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Online Blogging Web Application for Communication

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Abstract- As a college student we came up with the idea of developing a online blogging system where new student can gain knowledge about the environment, progress and culture of the college. The purpose of the project is to connect the fresher to seniors and alumnies to provide information about internship, webinar, projects, coding challenges and finally placement from the alumnies desk. The data of students are well protected for personal use. Online Blogging System will be very helpful, flexible and easy to use and is designed for the benefit of the students. Typically, they are personal journals which are published online, and are frequently updated with links to similar and related topics, often from other bloggers. This interconnection of blogs is known as 'the blogosphere'.

Keywords – MongoDB Atlas, Capped Collections, Transaction, Load Balancing

I. INTRODUCTION

A blog is a frequently updated online personal journal or diary. It is a place to express yourself to the world. A place to share your thoughts and your passions. Really, it's anything you want it to be. For our purposes we'll say that a blog is your own website that you are going to update on an ongoing basis. Blog is a short form for the word weblog and the two words are used interchangeably. Blogs range from the personal to the political, and can focus on one narrow subject or a whole range of subjects are refer in [1-15]. It can also play animportant role in student's life. It can help in the promotion of critical and analytical thinking, increased access and exposure to quality content and a combination of solitary and social interactions with peers. Currently students in schools or colleges are unable to express their ideas, their talent or anything that can expressed for some benefits for everyone. The reason is, schools or colleges don't have any proper medium to accomplish it. But proposed online blogging system can help in accomplish these things and even much more. We will cover the objectivesof this online blogging system in next section. Internet has become reality and usage of internet become very much popular and there is tremendous increase of internet in all over the world for educational purpose. The Online Blogging System is easy to use, full-featured and much more.
The rest of the paper is organized as follows. Different tools and technologies are explained in section II. Purpose of the blog is presented in section III. Development process and application in section IV. Concluding remarks are given in section V.

II. DIFFERENT TOOLS AND TECHNOLOGY

A. React JS--

React is a JavaScript library for building user interfaces.
React has been designed from the start for gradual adoption, and it can use as little or as much react as needed.
Whether you want to get a taste of React, add some interactivity to a simple HTML page, or start a complex
React-powered app, the links in this section willhelp you get started.

B. Transition Tracing—

Currently, React has two profiling tools. The original Profiler shows an overview of all the commits in a profiling session. For each commit, it also shows all components that rendered and the amount of time it took for them to render. We also have a beta version of a Timeline Profiler introduced in React 18 that shows when components schedule updates and when Reactworks on these updates. Both of these profilers help developers identify performance problemsin their code.

C. Threading—

A thread pool handles the execution of parallel tasks in Node.js. The main thread function call posts tasks to the

shared task queue, which threads in the thread pool pulland execute. Inherently non-blocking system functions such as networking translate tokernel-side non-blocking sockets, while inherently blocking system functions such as file I/O run in a blocking way on their own threads. When a thread in the thread pool completes a task, it informs the main thread of this, which in turn, wakes up and executes the registered callback.

D. MongoDB —
MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server Side PublicLicense (SSPL) which is deemed non-free by several distributions.

E. Load Balancing —
MongoDB scales horizontally using shading. The user chooses a shard key, which determines how the data in a collection will be distributed. The data is split into ranges (based on the shard key) and distributed across multiple shards. (A shard is a master with one or more replicas.) Alternatively, the shard key can be hashed to map to a shard enabling an even data distribution. MongoDB can run over multiple servers, balancing the load or duplicating data to keepthe system up and running in case of hardware failure.

F. Capped Collections —
MongoDB supports fixed-size collections called capped collections. This type of collection maintains insertion order and, once the specified size has been reached,behaves like a circular queue.

III. PURPOSE AND OBJECTIVES OF THE BLOGG

The Online Blogging System will allow the users to publish the writings, videos, images or audios if he/she should have credentials to login. The mainusers of this project are students, teachers and administrators.
From an end-user perspective, the Online Blogging System projectconsists of following functional elements:
Dashboard: It is the default page of the site and we can access thisoption from left hand side anytime. All links are available on this page. We can also find the Quick Draft and Activity section here.
Posts: Here we can see all the published contents by clicking on "AllPosts" option and we can also publish new content by "Add New" option.
Media: We can see the uploaded media items (videos, images, audios) by clicking on "Library" option and we can also add newmedia item from local system with the help of "Add New" button.
Comments: In this section, we can check that who, when and what has beencommented.
Profile: In this section, we can personalize our profile like PasswordChange, Profile Picture Change, Display Name, Nickname etc
Tools: This option is having additional plugging to install, whichmay enhance the current functionality.
Collapse: We can collapse the menu with this option.
Home Button: It is located at the top left portion and we can usethis button to check the timeline where we can view the contents published byeveryone.

The basic objective of blogging is:
To promote collaboration between students and teachers. Mutual learning between students and teachers.
To have fun. Yes, you heard it right. It is wonderful when students think that they are having so much fun.
To increase motivation for reading and writing.
To establish a home-school or home-college connection in order to make the parents/guardians aware about the happenings or events. Parents with internet access can check their child's work and writings.
To showcase the student's accomplishments, talents, ideas oranything that they can't express.
To give a voice to students.
To give students a global and authentic audience – no longer working for a teacher who checks.
To create a digital portfolio of public.
To create a cross-curricular environment.
To develop critical thinking skills.
Work is permanently stored, easily accessed and valuable comparisons can bemade over time for assessment and evaluation purpose.

IV. DEVELOPMENT PROCESS OF APPLICATION

We made the frontend part using the React+redux feature along with we willuse the styled components or the CSS part as per the requirements of the feature.
We joined client with the backend with api using react-context-api and fetch itusing axios and hooks.
We made the frontend part using the React+redux architecture along with weused the styled components orthe CSS part as per the requirements of the feature. Implemented Node.js and Express.js for the Rest-API part along withMongoDB and Potman and fetch the data using axios and hooks.
CRUD functionality implemented for the posts and Database is dynamic innature in real-time.

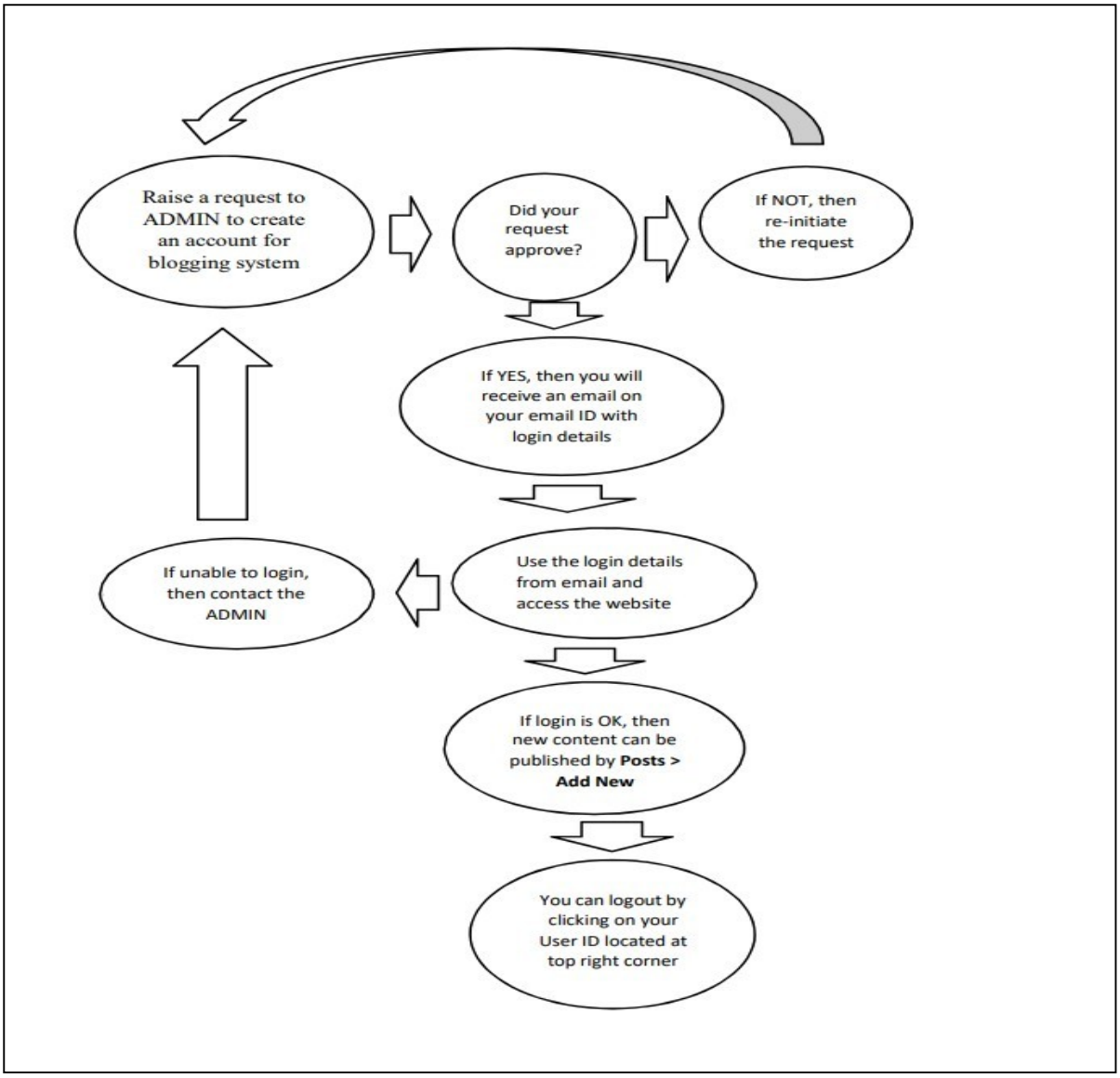

Figure 1. Flow Chart

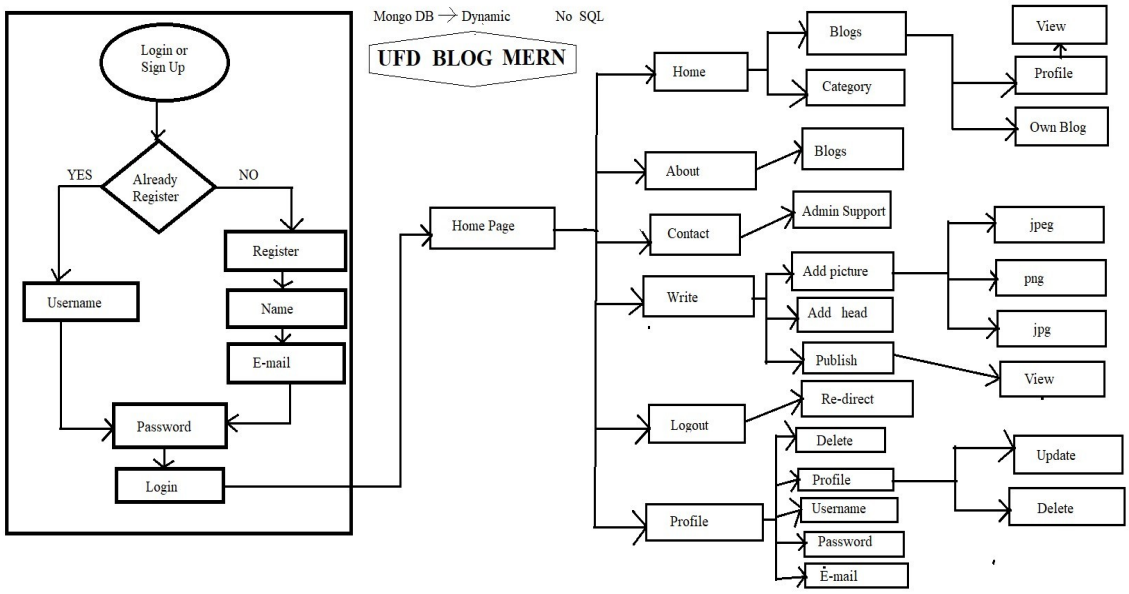

FIGURE 2. UFD BLOG MERN

V. CONCLUSION

Blogging is an useful resource for any institution as it is a platform forusers to express and consume opinion of others. This application is basically a digital solution to make this process much easier and more efficient.
After reading all information's and experiences in details from this platform students will get more interested to our college. Hope they will want to learnand explore through our college campus. This blogging portal will also provide a solution for our alumni base and currentbatches to know, interact with each other, this will also be beneficial for networking.

Future Scope

Web based interface for generate reports, like who has published morecontents,who has commented most, the logged in time etc. Linking and integration of other online educational web sites. Integration with school/college database through Web Services. Development of mobile application which can run on multiple OS anddevices. We can also add a quiz feature and winners or any other reward.

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