

Notebook Web Application

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ABSTRACT

Note-taking is one of the more common and ever-present learning activities that form an important part of all students' daily lives. The potential of using technology to enhance note-taking activities has recently come under the spotlight. However, while mobile technologies may be applauded for their mobility and the value they can add to students' learning experience, they could easily become a distracting factor, rather than the improvement they were intended to be. In this qualitative study, eight students volunteered to experiment with various mobile devices for a period of 6 weeks, and to share their experiences in a series of five group interviews^[1]. Information found in the literature about note-taking, combined with the students' feedback on their experiences, provided insight into how students record and process information. The affordances of mobile devices for cognitively demanding note-taking that are regarded as useful in a teaching and learning environment were also discussed in the group interviews. All the students agreed that they would not commit themselves to using only one application or device. They emphasized the fact that they used more than one device, and in some cases multiple applications on those devices, depending on their educational setting. This article gives students, lecturers and software developers insight into the affordances of mobile devices and note-taking applications (apps), in order to support cognitively demanding note-taking.

I. INTRODUCTION

React is a popular open source front-end JavaScript library developed by Facebook. React is widely popular among developer communities because of its simplicity and easy but effective developing process. React makes it easier to create interactive user interfaces. It efficiently updates through rendering the exact components to the view of each state and makes the data

changes in the application.

In ReactJS, every component manages their own state and composes them to the user interfaces. This concept of components instead of templates in JavaScript, plenty of data can easily be passed to the app and thus keep the state out of the DOM. Using Node React can also be rendered on the server side. Alongside web apps, to build mobile applications we can use React Native as well. Firebase is considered as web application platform. It helps developers builds high- quality apps. It stores the data in JavaScript Object Notation (JSON) format which doesn't use query for inserting, updating, deleting or adding data to it. It is the backend of a system that is used as a database for storing data. Firebase Auth supports social login provider like Facebook, Google GitHub , and Twitter. It is a service that can authenticate users using only client-side code and it is a paid service. It also includes a user management system whereby developers can enable user authentication with email and password login stored with Firebase.

II. OBJECTIVE

The main purpose of this project is to help students organize and synthesize their thoughts. The notebooks act as an online textbook owned and created by the student that contains notes, practice tasks, journals, resources, and reflections.

III. EXISTING SYSTEM

EVERNOTE:

Evernote is a suite of software and services designed for note-taking and archiving. A "note" can be a piece of formatted text, a full webpage or webpage excerpt, a photograph, a voice memo, or a handwritten "ink" note^[6]. Notes can also have file attachments. Evernote allows users to capture, organize, and find information across multiple platforms. Users can take notes, clip webpages, snap photos using their mobile

phones, create to-dos, and record audio. All data is synchronized with the Evernote web service and made available to clients on Windows, Mac, Web, and mobile devices^[5]. Notebook is an note taking application developed using react js and firebase so mainly react js acts as the heart of the application where the UI, overall performance and responsiveness of the application has been designed and firebase acts as a storage and provide authentication to ensure the consistent security of the application.

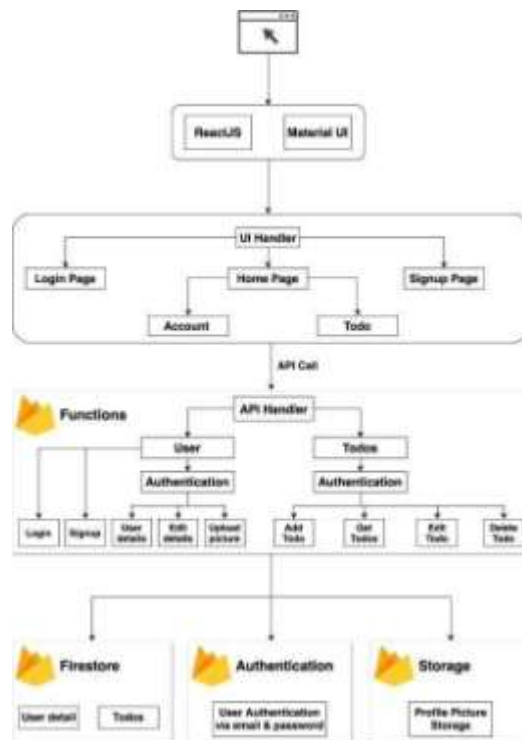
Notebook application mainly consists of three application which are login, signup and dashboard. Login component is used to take login credentials of the existing user who is already completed his registration in the previous session. User can create their own account using the signup component. By creating the account in the notebook application provides faster access to their saved work and their important notes. Third and last component is dashboard, whenever the user logs into the application a dashboard is presented to the user where the user can see his last updated work and his/her notes that are available in the notebook application. Firebase acts as a storage and the

security authenticated for the notebook application which provides a secured and friendly environment to the user.

GOOGLE KEEP:

Google Keep is a note-taking service developed by Google. Launched on March 20, 2013, Google Keep is available on the web, and has mobile apps for the Android and iOS mobile operating systems^{[2][6]}. Keep offers a variety of tools for taking notes, including text, lists, images, and audio. Users can set reminders, which are integrated with Google Now. Text from images can be extracted using optical character recognition, and voice recordings can be transcribed. The interface allows for a single-column view or a multi-column view. Notes can be color-coded, and labels can be applied for organization. Later updates have added functionality to pin notes, and to collaborate on notes with other Keep users in real-time. Google Keep has received mixed reviews. A review just after launch in 2013 praised its speed, the quality of voice notes, synchronization, and the widget that could be placed on the Android home screen^{[3][5]}.

IV. ARCHITECTURE DIAGRAM



V. PROPOSED SYSTEM

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REACT JS

A React application is a collection of discrete components, each representing a single view. The idea of every individual view component makes it easy to iterate on product development because to make changes on a single view or component, it is not necessary to consider the entire system. When an application is built with React, the code is generally predictable, it is because React wraps the DOM mutative, imperative API with a declarative one, which raises the level of abstraction and simplifies the programming model. Moreover, it is easier to scale the application built with React.

React JS is featured with one-way unidirectional data flow between the states and layers in an application. This means data flows in single direction between the application states and layers. In two-way data binding like Angular, if a model is changed, the view also

- **Firestore** It facilitates easy and secure file transfer regardless of network quality for the Firebase apps. It is backed by Google Cloud Storage which is cost-effective object storage service. The developer can use it to store images, audio, video, or other user-generated content.

changes and vice-versa. React renders the updates in the DOM much quicker than alternative frameworks and it is a much smaller library. DOM means document object model. Thus, it is easy to choose the tools to get the job done.

FIREBASE

Firebase is considered as web application platform. It helps developers build high-quality apps. It stores the data in JavaScript Object Notation (JSON) format which doesn't use query for inserting, updating, deleting or adding data to it. It is the backend of a system that is used as a database for storing data. The services available are:

- **Firebase Analytics** It provides insight into app usage. It is a paid app measurement solution that also provides user engagement. This unique feature enables the application developer to understand how users are using the application. The SDK has the feature of capturing events and properties on its own and also allows getting custom data.
- **Firebase Cloud Messaging (FCM)** It is formerly known as Google Clouds Messaging (GCM), FCM is a paid service which is a cross-platform solution for messages and notifications for Android, Web Applications, and IOS.
- **Firebase Auth** supports social login provider like Facebook, Google GitHub, and Twitter. It is a service that can authenticate users using only client-side code and it is a paid service. It also includes a user management system whereby developers can enable user authentication with email and password login stored with Firebase.
- **Real-time Database** Firebase provides services like a real-time database and backend. An API is provided to the application developer which allows application data to be synchronized across clients and stored on Firebase's cloud. The client libraries are provided by the company which enables integration with Android, IOS, and JavaScript applications.

FRAMEWORK

confidentiality.

VITE:

Vite is framework-agnostic and works with multiple frameworks. For instance, it offers official templates for React, Vue, Preact, Svelte, Lit and even vanilla JavaScript and Typescript. It offers multi page support^[4]. Vite offers a "library mode" that can be used for creating browser-

oriented libraries. Vite (French word for "quick", pronounced /vit/, like "veet") is a new breed of frontend build tool that significantly improves the frontend development experience^[3].

VITE is an Instant Server Start for:

- Lightning Fast HMR
- Rich Features
- Optimized Build
- Universal Plugin Interface
- Fully Typed APIs

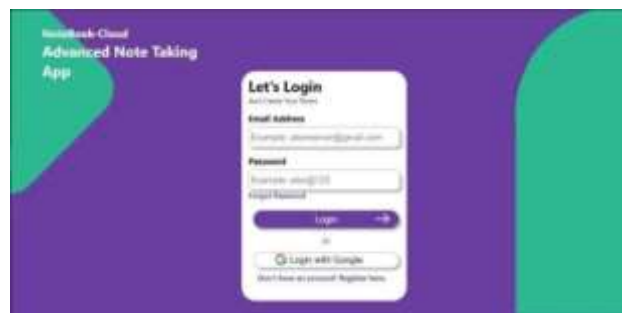
LIBRARIES REACT-ROUTER-DOM:

React Router DOM is an npm package that enables you to implement dynamic routing in a web app. It allows you to display pages and allow users to navigate them. It is a fully-featured client and server-side routing library

for React. React Router Dom is used to build single-page applications

i.e. applications that have many pages or components but the page is never refreshed instead the content is dynamically fetched based on the URL. This process is called Routing and it is made possible with the help of React Router Dom.

The major advantage of react-router is that the page does not have to be refreshed when a link to another page is clicked, for example. Moreover, it is fast, very fast compared to traditional page navigation. This means that the user experience is better and the app has overall better performance.



SIGNUP:

Signup component is for the users that want to register and use this application as their personal notes. Registration into our application takes place during this signup process. A unique user

account will be given to the user who completed the signup process. Basic user information like first name, last name, email address, password, date of birth, gender and phone number.



DASHBOARD:

This component shows the entire recent list of notes that he or she has created in our

application. It also gives easy access to the users who want to have a quick glance over their entire notes history.



COMPONENTS

Login is for existing users who have already registered into our application so this login mainly consists of certain fields like email address and password and password is securely encrypted by firebase and email id is correctly validated so that the user who is trying to login will not face any kind of issue during the login session. These login id and passwords in this component are securely stored and have high

FEATURES

- Provides User with Login/Sign Up features to create a unique account.
- User's notes are stored in the database individually and are accessed whenever user logs into the account.
- The user-Interface is developed using React and CSS to develop a clean and minimalistic design.
- The backend part of the project takes care of the login/sign up and notes retrieval from the database.
- Users can also Search notes based on particular tag.

VI. CONCLUSION

We finally conclude that this project allows users to take notes faster and easier and also improves the accessibility. This Project will get even more enhancements in the future to make it a user-friendly application and this Project helped us in understanding React and Firebase in better way and improved our web development skills.

FUTURE ENHANCEMENTS:

- To add multiple fonts for better usability.
- To add a feature to share notes among multiple users.
- To provide Users with better User Interface and improve the Account page.
- To add Collaborative accounts to store notes for a particular group of members to improve

LOGIN:

accessibility of the notes.

- To provide users with the ability to store images in their notes.

REFERENCES:

- [1] Academic Success Center
- [2] Bauer, A., Koedinger, K.R. (2007). Selection based note-taking applications. Human-Computer Interaction Institute.
- [3] Mueller, P.A., Oppenheimer, D.M. (2004). The pen is mightier than the keyboard: Advantages of longhand over laptop note-taking. *Psychological Sciences*, 25(6), 1159–1168. [4] Herbert, W. (2014). Ink on paper: Some notes on note taking*. Association for psychological science.
- [5] Andres, L., Zentner, A., Zentner, J. (2014). Measuring the effect of internet adoption on paper consumption. Policy Research Working Paper.
- [6] Molla, R. (2014). Remember pens and pencils? They're doing just fine. *The Wall Street Journal*.