ASYNCHRONOUS COMMUNICATION BETWEEN MICRO-SERVICES FOR WEB BACKEND AND SINGLE PAGE APPLICATION

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Abstract : Online Training and Placement system automates activities of Training and placement cell and place the best coordination between student. To create reach and strong enough architecture for web application. In india there is recent growth on social media .Therefore there are many users uses the social media at a same time that's why machine get hanged or it's not work properly. It provide student community to use collective intelligence to increase selection ratio and eases out process of creation of management information automatically. For better performance we are uses the load balance web server service. Online Training and Placement focuses on automation of placement cell. We are uses the Company service Or T.P.C Admin for getting the notification about Drives Info., result, various notice to users via popup messaging. Authorizing the CV, communicating about the various job openings to the student community, managing the corporate relationship for inviting them for the placements as well other activities, monitoring the progress of the selection process and communicating with different users.

Keywords **– SMS Integration, Round Robin Algorithm, Hash Function Algorithm, Kubernetes, Docker tool, CV, Coordination, Authentication, Secure.**

I. INTRODUCTION

In today's world everyone is travelling for jobs after Completion of their graduation. It has became need for each and every student but for that they need to travel worldwide in searching of jobs. For simplicity of this whole hectic procedures we had proposed Online Training and Placement System because of earlier system is totally done manually by maintaining records, time consuming and very difficult to maintain coordination between student and companies. It is system in which we are trying to apply load balancing, container, and microservices together. In our proposed you will save time as well as money as its web based application. In T.P.C we are using three micro-services as user service, Company service, and T.P.C Admin service. We can collect information of all college students and fetch them according to criteria given by company. User service is highly secured by using one way encryption with the help of hashing algorithm. We have three modules Admin/Training and Placement Officer (TPO), Student, Company. Admin has full access reserved over the system. Student's can mainly upload their CV and can download resources by Admin/TPO and Company. Company can register and give their criteria for placement. Our proposed system is vital to use in Colleges for better Services in Placement. In this we are using a server nginx as web server.Load balanced is done with the help of docker compose algorithm.

II. IDENTIFY, RESEARCH AND COLLECTIDEA

We realized that the placement department in our college works in silos. On the other hand, management has become a problem for almost every college. Online placement and Service's for different universities which includes Individual engineering colleges, medical colleges and other colleges. Post that, we launched this initiative called online placement and training means, We provide a basic platform for students of different departments or fields to self-development for placement. They can do study about placement and many more companies through this site. We also provide training sessions online for students where they and learn many more programming languages. To cope up with this we developing Online placement and service system which is suitable for all the colleges to manage their all the activities at the time of campusrecruitment.

III. WRITE DOWN YOUR STUDIESANDFINDINGS

Online Training and Placement system automates activities of Training and placement cell and place the best coordination between students. It provides student community to use collective intelligence to increase selection ratio and eases out process of creation of management information automatically. The specific objectives of this Task Force include:

- To prepare students ready for industry employment.

- To provide Training and Employment opportunities for students.
- To provide industry institute interaction

IV. PROPOSED SYSTEM

Admin/TPO Module:

The admin module has an authority to add student and Company to the system and provide their valid id and password. The main user of the admin module is TPO of the college. TPO of the college will able to update details such as college name, college address, establish year, emptied, branch, number of student, email-id, contact number, web address, etc. Admin.

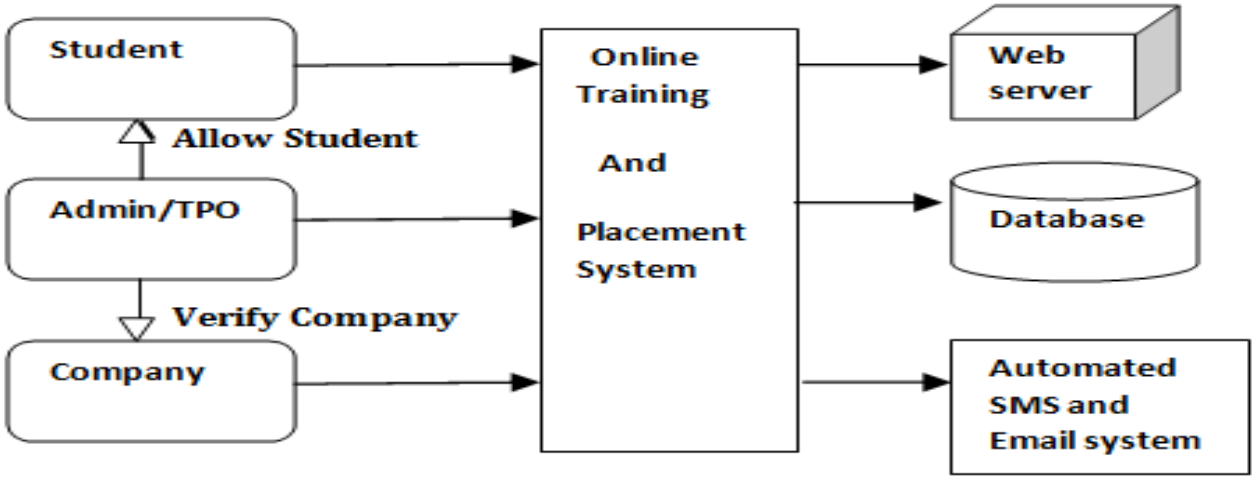

Fig. System Architecture.

TPO module will able to give access through unique PRN of student to the system successfully by entering their PRN as a user_id. Only those student will able to access the system, whose successfully allowed by the admin/TPO module. The various events related to the training and placement program is uploaded to the system by entering subject means event name and text that contain detailed information about event. The user can able to change their password by using change password field.

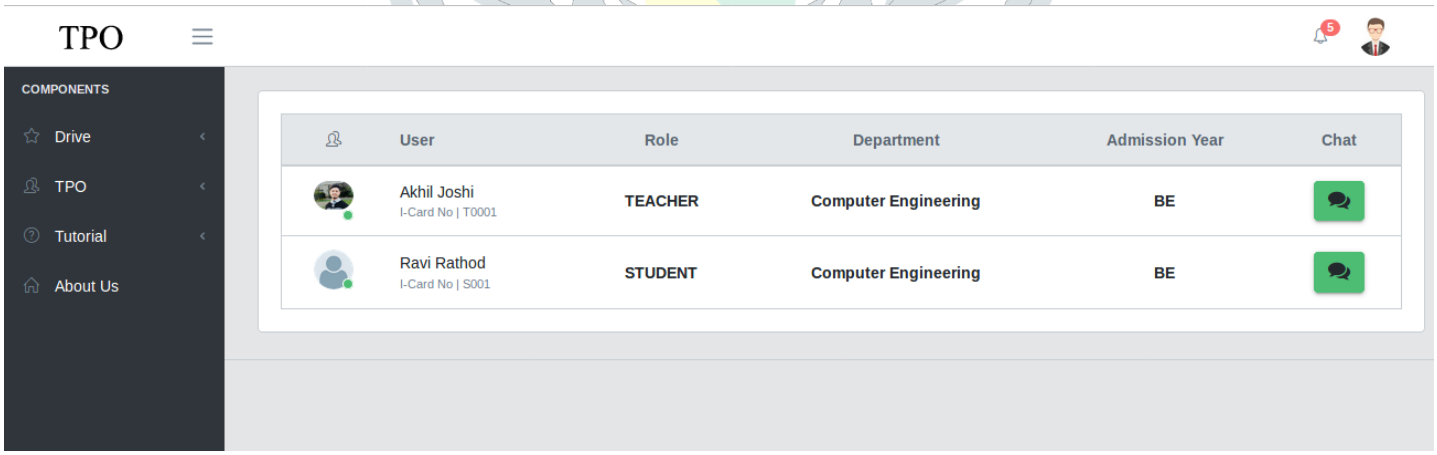

Fig. Admin/TPO Module.

Student Module:

Student module deals with information of student. Student who has added by the administrator to the system successfully can only able to access the system with their valid user name and password provided by the administrator. First student should login into the system by entering PRN as their user name and password. Student can able to update his information such as name, branch, year, aggregate marks, contact number, email, etc. by clicking on Update Details option and also upload their CV.The change password field is used by the student if he needs to change his password as same in the admin module. After completing task successfully by click on the Logout, students can successfully logout from the system.

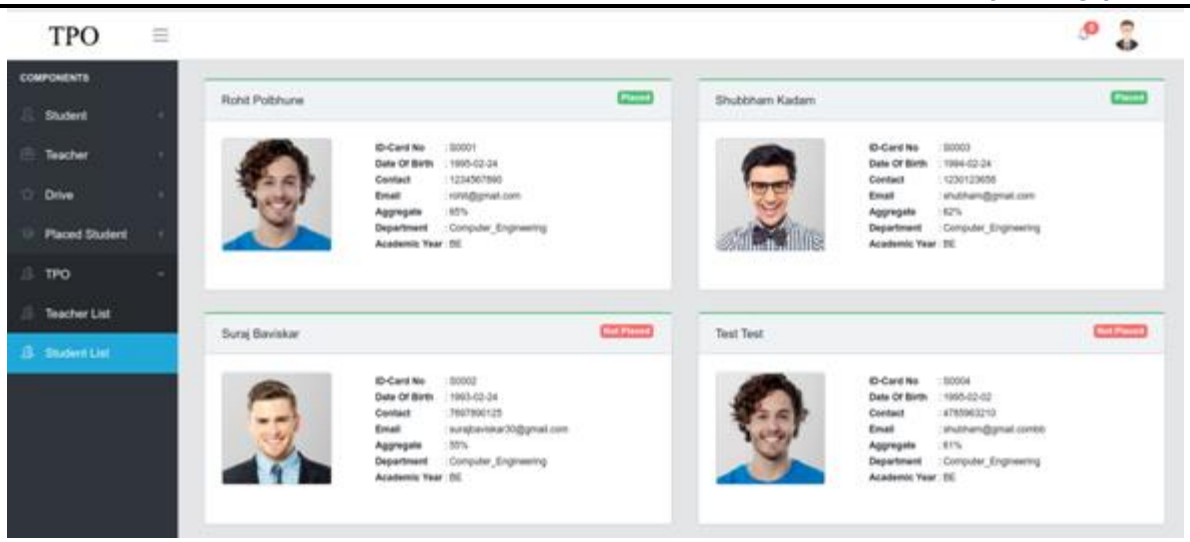

Fig. Student Module.

Teacher Module:

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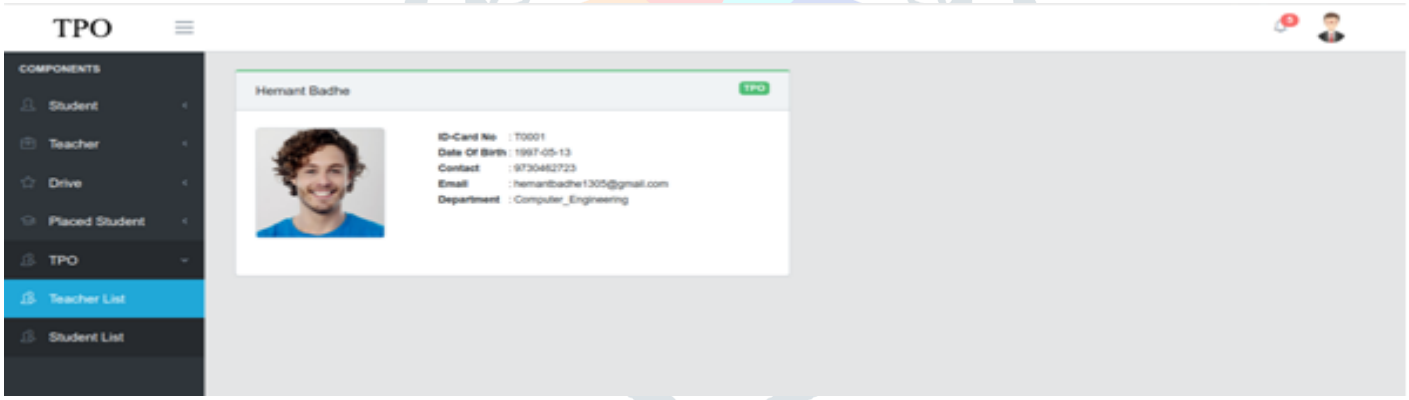

Fig. Teacher Module.

Company Module:

Initially Company must need to login to the system by entering valid user_id and password provided by the administrator module. The recruiter updates his details like his company name, working criteria and information about itself. The Company will see the details about the college posted by the admin module to the system. The Company will also able to see the student details as name, branch, aggregate marks, passed out year etc.Company can change his password if he required by using the change password field. Mailing and messaging option is also available in Company module that contain email /messages received and send by the Admin/TPO.

Docker Tool

Easy and power configuration**:-** This is a key feature of docker that helps us to configure the system easily and faster. We can deploy our code in less time and effort. Increase productivity :- By easing technical configuration and rapid deployment of application.

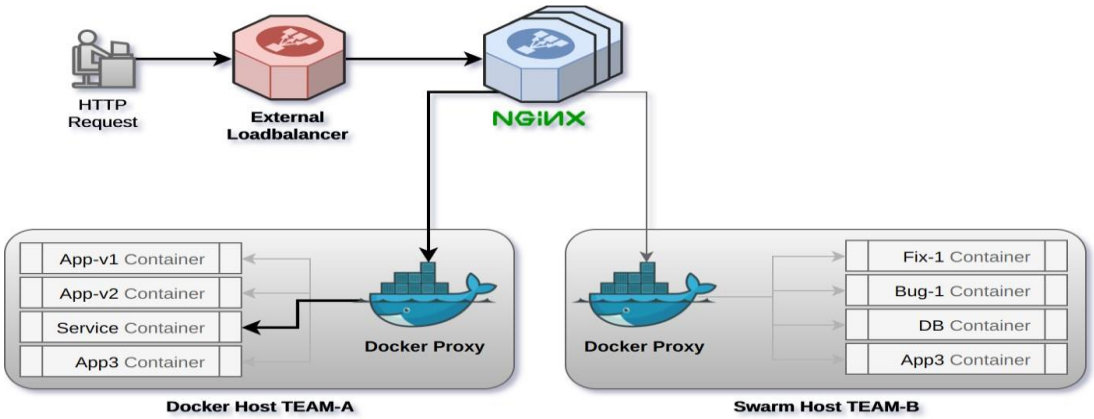

Fig. Docker Tool Architecture.

Services **:-**Services is a list of tasks that lets us specify the state of the container inside a cluster. Security Management**:-** It includes some important commands to the engine like secret inspect, secret create etc.

Ngnix:

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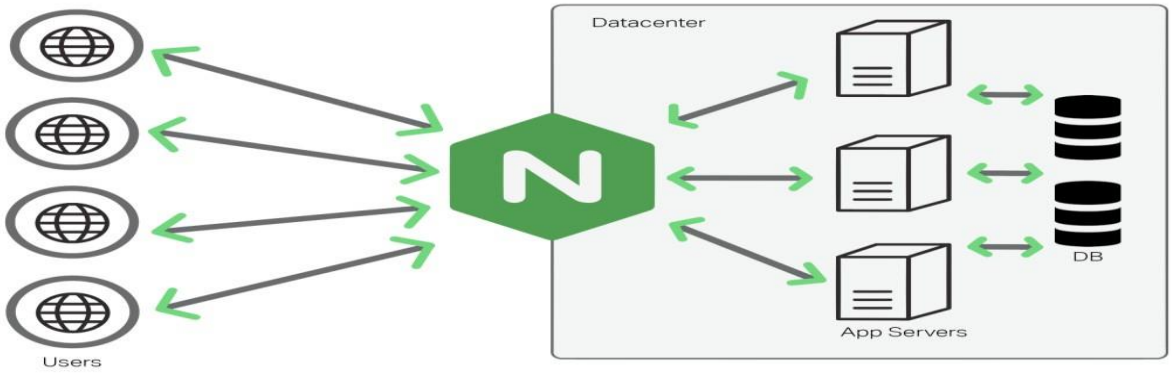

Fig. Ngnix Architecture.

Services **:-**Services is a list of tasks that lets us specify the state of the container inside a cluster.
Security Management**:-** It includes some important commands to the engine like secret inspect, secret create etc.

Microservices

The benefit of decomposing an application into different smaller services is that it improves modularity and makes the application easier to understand, develop, and test. Services in a microservice architecture are independently deployable.

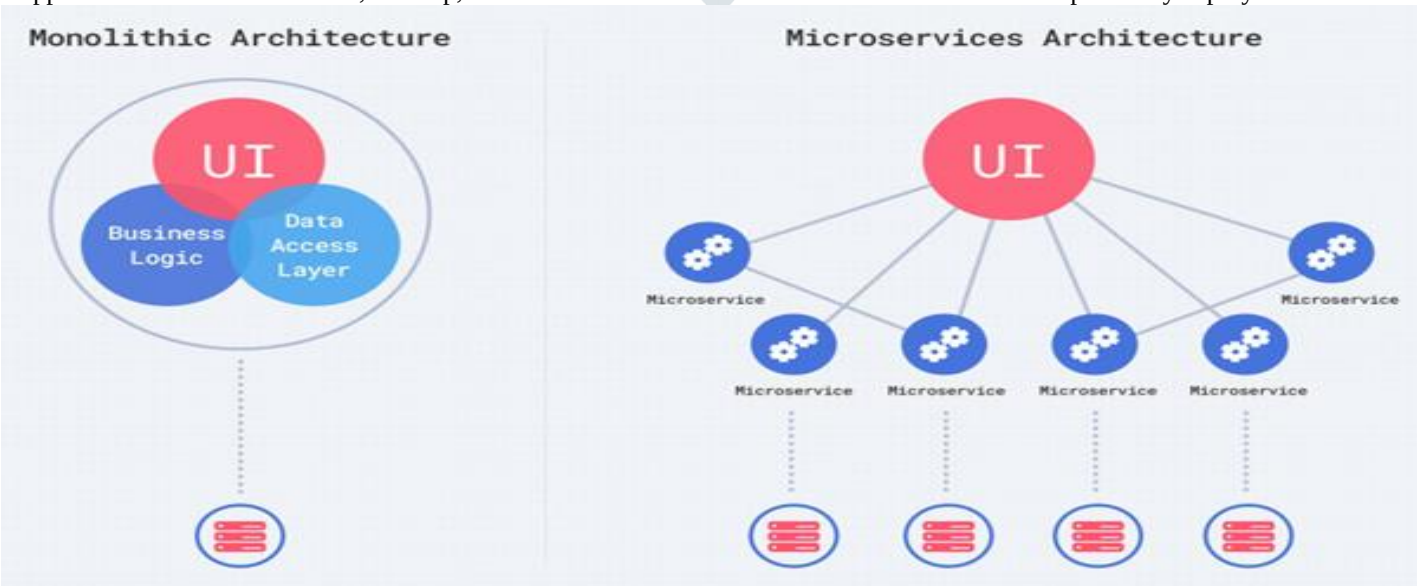

Fig. Microservice Architecture.

The services are easy to replace. Services can be implemented using different Programming Languages, databases, hardware and software environment, depending on what fits best for it.

Monolith means composed all in one piece. The **Monolithic** application describes a single-tiered **software** application in which different components combined into a single program from a single platform. Components can be:

- Authorization—responsible for authorizing a user
- Presentation—responsible for handling HTTP requests and responding with either HTML or JSON/XML (for web services APIs).
- Business logic—the application's business logic.
- Database layer—data access objects responsible for accessing the database.
- Application integration—integration with other services (e.g. via messaging or REST API). Or integration with any other Data sources.
- Notification module—responsible for sending email notifications whenever needed.

Benefits:

- Simple to develop—At the beginning of a project it is much easier to go with Monolithic Architecture.
- Simple to test. For example, you can implement end-to-end testing by simply launching the application and testing the UI with Selenium.
- Simple to deploy. You have to copy the packaged application to a server.
- Simple to scale horizontally by running multiple copies behind a load balancer.

Asynchronous end-to-end calls starting from the view layer to the backend is important in a micro services architecture because there is no guarantee that the containers which receive the calls will handle the response. Micro services architecture has become dominant in technology for building scalable web applications that can be hosted on the cloud. Asynchronous end-to-end calls starting from the view layer to the backend is important in a micro services architecture because there is no guarantee that the containers which receive the calls will handle the response. In addition, Web socket gives the user a new experience to communicate directly with user who open the browsers and can send offers, promotions and chat directly. I think web application should have both sync and asynchronous calls, synchronous calls are used for reading data from logical views and asynchronous calls used for back-end transactions.

V. PROPOSED SYSTEM

- It has company modules in which company directly connected to the students.
- It also have an SMS integration page which gives and instant messaging to notify students as most of don't go through emails.
- It provides industry institute interaction.
- The web server and database server should be protected from hacking, virus etc.
- It is easy to use and it has only two jobs continue the list of students and their credit records sustain the company details.
- Notification sent through server directly to student.

VI. GET PEERREVIEWED

At the time of recruitment or off campus placement or on campus placement, good management is possible through this, also students or teachers can save their time and can utilize for other tasks. We face many difficulties when we have to arrange campus in our institute but this app will solve this problem. We don't have to worry about offline activities. Its digital world so this application provides digital way to learning, management activities.

VII. CONCLUSION

Our proposed system work according to IEEE paper. It can successfully login authorized person to system and register them. In our system admin can check the Student list those eligible according to criteria given by the Company and notify them instantly and update the information anytime successfully. Our system is secure and User-friendly for all of three modules.

VIII. ACKNOWLEDGMENT

It is our advantage to acknowledge with deep sense of gratitude to our project guide Prof.Amol G. Baviskar and our H.O.D Dr. G.M. Bhandari whose supervision, inspiration and valuable discussion has helped us to complete our project. Their guidance proved to be the most valuable to overcome all the complications in the fulfillment of this mega project on **"**Asynchronous communication between micro-services for web backend and single page application**"**. We are thankful to Principal Dr. T. K. Nagraj for direct or indirect help in the completion of this project. Last but not least, this acknowledgement would be incomplete without rendering our sincere gratitude to all those who have helped us in the completion of this project.

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