students which is to help teachers and placement cell in an institution to find the prospective students and provide them with better coaching so as to excel in placement processes by various companies.

[2] Santhosh Kumar H, Mrs. Srividhya V R, proposed this paper that describes the Automation of Training and Placement unit of AMCEC (AMC Engineering College). This paper is a web based application for the Training and placement officers (TPO) of the college to manage the student information with regard to placement.

[3] Spoorthi MS, Kavana V, Koushik SN, Veena M, proposed this paper that described the need for a placement system to reduce manual work and built an Android app to overcome the problem.

[4] Ajeena Sunny, Aneena Felix, Angelin Saji, This paper describes a web based solution for placement activity and reduces manual work and keeps track of student education details. Authors built web portal using PHP framework.

[5] A. S. Kendle, M. S. Nagare, H. G. Patre, R. S. Zanwar, V. G. Kottawar and P. B. Deshmukh, This paper represents an Enterprise Resource Planning (ERP) system for Training and Placement Cell in educational institute campuses. The proposed system called TnP Vision aims to automate the entire placement process. It is an interactive software platform that focuses on student data management and analysis to digitize practices, providing visibility into students' success, and providing a forum for employers to streamline the hiring process.

Based on the outcome of Literature survey, it has been observed that most of the work has been implemented using web technologies like PHP, HTML, CSS and Android applications. It is observed that reducing manual work, security to data, past interview experience availability to students are important.

**III. METHODOLOGY**

To design and implement a web-based placement management system. High-quality placements bring good benefits and positive impacts on students as well as for the colleges. During this process the college finds it difficult and time-consuming to collect data from each student. In most cases they collect data manually. It requires a lot of manpower and time. The placement management system is an online application that can be accessed throughout the college with proper login details. This system can be used as an application for the placement officer, coordinator of the college to manage the student information with regards to placement. The student is able to upload their information.

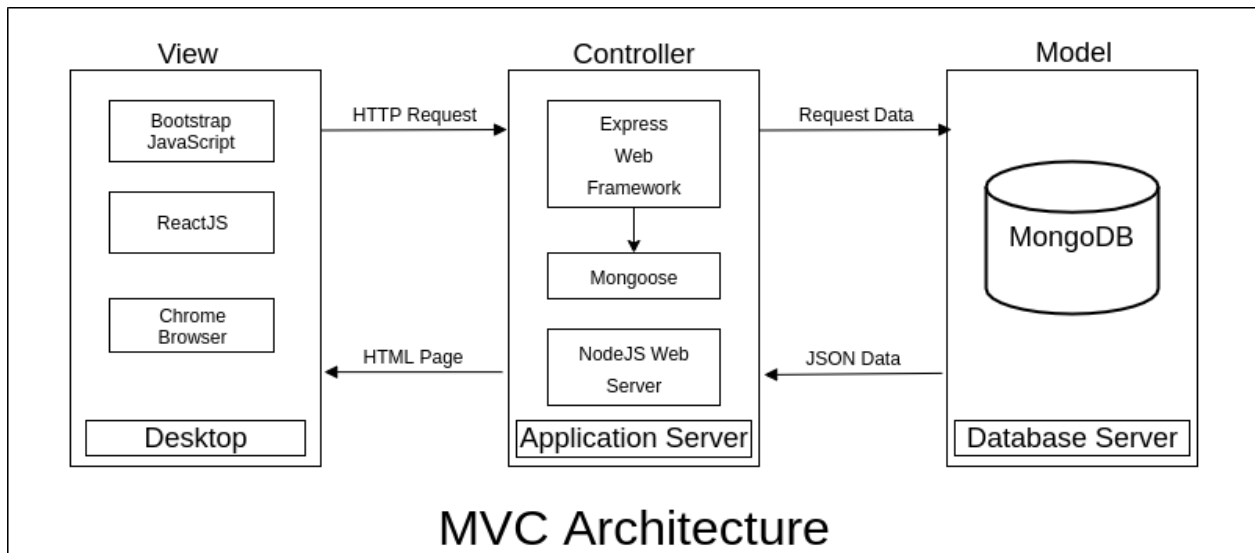
**Figure1: Architectural design of the placement portal**

Figure 1 describes the proposed system of the application developed using MVC Architecture and MERN Stack. Model represents the structure of data, the format and the constraints with which it is stored. It is the database part of the application implemented using MongoDB. View is what is presented to the user. Views utilize the Model and present data in a form in which the user wants. They consist of static and dynamic pages which are rendered or sent to the user when the user requests them. View implemented using ReactJS. Controller controls the requests of the user and then generates appropriate responses which are sent to the viewer. The user interacts with the View, which generates the request, this request will be handled by a controller. The controller renders the appropriate view with the model data as a response. It is implemented using Nodejs, Express and Mongoose.

The system will have different types of accounts for different types of users such as Admin and Students. A profile for each student is created with the necessary credentials for the portal. The system uses MongoDB for database management with Mongoose and it will store the student data securely. The admin will be able to create the student credentials with his/her name and valid mail id. Also a link will be broadcasted to all candidates via an email for them to log in to the portal, which was sent by the admin. This procedure helps the department to keep track of their college students, and the students outside of the college will not be able to access the portal. The student will be able to upload their Resumes and enter their details. Students also have an option of editing their profile.

Admin has the ability to create company details and post jobs. Admin can also view applied students and experience shared by students for a particular company. Admin can view the placed student list and particular student profile with their resume.

**IV. IMPLEMENTATION**

Figure 4 illustrates the login credentials required for the student and admin. Here, if the admin is already logged in then this login page will not appear for the admin. There is only one admin who can be logged in. The students who are created by the admin with the valid college email id can only be logged in. The other students can not be able to access this portal

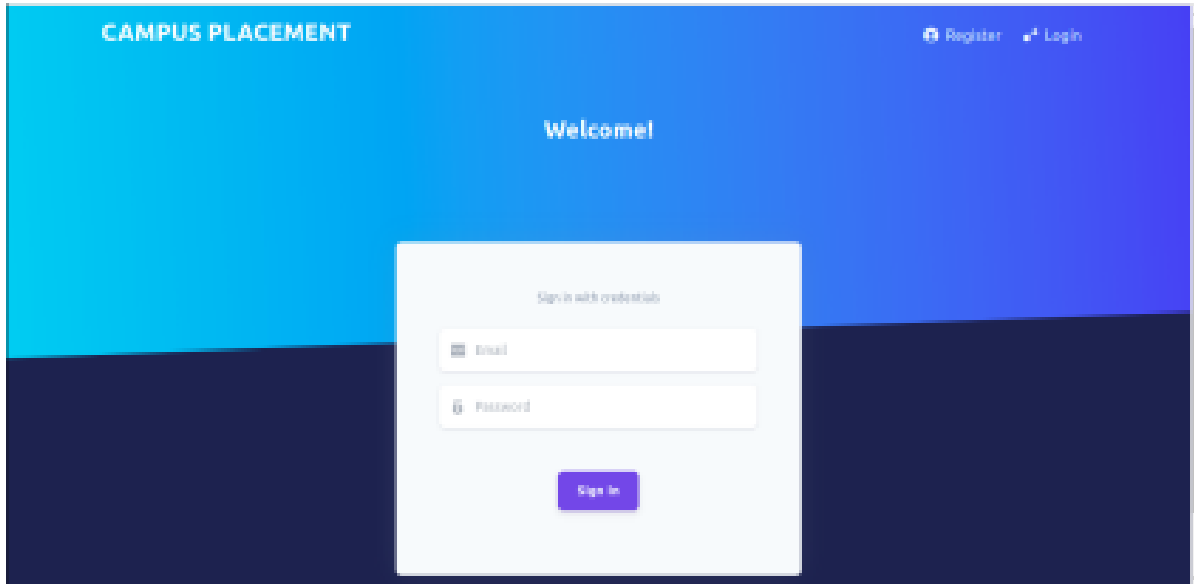


Figure 4: Login page

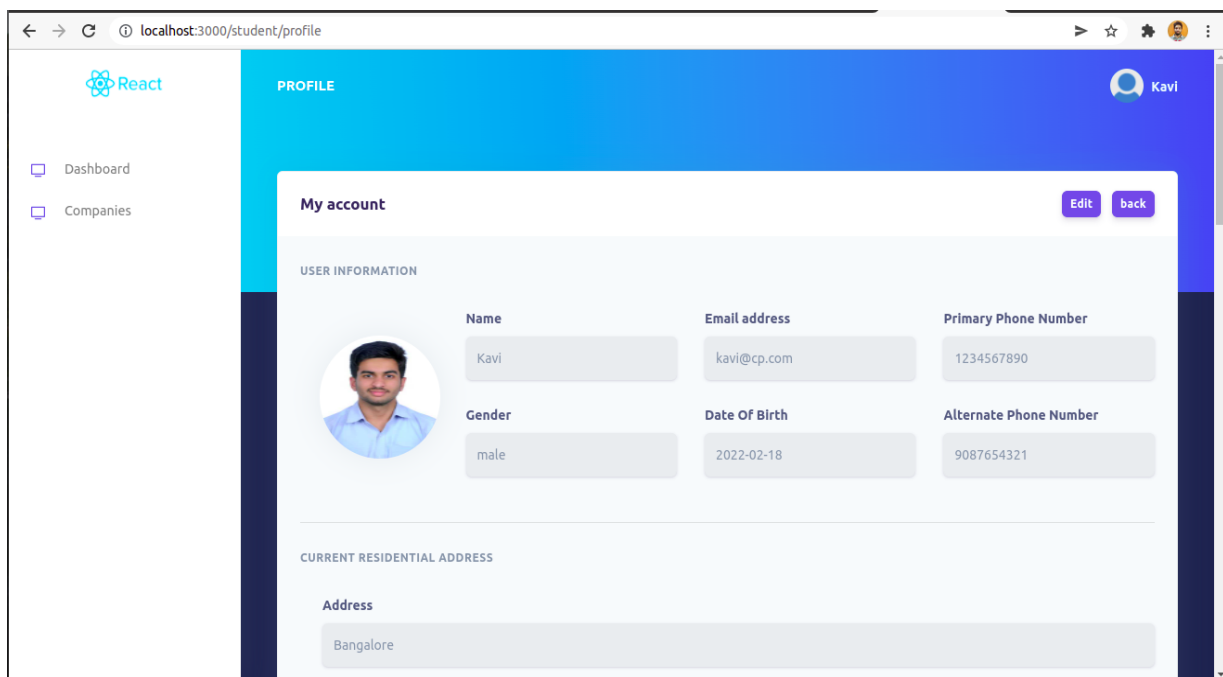
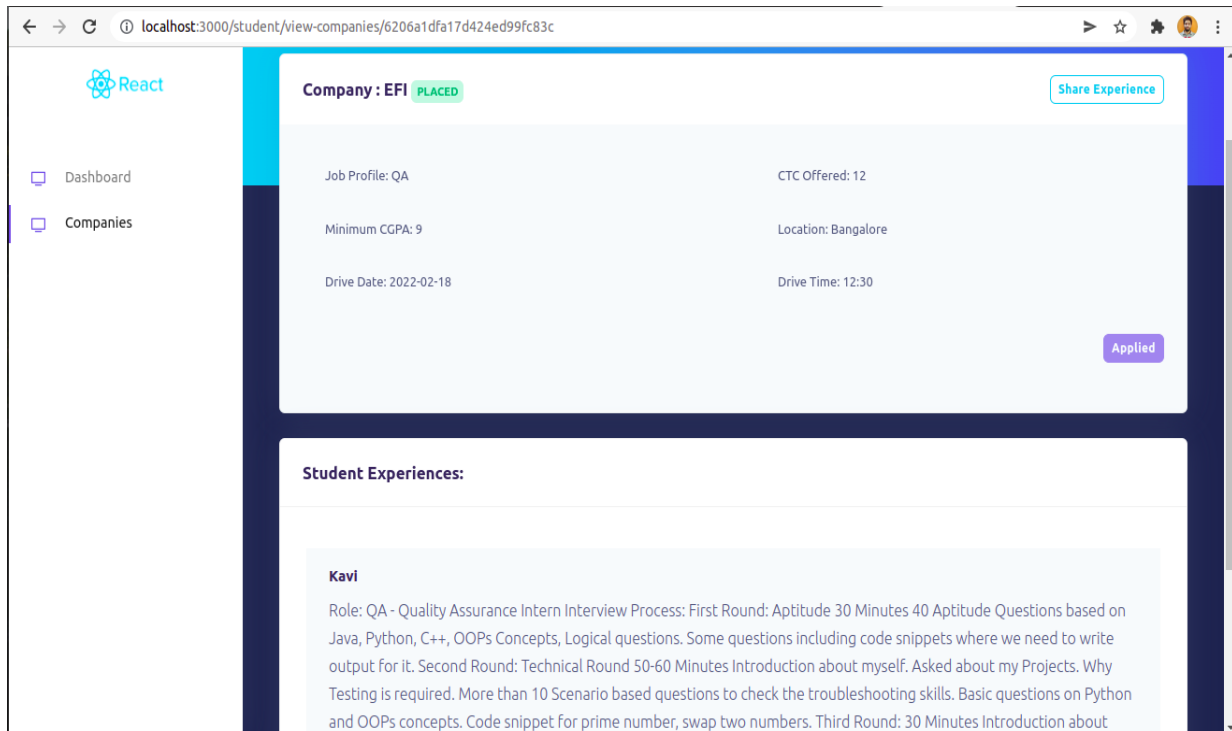


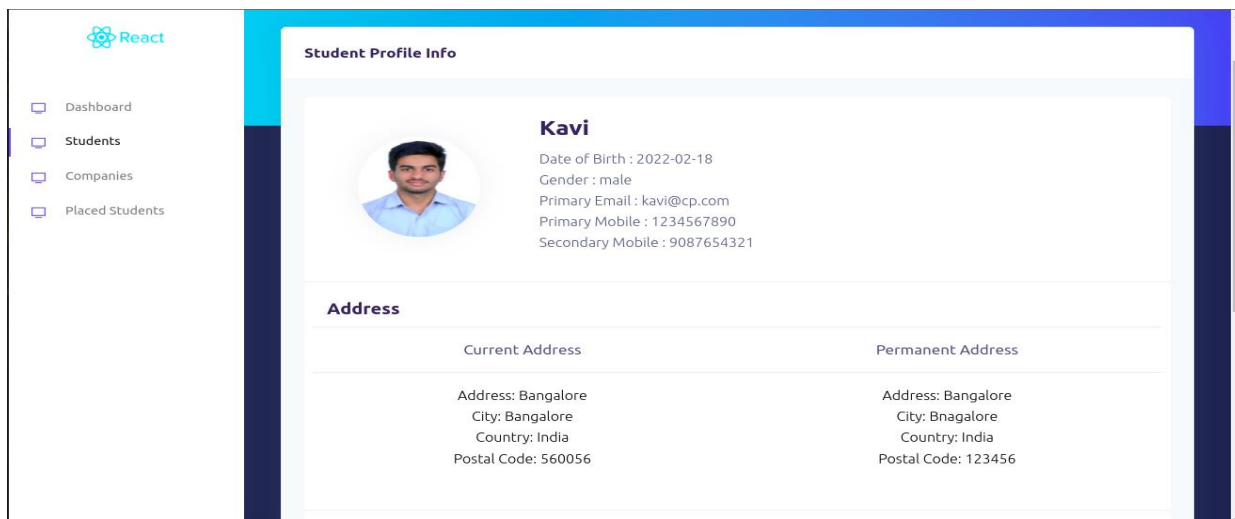
Figure 5: Profile Page

Figure 5 illustrates the students basic details with the academic details and required documents .For the resume uploading , the student can upload the document within 1MB of size. Students also have a opportunity to make the changes whenever is required for their already entered details



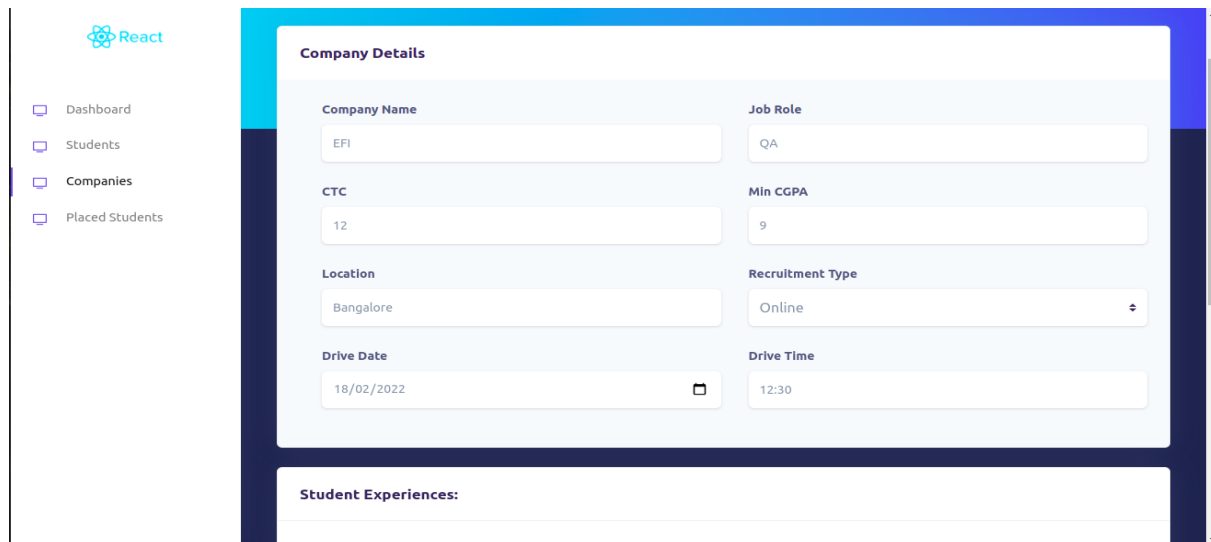
**Figure 6: Company Details and Experience**

Figure 6 represents the posted Company details and experience shared by placed students



**Figure 7: Detailed description of Student**

Figure 7 illustrates the detailed description of the student profile by clicking on the view button of the particular student.



**Figure 8: Company View for Admin**

Figure 8 illustrates the company dashboard for posting. Once the Admin posts the company, that will be visible to the Student. Unless the Admin didn't post the Company, the students were not able to see the particular company details.

## V. CONCLUSION

Maximum work goes manually in the present placement system which makes it take time to avail changes. This includes main problems like searching for the data of students and sorting them along with it. Also, updating student data is a cumbersome job and does not have a method to notify the student in time which makes the management of the placements very difficult. In the proposed system, all of these problems become automated. The registration of the student for an upcoming placement, the addition of a new user, notifying students, sharing information, the privacy of the student, etc is all met. The admin validates the information and gives the student list based on the criteria required which otherwise would have been very difficult to manage. As future enhancements download student lists as csv files, update experience shared, faculty modules and other features are implemented.

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