



## PALISADE-Social Media Website

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# “Palisade”- A Student Friendly Social Media Website

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## Abstract:

In this application, we have developed a website where users can sign up and login and be able to share their thoughts and events at their colleges or companies and experience at interviews or etc and also like, comment on respective posts, and also user can able to follow or unfollow a user to get updates from different users. We feel very difficult to find blood donors at difficult times, this website provides a list of blood donors with their details such that it will be very helpful in finding blood donors. It is very helpful to people who require blood urgently. There is a good number of donors but we find it difficult to find them. This website solves this issue. We can create chat rooms or join chat rooms and discuss things with people around the world in this application

## Keywords:

Reactjs-frontend, Restfulapis, posts, blood-donors, Room-chat, nodejs-backend, Mongodb, Expressjs-routing

## 1. Introduction:

Now-a-days Social media is a tool that became more popular and even became a part of people's life as every person who knows something about the present technology is maintaining Social media handle. Due to its user-friendly features the people are even more attracted to use them. There were many Social media platforms like linkedin, facebook, instagram, whatsapp which were making people to connect with others in an virtual environment. If we need to say a single sentence to describe Social media then we can say that the entire world was in our hand at just a single click away. One of the foremost dominant users of social media are the youth. There were many other negative and disadvantages of social media usage but it was very less compared to the positive aspects.

When we consider the positive things in this field we can observe many advantages. The first and the most prior one was education. By social media platforms we can learn many things. All the aspects that we need were just a click away. Even we can find live lecture in social media example where an university professor was giving a lecture by sitting in his/her office and the students or the people who are interested in listening it can easily listen by just sitting at their individual residences.

Even when we consider the current situation of decrease in newspaper reading, more people left the newspaper reading due to the high usage of social media platforms as it gives the news that was happening in the world instantly which cannot make the people wait for the next day to know what actually happened at that situation or place.

Social media made people not to think that distance isn't any problem because due to social media it made people connect with each other that they were very close with. It made people to always connect with their closer ones , relatives and friends for ever even if they were not near to them.

When compared to the employees or elders , University and College students are the most users that are using Social media platforms more effectively. Because social media is the only platform which gives entertainment, facts, study and many other information they need in an efficient manner and at a single place .They can observe their role model how he/she was leading their lifestyle in their official social media handles , so these type of many similar things are attracting the students and the youth to these type platforms. Social media can also be used as an biggest asset for learning something from others and getting motivated .These types of things can help people to socialize in society and help in choosing the right paths in their life by seeing their role models.

Social media can even make new bondings with other people and they can connect with their stream experts and start engaging with them to learn something new or to clarify their doubts .

Now-a-days social media are also used as a marketing platform for many products which helps the consumers to reach their product directly to the customers. This way these social media platforms are even helping some of the marketing agents to get jobs.

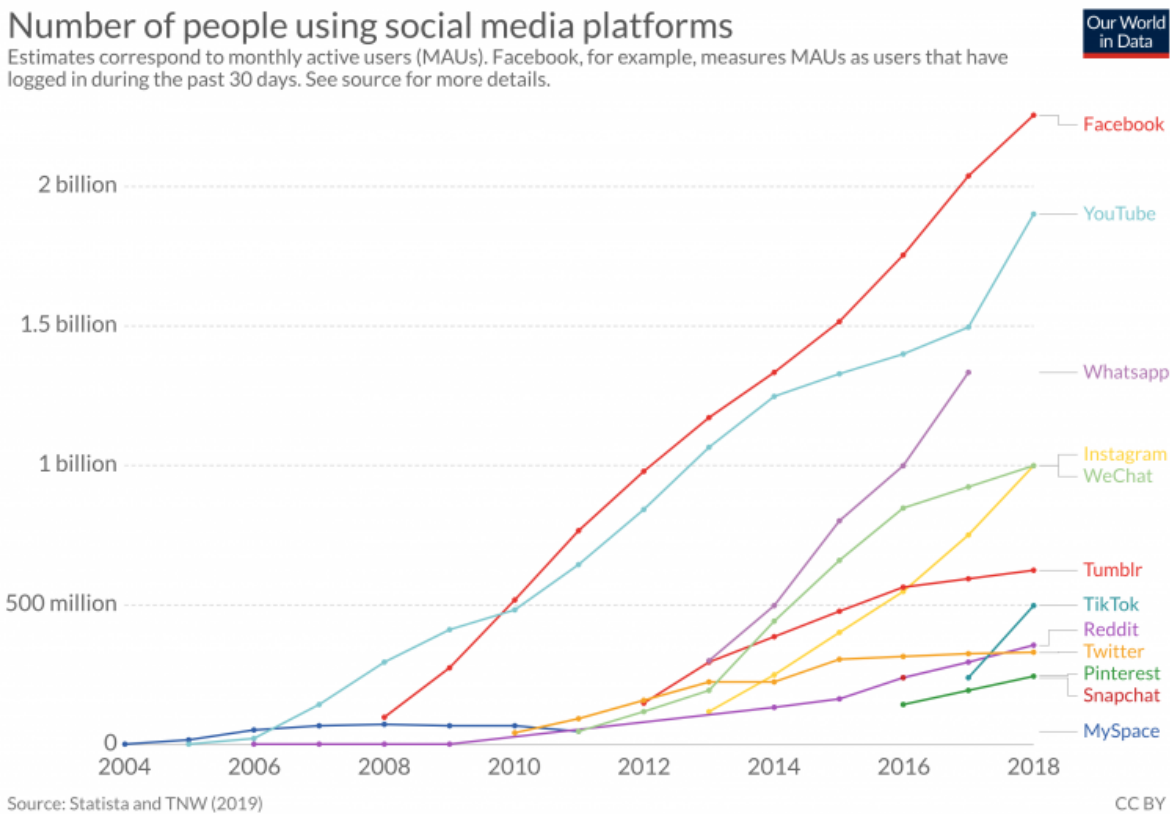
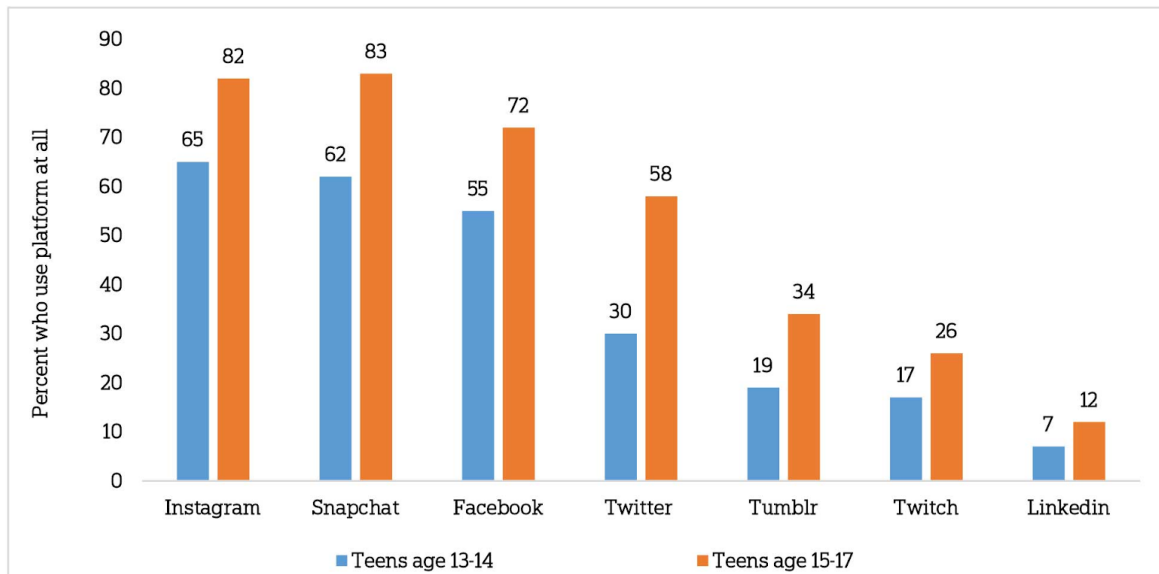


Fig-1.1: Count of people using social-media

In Fig-1.1, it describes the count of people using social-media concerning years. we can see most of the people uses Facebook because teens, adults, old age people get attracted and spend most of the heir time using Facebook. In the list next comes, YouTube and then, WhatsApp, Instagram, etc. we can observe the day by day users of social media getting increased from the above comparison.

Older teens are more active on social media, using each of these platforms more than their younger counterparts.



Question: How often do you use the following, if at all?  
 Source: AP-NORC Teen Survey December 2016. n=790 with teenagers age 13-17 nationwide

Fig-1.2: comparison of using of social-media concerning age

The Fig-1.2 represents the different age groups on the different social media platforms. By looking above, the bar chart we can say older teens are more active on social media compared to young ones. Now, the question that is in everyone's mind, does social media harm students? If Yes, then how to make a social media platform completely advantageous to Students.

## 2. Related study:

In the present pandemic, students are facing a lot of difficulties in discussing with their friends regarding their assignments, tasks, projects, and many more. We have many platforms for attending classes online and many applications for chatting and video calling with friends and we also have many platforms like Instagram, Facebook, LinkedIn for knowing the updates regarding many things including entertainment, news, sports, and so on. But we don't have a particular dedicated platform for discussing with our friends regarding our assignments and our tasks are given in our academics and posts for different college events, experiences and placements events, etc. We have specially dedicated platforms for jobs, careers, entertainment, chatting, online classes but we don't have one for students' purposes like knowing about events, placements, exams, hackathons happening inside or outside of their institute.

Some applications are specific for sharing posts related to fun or jobs etc. like Instagram, Facebook, LinkedIn for knowing the updates regarding many things including entertainment, news, sports. One can only share their posts related to the fun but, not related to college events, experiences at interviews, etc. These drawbacks made us think and come up with a new idea by giving them a separate platform for having all of these things

### 3. Security in Social Media:

Whenever a social media site is developed people highly concerns over it security. Why because this is one prime platform where it deals mostly with people database. We have lot of security breaches in a centralized server. In past there are security compromise incidents that happened with a supervisory control systems as discussed in [2, 3, 4] The major reason to review the security concerns are just because if this is launched in real time exactly the security protocol used for the supervisory system can be implemented with the centralized server too.[5,6] A small analysis graph shown in the fig 3 clarify how bad the security problems are with the current social sites and that should be uprooted in this system once its launched in the future.[7]

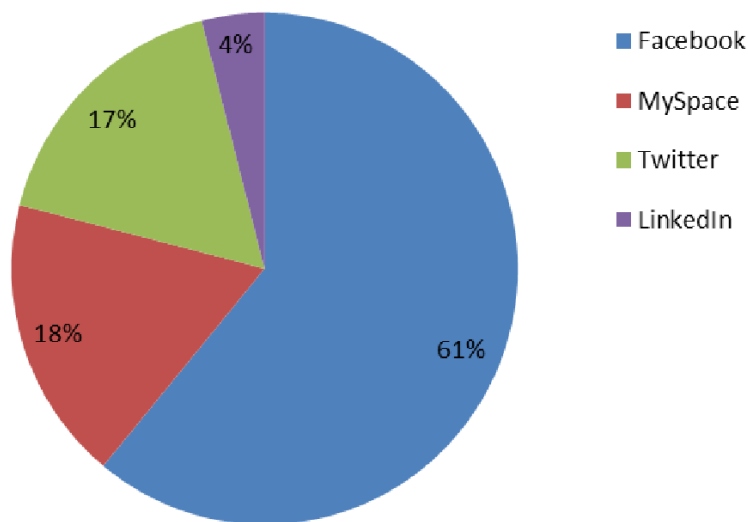


Fig-3: Most security breaches in current social media platforms

### 4. Proposed Model:

Due to those above-mentioned drawbacks here we proposed a new aged web platform for students for knowing and having awareness of the things that go in their organization and also outside their organization.

Here we came up with a new idea by designing a new aged fully secured online web platform to log in securely and start chatting, posting, likes, shares, discussing with friends, and many more. We can even post about the events happening in the organization and also can communicate about placements in

the college with their friends and alumni which helps the students make the right decision about their future.

We introduced a new tool that allows users to discuss their needs and their tasks by entering into a room chat where the room will be created once the user creates and other people can directly join the room and start discussing. Here the room chat will be automatically destroyed once the room members exit the room. This helps in storage management and also increases the security for the users regarding fear of accessing their information by others.

On our platform users can share their experiences like what he/she did in interviews or events etc. and also college events, useful stuff on our website. As this is a student-friendly website, many students can search and find different events, experiences, thoughts on our website which will be helpful for a student in his/her career.

Here we also proposed a new feature by adding the user's willingness for donating their blood or not. While signing up to the platform using his/her details like name, mail, college, and password, he/she able to login to his profile and then using the edit option he/she can able to enter and edit details like blood group, interested to donate blood or not, interests of the user, experience in his/her career, if the user chooses to donate his/her blood then it will automatically update the user's details in a separate window and the other users who are in need can contact the person directly without any miscommunication. In this way, our platform can also help behave as an intermediary for the people who require blood. On the blood donor page in our application, all users can find the name, blood group, email, mobile number of the blood donors. It is very difficult to find a blood group of a patient in urgent situations and our platforms help in finding blood donors in one place and this is very useful to society.

#### **4.1 Blood-donors page:**

By using our Platform, we can find users who are interested in donating blood. When users logged on our website and can edit their profile such that if a user ticks donate blood then, his/her info gets visible on the blood-donors page as below. We feel difficult to find blood donors at hard times. This helps in saving a life by helping to find blood donors.

### **5. Experimental Setup:**

Our website is done using technologies like reactjs, MongoDB, expressjs,nodejs. On our website, we need to fetch different posts which users uploaded using restful APIs. Reactjs is a library which used to build pages using components that are very flexible to use and we used mongodb for storing all details of users and posts and express and node js as the server for running our application. The frontend of our website is done by Reactjs, server by Nodejs, and mongodb for database. State for our client is managed using redux-thunk which is the middleware used with Reactjs. We used Github for maintaining code repo and used different ides for developing an application.

In our project repo, at root we have written a server folder, build using express and node js for running the server and in the client, we have set up the Reactjs repo structure for developing the

client-side for our application. Database connections are given at the server-side and ORM are placed in the model folder in our code repo. We use Cloudflare for storing images and mongodb atlas for storing posts and user details in the database for our application.

We build our application using SDLC-agile development methodology because we are going to build our app and according to changes needed in our app in the first version that is going to be changed in the next version of our app release. Every step that we perform involves a team working regularly on all SDLC methods like planning, requirement analysis, design, coding, unit testing, and acceptance testing to improve our project efficiency and error free .

The major goal of our application is to set up a secure login and easy to understand website.so, we used to generate token whenever the login and that token gets expired after a certain time and secured authentication and middleware are set at the backend such that, user can access what he/she only can. If a user is valid as per records in the database i.e MongoDB then, only the user gets access to login, or else the server responds with an error saying invalid email/password. When a user gets logged in then, immediately action part in reactjs executes and fetches all the posts for that particular user from the server. Restful APIs are set using expressjs server and fetch, Axios is used for communicating information by doing CRUD operations between client and server. This is how our application runs and also ORM for user and posts are set in a server such that for any create a request that passes through ORD to validate the schema collection of the database. Users can follow or unfollow other users such that, he can view followers posts in followers posts, this is how we arranged things in our application. This is how authentication is done.

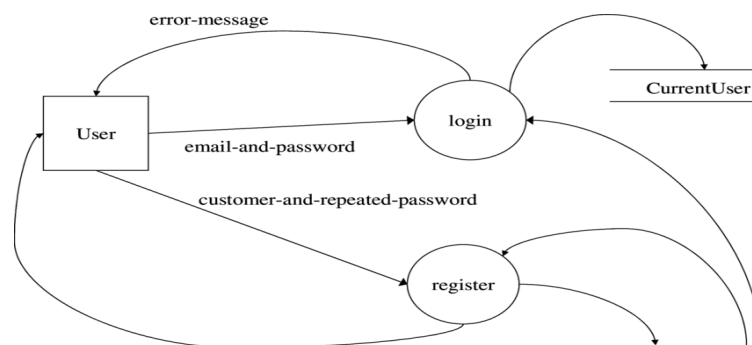


Fig-5.1: Flow-graph of authentication on our website

Fig 5.1 describes the authentication flow graph on our website. When the user login with the wrong credentials, he won't get logged in. if the user doesn't have an account on our website can get his account by signup and can log in successfully with his/her credentials. The above figure completely explains the authentication part on our website.

Hardware Requirements:-

The Hardware required to run this project is:

1 GB RAM.

1 CPU Core.  
24 GB SSD Storage.  
500 GB HDD.

## 5.1 The architecture of the Project:-

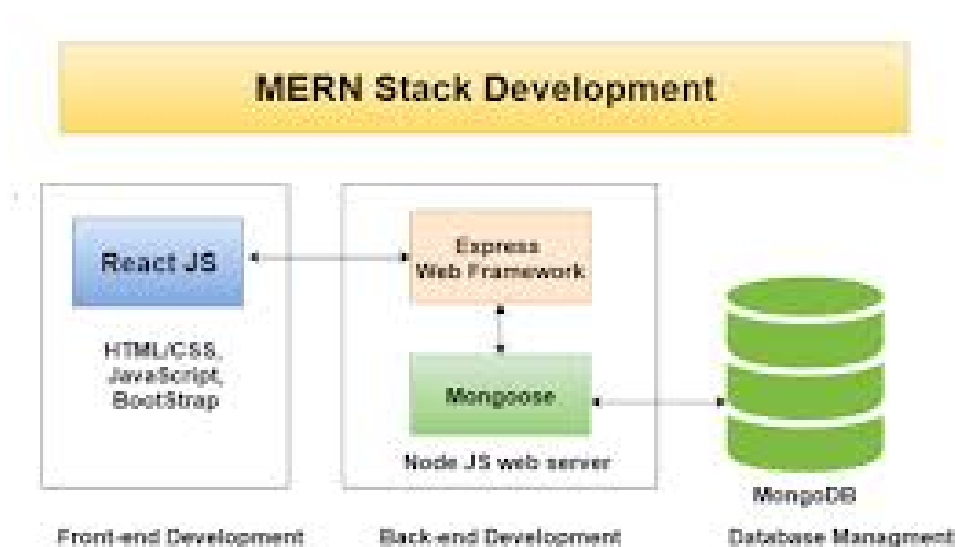


Fig-5.1: Architectural-diagram of MERN stack

This architecture shows in fig 5.1, when a user visits our website, then he/she must sign up and login to our website, and state management is done through reactjs and restful APIs are passed from frontend to backend using Axios or fetch calls. Then, backend access database using mongoose and creates a new profile for the user while signup and validates credentials while login. This is how the full stack app works as shown above architectural diagram. Using MERN in the project was an foremost advantage for developers as all the code will be written in Javascript language which was very easy to understand if there were errors. Javascript is a programming language where it can be used for both client and server side which makes developers more convenient that they won't look for other programming tools for both server and client separately because using one language rather than two makes developers very helpful.

For developing the project with multiple programming languages we should have knowledge about how to interface them together which makes more complexity. But if we use Javascript ,we only need to be expertised/skilled in Javascript and Json.So at the end using Javascript was more convenient and easy for developing good web applications other than using multiple languages.



## **How to run our application and use it:-**

These are the steps done to run the MERN stack app:

1. Run both client and server
2. Open local host with the specified port to access frontend. Users can sign up to our website and that data gets stored in mongodb.
3. Using users credentials after signup can log in to the website and can view other users posts and like them, comment them if the user shows interests in that post
4. User can follow or unfollow users or organizations, such that, if a user follows a person or the organization, he gets all updates of followed users on a separate following page. This is more flexible and easy to access the following posts.
5. User can create posts by going to create posts on our website. After successfully creating a post, every other user can see his/her post.
6. User can edit his/her profile by mentioning activities, experiences, goals, blood group, and willing to donate blood or not. If the user shows willing to donate blood, then his/her name gets visible on the blood donor's page on our website.
7. Users can find blood-donors by visiting the blood-donors page on our website. It is a very helpful and social cause that helps in saving one's life.
8. Users can create or join group chats on our website and start a conversation about the things which they feel they need to discuss.

## **6. Result Analysis:**

Every user can sign up and Login to our website and able to access different posts from different users and can able to follow a particular user or page for more updates and users can able to create a Chat Room or enter into existing Chat Room such that, different users can chat about that particular Chat Room info. Blood donors play a crucial role in saving a life so, it's difficult to find a blood group in hard times.so, we added a page where users of our application, who are interested in donating blood are visible and if he/she needs blood they can immediately find blood donors according to location, and it's very helpful in saving a life.

We also provide small features like liking a post, commenting on a post, or editing the post if he/she has privileges. If every student uses this application then, we can build a community of students, this will be helpful in finding different opportunities in posts and chatting about topics in the Room chat and blood donors (users who are interested in donating blood).

In general, we have used the reactjs tool for developing our website which makes our source code into components. Having huge code files also may lead to confusion for both users who access the code and the developers. So having them as small components will help us to a better understanding of the platform and also for integrating the other components/features directly without affecting previous. It even helps in distributing the workload/workspace with others by just distributing the work among others.

## 7. Conclusion & Future Scope:

The main idea of the project is to connect students and other people with their colleges or with their friends directly by contacting them in a secured platform and help them in discussing various things that they do together or individually. And also this platform contains a feature that can be used by the users for donating blood or if they need blood. This can be done by enabling that the user was willing to donate blood by entering his/her blood group in the column given and at the back, the database will automatically separate and creates a separate window with the full details of the donor provided during their signup and the people in need can contact them directly without any third person and any delay. We also introduced ROOM CHATS where the users can communicate with each other and when they leave the group the chat that they have communicated will be automatically erased and lost, this will help in increasing our security and give the users their privacy. This platform will be unique to the platform that was already present and can be user friendly, users can easily adopt this platform.

As our project PALISADE was designed using reactjs components and backend using nodejs and expressjs and we are using mongodb for database, it will be very helpful and easy to update any new feature to the source as a component and integrate to the main site directly. Like this is a student-friendly application such that, many students are willing to know about different events conducted by different colleges or companies and off-campus drives, etc. But, because of a lack of information they are not able to attend such events.so, our website will be a platform where every individual can post their posts which are useful and helpful to others in finding such great opportunities. We can develop a mobile application for the same in the future with more advanced features and tools and also can add more features like blood donation.

## References:

- [1]. Valentin Bojinov, David Herron, Diogo Resende,'Node.js Complete Reference Guide',Released December 2018, Publisher(s): Packt Publishing, ISBN: 9781789952117
- [2]. Express.js in Action, Manning Publications, April 2016
- [3]. Thanh X. Tran,'MongoDB Tutorial, A basic guide with step-by-step instructions for the complete beginner', Nov 2019.
- [4]. S.Shitharth, Masood Shaik, Sirajudeen, Sangeetha, 'Mining of intrusion attack in SCADA network using clustering and genetically seeded flora based optimal classification algorithm', Information Security, IET, vol. 14, Issue 1, 2019, pp. 1-11
- [5]. S.Shitharth, Masood Shaik, Sirajudeen, Sangeetha, 'Integrated Probability relevancy classification (IPRC) for IDS in SCADA', Design Framework for wireless network, Lecture notes in network and systems, Springer , vol. 82, Issue 1, 2019, pp. 41-64
- [6]. Devi, S.Shitharth, 'An Appraisal over Intrusion Detection systems in cloud computing security attacks', 2nd International Conference on Innovative Mechanisms for Industry applications, ICIMIA -2020, Conference Proceedings, pp. 122
- [7]. Shitharth, & D.Prince Winston, D 2017, 'An Enhanced Optimization algorithm for Intrusion Detection in SCADA Network', Journal of Computers and Security, Elsevier, vol. 70, pp. 16-26.
- [8]. Socket.IO Cookbook, by Tyson Cadenhead, Released October 2015, Publisher(s): Packt Publishing, ISBN: 9781785880865
- [9] Untangled, by Ludovico Fischer,'React for Real, Front-End Code', 2017

[10] Ilya Gelman and Boris Dinkevich, 'The Complete Redux Book (2nd edition)'.