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IGNITE: A MULTI-PLATFORM BLOG APPLICATION

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Abstract : **A blog is a kind of webpage or online forum where people or organizations frequently post written content, usually in an informal or conversational manner. The rapid growth of the internet has promoted the concept of blogging. The emergence of social media has ushered in a new phase for the production of online content. Many bloggers have turned their attention to social media in an effort to expand their readership and gain more followers because these platforms—Facebook, Twitter, and Instagram, among others—offer rapid access to a large audience.**

This paper presents the development journey of a robust and versatile blogging application tailored to meet the evolving needs of content creators and readers alike. The project focuses on developing a mobile-friendly blogging platform and a website to host and post those blogs online. This application is advantageous in the context of blog posting, enabling users to articulate their content verbally, which is then transformed into text.

Keywords— blogging, content creators, blog posting, social media

INTRODUCTION

A blog is a web page that is an informational website which displays web journals. These web journals serve as a platform where people can share their thoughts, opinions and views on a particular subject with means of writing blogs. Web blogs are renewed on a daily basis since new posts are regularly published by numerous writers. Blogs posts could be short writing or might even be lengthy posts that consist of texts, images, videos, and other media.
The term "weblog" was coined by Jorn Barger in 1997 to describe these online journals. However, it was Peter Merholz who shortened "weblog" to "blog" in 1999, which popularized the term. Blogging emerged as an efficient way of expressing and sharing unique ideas. It is a robust method of communication that utilizes the views and thoughts of various writers that could lead upto uniting societies.

Individuals who engage in the practice of writing and managing blogs are commonly referred to as bloggers. Bloggers are individuals who indulge into content creation and community engagement. Researchers are just beginning to recognize the potential value that these media offer as sources of data for research.

This research is based on the development of a blogging application which aims to provide a medium to the users where they create, collaborate and share their thoughts, ideas and express themselves. This medium works on two platforms viz., a website and an android application. The application is created upon the Android Studios and uses Firebase for the premier backend.

In this paper, we undergo through numerous researches and analyze their systems that deal with technologies and techniques. The research paper has been structured as follows:

- section 2 includes literature survey
- section 3 provides brief discussion about the methodology used to conduct this research
- section 4 explains the conclusion of this work
- section 5 consists of the future scope

Literature Survey

(Sri Nishant Reddy Lakireddy. et al., 2022) [1], has created a web-based application which provides the user with the ability to remotely access the application irrespective of their location around the world. React JS has been used as the front-end of the application. Firebase is used to provide the support to the back-end. The privacy of the users is supported by the authentication algorithm through Google Firebase.

(Dhanshri Therokar1. et al., 2021) [9], the author has created an Android based Chat Application using Firebase. Authentication is provided using Firebase. The GUI of the application consists of Inbox and Group pages. Inbox has list of messages which ca be read and messages can even be sent once the user sign in and is confirmed as a valid user after authentication. The Group feature has a GUI which allows the user to join new groups chat and unfollow the existing ones. The other notable features of this application are quick notification and logout.

(M. Yuan Jiugen. et al., 2021) [7], the author has created a blog system using C# language, Visual Studio tools, B/S architecture and SQL server, database server. The whole system has two distinctive modules-user and administrator. The basic idea is to provide the human need innovation and expression using the system. The user module has features like blog browsing, personal center, comments etc. The administrative module includes features like user management, blog management, advertising management etc . The major drawback of this system is the technology used for the development of the application as there are better alternatives in order to reduce coding and time, it took to develop the entire application.

(Uktam A. Madaminoy. et al., 2023) [6], thoroughly explored the various types of databases prevalent today, their functionalities, interaction, operational principles, and application domains. Drawing from comprehensive analysis and research, it presents practical steps for developing projects aimed at optimizing Firebase utilization within applications. Notably, Firebase extends beyond mobile applications, finding utility across diverse domains. Furthermore, the article elucidates the system's scalability to accommodate large-scale applications. Additionally, it underscores Firebase's advanced features in data storage and security, dedicating a specific section to authentication methods, implementation strategies, optimization considerations, and other pertinent requirements.

(Arzu Baloglu. et al., 2010) [8], delineated three distinct phases. Firstly, the crawling phase involves gathering data from web blogs. Following this, the analyzing phase involves parsing, processing, and extracting valuable information from the data. Lastly, the visualization phase facilitates a deeper comprehension of the results through graphical representation. Moreover, the proposed system architecture comprises components such as the Blog Crawler, Sentiment Analyzer, and Web Usage Interfaces. The article presents an opinion mining application tailored for computing movie scores sourced from web blog pages. Experimental findings demonstrate the application's ability to yield accurate results closely resembling real values. Additionally, the study introduces an unsupervised approach to sentiment analysis.

METHODOLOGY

Website Development using React

Developing a blog website using React involves organizing components to manage functionalities such as post listings, creation, and viewing. React Router aids in seamless page navigation. Dynamic content updates are facilitated by state management, while API integration enables data retrieval and storage. Design aspects prioritize responsiveness and accessibility for a smooth user experience across devices. Enriching user engagement entails features like comments, search, and social media sharing. React's modular structure streamlines maintenance and scalability of the blog platform.

Mobile App Development using Android

Building a blog app on Android involves designing user-friendly interfaces for post creation, browsing, and interaction. Utilizing Recycler View streamlines data presentation and navigation. API integration enables smooth content fetching and storage. Features like offline access and push notifications boost user engagement. Material design principles ensure visual consistency and usability. Thorough testing across devices and OS versions guarantees compatibility and performance. Iterative development, guided by user feedback, improves functionality and user experience, ensuring the app's competitiveness in the market.

Firebase

Firebase stores data in the database in the cloud, not on the server. Stores data in cloud storage in JSON format. During the system operation, the user is automatically integrated with other services, i.e. synchronized. When operations are performed on data stored in the Firebase database, an automatic change occurs in the application, that is, if this database is used by an IOS or web application, their data will be automatically updated depending on the changes.

Sign-in (Google Authentication)

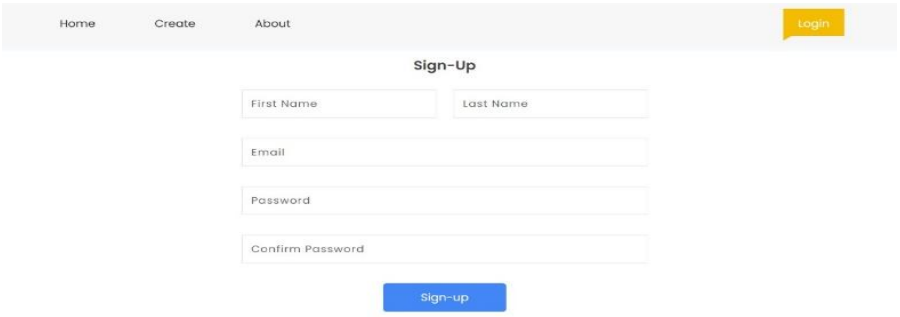

Fig.1. Sign-up page

Firebase Authentication offers developers a comprehensive and user-friendly authentication solution. With Firebase Authentication, developers can easily incorporate various authentication methods, including email/password, phone number, and third-party providers like Google, Facebook, and Twitter. This eliminates the need for developers to create authentication systems from scratch, streamlining the development process and reducing time and effort.

Furthermore, Firebase Authentication provides essential features such as email verification, password reset, and account linking. These features enhance the security and usability of the authentication process for users. Additionally, Firebase Authentication seamlessly integrates with other Firebase services, enabling developers to build robust and scalable applications with minimal setup and configuration.

Logout

To implement logout functionality using Firebase Authentication, simply call the signOut() method on the FirebaseAuth instance when the user triggers the logout action. This action will effectively sign the user out of the current session.

CRUD – Create Read Update Delete

In web development, CRUD operations - Create, Read, Update, and Delete - are fundamental for managing data. These operations allow users to interact with the application effectively:

- Create: Users can generate new content, such as blog posts, by completing a form and submitting it.
- Read: Existing content, like blog posts, can be viewed by users through the blog page, presenting a list of posts.
- Update: Users have the ability to modify their own content, such as editing the text of a blog post, by accessing an edit form linked to each post.
- Delete: Users can remove their content, such as deleting a blog post, by clicking on a designated delete button linked with each post.

Integrating CRUD functionality ensures a seamless and intuitive experience for users to manage data within the web application.

Search functionality

Implementing a comprehensive search functionality enables users to effortlessly find and access relevant content within your blog, thereby improving their browsing experience and engagement with your website.

The Android application development involves incorporating the following graphical user interface (GUI) components: -

GUI 1: A splash screen should be displayed when the application is started.

GUI 2: A list of Google accounts available on the device are displayed out of which one is to be selected.

GUI 3: Home page is laid out on the screen as the user enters the application. This home screen holds a number of uploaded blogs from newest to oldest.

GUI 4: In the navigation bar, the Profile page is provided where the user can view his/her login details as well as logout using a LOG OUT button.

GUI 5: For publishing blogs, a Publish page could be accessed that consists of multiple features like uploading an image, title, description, author's name of the blog and a PUBLISH button for publishing the blog.

GUI 6: An update blog page is also available which allows the user to update the title, description and author's name and an UPDATE button.

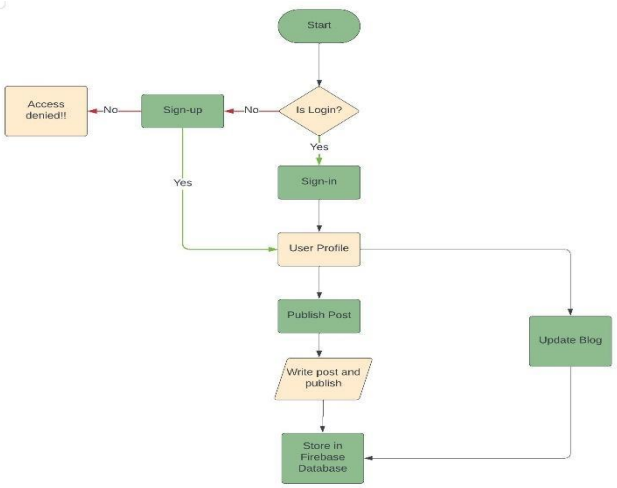

Fig.2. Working of basic functionalities

The above figure (Fig.2) shows the basic working of the application interface.

Conclusion

In conclusion, merging a blog application with a website results in a unified online platform that delivers a holistic user experience. This amalgamation facilitates easy access to both static website content and dynamic blog posts within a single interface, promoting user engagement and encouraging frequent visits to the website. Furthermore, the inclusion of a blog application streamlines content creation and management, empowering website administrators to consistently update and disseminate pertinent information to their audience. Ultimately, the successful integration of these components represents a pivotal achievement in enhancing the online presence and nurturing deeper connections with users.

Future Scope

In the future, a blog application could expand its capabilities with enhanced user engagement tools, such as interactive content and personalized recommendations. Integration with various social media platforms, improved accessibility options, and support for diverse multimedia content like videos and podcasts could further enrich the user experience. Advanced analytics for optimizing content and leveraging emerging technologies such as AI for content curation and moderation could also be pivotal. Additionally, prioritizing mobile optimization and ensuring cross-platform compatibility would be crucial for broadening the application's reach.

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