Available online at http://www.advancedscientificjournal.com
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IJMASRI, Vol. 2, issue 6, pp. 630-634, June -2022
10.53633/ijmasri.2022.2.6.003

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY ADVANCED SCIENTIFIC RESEARCH AND INNOVATION (IJMASRI)

ISSN: 2582-9130 **IBI IMPACT FACTOR 1.5** **DOI: 10.53633/IJMASRI**

RESEARCH ARTICLE

GO SHARE: A CLOUD-BASED STORAGE PLATFORM

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Abstract

As part of this paper, we describe the Go-Share Cloud Storage Platform, which is made by using front-end web technologies like Html, CSS, and React.js for the User Interface, and firebase and Mongo DB for the backend and database, allowing users to store their files and folders in the cloud database. Go-Share can be used both officially and unofficially, as cloud storage is becoming more popular nowadays. Anywhere in the world, users can upload, download, share, and view their files at any time. Schools and offices can utilize Go-Share for distributing files to thousands of people at once. The only thing that Go-Share needs is a user's email address for authentication for data security on the web. The application also consists of a To-do feature that allows users to enter upcoming events and tasks they need to complete

Keywords: React, Cloud Storage, Firebase, Cloud, JavaScript, MongoDB

Introduction

With COVID 19 sweeping the globe, people across the globe were compelled to stay at home, people were unable to go out to work, students were unable to go to school, and everyone was forced to go online to carry out their work. Due to everyone being at home, files and folders were unable to be exchanged physically, and computer files instead were shared via pen drives, regardless of whether they were students or office workers.

Cloud storage is a digital storage solution that utilizes multiple servers to store data in logical pools. The organizations buy the storage capacity from the Providers to store user, organization, or application data. In the past few years, cloud storage has grown in popularity and has become a direct challenger to local storage; mainly due to the benefits it provides security and accessibility. Go-Share has been upgraded to a cloud-based storage service that can be used to upload, download, share, and view files anytime from anywhere. In addition, it synchronizes data so that duplicate files do not get stored in the cloud. Schools can share assignments, notes, lab files, etc. easily with a large number of students with just a link, and students can also easily upload their assignments and send them to their teachers, which make the work so convenient. The ability to share images and videos with friends reduces the problem of children having to

copy the content to a secondary device and giving it to their Friends, increasing the risk of computer viruses and misplacing the device, such as a Pen drive. The Go-Share Cloud storage is useful for individuals of every age group since they can clear the space on their mobile phones or PCs and store them in the cloud storage, thus increasing their disk space and thereby improving their security.

Features : Some features of Go-Share are listed as:

Login Authentication *:* Go Share comes with a login portal in which the user needs to provide its Gmail ID so that authentication of the user can be done and keeps the user's data secure.
Cloud storage: Users can upload files and folders to the cloud by giving each of them a unique name for the main folder in which they intend to store their data.
Retrieve/Download: Users can download files and folders to their computers and other devices anywhere in the world
Sharing: The sharing feature lets users send files and folders to several recipients at the same time using a single link that can be accessed by anyone.
Media Viewer: It is not necessary to download any files, images, videos, or documents, as they can be viewed on the website only.
Search : The search feature makes it possible to locate previously-stored folders.
Group Creation: This feature allows you to create groups by adding the email id of your friends, thus files and folders can be shared at a single place.
To-Do *:* The website has been integrated with a todo feature in which a person can add his tasks which need to be accomplished.
Notes Editor *:* The user can add notes in this editor for easy accessibility.

TECHNOLOGY USED

- ***React.JS:*** React is a declarative, efficient, and flexible JavaScript library for building user interfaces. It's 'V' in MVC. React.JS is an open-source, component-based front-end library responsible only for the view layer of the application. The declarative view makes your code more predictable and easier to debug.
- ***Node.JS:*** Node.JS is an open-source, cross-platform, back-end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser.
- ***Firebase:*** Firebase is a Cloud-hosted, MySQL database that uses a document-model. It can be horizontally scaled while letting you store and synchronize data in real-time among users. This is great for applications that are used across multiple devices such as mobile applications. Firebase is optimized for offline use with strong user-based security that allows for server less based apps as well.
- ***Bootstrap*****:** It is an open-source and free CSS framework, which helps in directing a responsive device-friendly mobile-first front-end web page development tool. Bootstrap includes the CSS (Cascading Style Sheets), and an optional JavaScript supported design template (plug-ins) that deals with typography, implementation of buttons, forms, and various other components user interface. This framework helps in faster web development and supports developers in creating responsive web pages faster.
- ***MongoDB Atlas:*** MongoDB Atlas is MongoDB's fully-managed cloud database service. The service is built to handle enterprise workloads, with support for global clusters. You can store your data with Amazon Web Services (AWS), Google Cloud Platform, or Microsoft Azure. However, you don't need to set up an account with any of these platforms. MongoDB Atlas takes care of all this behind the scenes. MongoDB Atlas also automatically handles backend administrative processes such as provisioning resources, setting up clusters, or scaling services. Most of the tasks you perform are simple point-and-click operations that you carry out through the service's centralized web interface.

Implementation

- Throughout the project, two major components have been implemented; one is the front end or user interface, and the other is the backend or cloud storage:
- ***Frontend:*** The project is bootstrapped with Create React App, which takes us to the react website to which we can make changes and it installs node modules and package.json files so that we can edit the website with ease. The node JS project can be run on the local host: 3000 servers by using the npm start command. All changes made to the code are immediately reflected by the server and updated as a result.
- ***Backend:***The backend of the application is implemented through the import of firebase and the installation of required packages on the pc and also using MongoDB atlas. The cloud storage is implemented by creating a new project on firebase through which the application is started. Firebase provides a data URL that can also be used to view the data on the Go-Share site. Additionally, it supports user authentication, which is used on the login page to store the user id and password.
- **Npm-Start** – Running this command in the terminal installs all the dependencies required to start a react server and compiling it on the local host.

Results

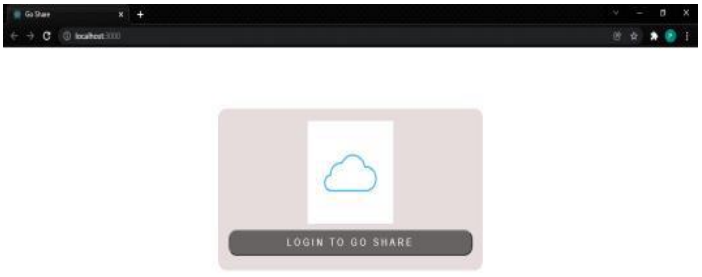


Fig 1: Login Portal

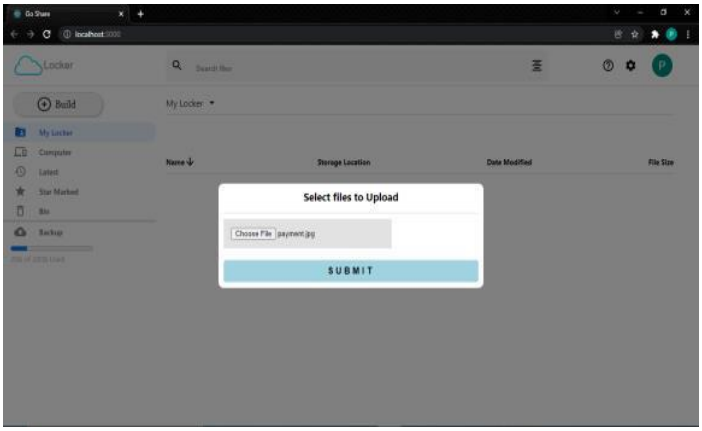


Fig 2: Upload Document

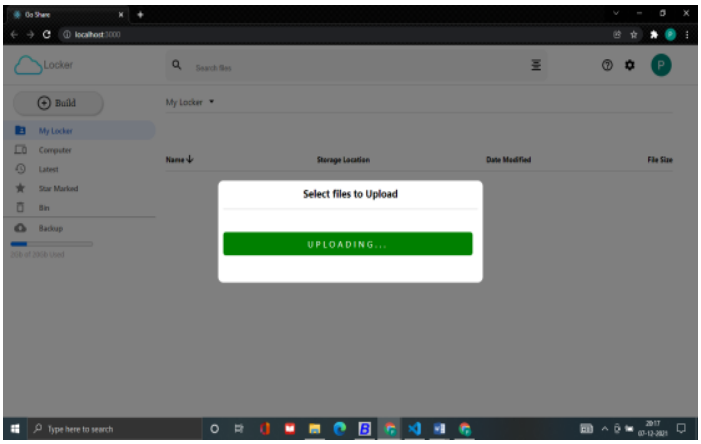


Fig 3: Document Uploading

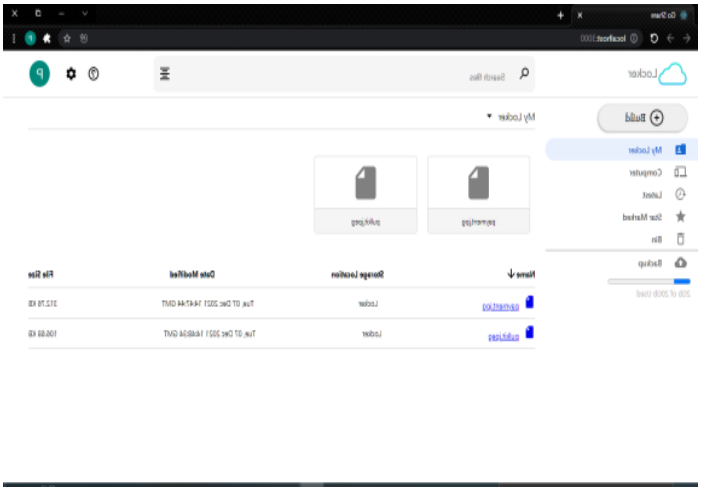


Fig 4: UI Interface

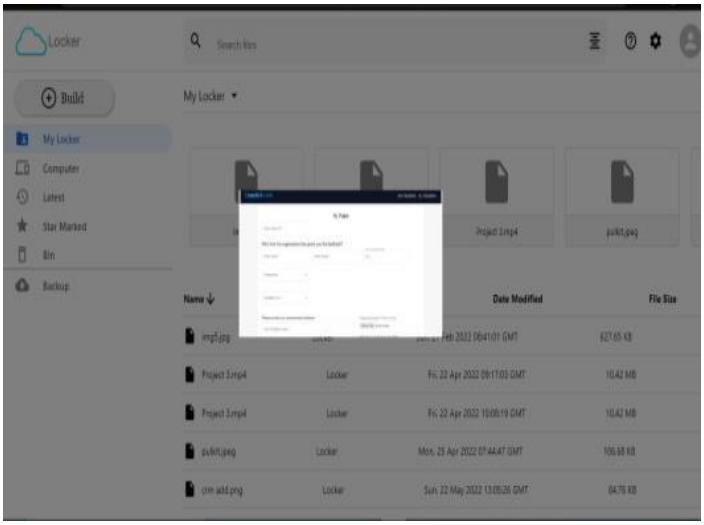


Fig 5: Image Viewer

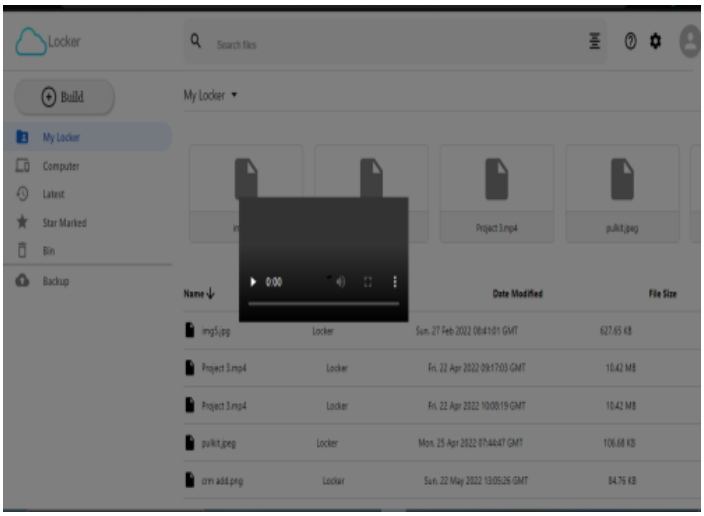
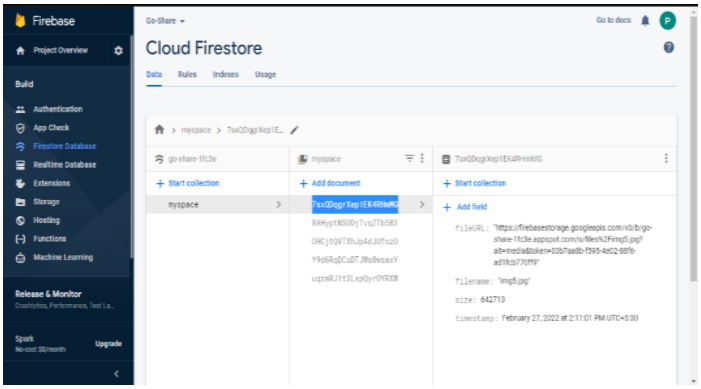


Fig 6: Video Viewer



Conclusion

In conclusion, our project has the capability of storing files and folders that are kept safe and synchronized in real-time in the cloud, and the best part of this is that it can be accessed from any device. Cloud storage with a small amount of space is quite adequate for storing documents. This will benefit both students and teachers quite a bit. Cloud storage costs more, but people buy secondary storage devices for their files and folders, so it's fair. Further optimizations can be done on the website and tonnes of features can be added. The matter which arises is privacy, which can be settled in the coming future so that many people can engage with Go-Share. Cloud storage is an emerging technology and has a great changing impact on the way businesses and organizations manage their information and data. Cloud storage provides massive scalability, high performance, data resiliency, and 99.999% readability. There are four different types of deployment models of cloud storage provided by cloud services provider according to the requirements of the clients. The general architecture of the cloud storage is also discussed in the article along with the pros and cons.

Acknowledgement

This paper and the research behind it would not have been possible without the exceptional support of our mentor, Mr. Ajay Kaushik. His enthusiasm, knowledge, and patience have been an inspiration and kept my work on track from my first defence. Innumerable ways have been improved through the generosity and expertise of all who have contributed to this study; however, I am solely responsible for the errors that inevitability remain. We could not have imagined having a better advisor and mentor for our research-based project.

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