Glabbr's Knyo

Internship report submitted in partial fulfilment of the requirements for the degree of B.Tech. (and M.Tech (for DD))

by

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October 2021

Certificate

I, **Amar Kumar**, with Roll No: **CED17I029** hereby declare that the material presented in the Internship Report titled **Glabbr's Knyo** represents original work carried out by me in the **Software Development Internship program** at **Glabbr Technologies Private Limited** during the year **2021**. With my signature, I certify that:

- I have not manipulated any of the data or results.
- I have not committed any plagiarism of intellectual property. I have clearly indicated and referenced the contributions of others.
- I have explicitly acknowledged all collaborative research and discussions.
- I have understood that any false claim will result in severe disciplinary action.
- I have understood that the work may be screened for any form of academic misconduct.

Date: October 18, 2021 Student's Signature: Amar Kumar

In my capacity as supervisor of the above-mentioned work, I certify that the work presented in this Report is carried out under my supervision, and is worthy of consideration for the requirements of internship work during the period May 2021 to October 2021.

Advisor's Name: Advisor's Signature

Abstract

This report documents the internship work I carried out at Glabbr Technologies Private Limited. The idea is to develop a platform where companies or users can store almost every types of information about the product such as different components of the product, their conditions(such as new or old), price, measurement, documents, CAD models, build of materials etc.

Although similar service is given by google drive for storing documents and similar service might exist for storing different components of a product. Our aim was to make the service, an integration of all these services so that a user need not go to different places to store different components of a product. Our service is more flexible and user friendly. It also provides more functionalities as compared to already existing services. Its simplicity provides user experience more interactive

Acknowledgements

First of all, I would like to thank our Institute, Indian Institute of Information Technology Design and Manufacturing Kancheepuram, for arranging the internship program for us. I express my heartfelt gratitude to Glabbr Technologies Private Limited for recruiting me as an intern and giving me the opportunity to work on such a fascinating project. I would like to take this opportunity to express my gratitude to everyone who helped me during my internship.

I take this opportunity to express my gratitude to **Abhijeet C. Director, Glabbr Technologies Private Limited** for recruiting me as an intern.

I'd like to express my heartfelt gratitude to **Mr. Vinay**, who greeted me warmly and led and supported me during the internship.

I express my deepest thanks to **Mr. Jeet P. and Mr. Balram K.** for guiding me throughout the internship.

Last, but not least, I would like to thank my friends and classmates, Praveen K. Rana, Arindam S. and Firoz M. for their wonderful support and help.

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Abbreviations

PLM	**P**roduct **L**ifecycle **M**anagement
SaaS	**S**oftware as a **S**ervice
CAD	**C**omputer **A**ided **D**esign
DTO	**D**ata **T**ransfer **O**bject
API	**A**pplication **P**rogramming **I**nterface
HTTP	**H**yper **T**ext **T**ransfer **P**rotocol
UI	**U**ser **I**nterface
URL	**U**niform **R**esource **L**ocator

For/Dedicated to/To my...

Chapter 1

Introduction

ABOUT THE COMPANY
Glabbr Technology private limited is a non governmental company which was incorporated on 4th February 2021. It was founded to design and engineer a wide variety of innovative cloud products. It's headquarter is located at Pune, India.

1.1 Background

This report is being made to document the internship experience at Glabbr technologies private limited from June 28 2021 and still going on. The aim of the internship was to develop a cloud PLM application where users/companies can store almost every types of information about the product such as different components of the product, their conditions(such as new or old), price, measurement, documents, CAD models, build of materials etc. PLM in the cloud is a tool that helps enterprises manage product development during the entire lifecycle. It improves transparency and communication among teams that may

be dispersed both in terms of geography and discipline. The company needs an appealing and easy to use cloud application. The application has to be user-friendly and flexible so that it cater to the needs of all kinds of customer.

1.2 Motivation

With the increased number of companies, there is increase in the number of products as well. We know that almost every product needs some raw materials. These raw materials on further processing and combining with each other, leads to the development of a new product. To store these kinds of information of components of product, there needs an application which can store all the information about the products along with their images as well because it is almost impossible for a company to store these information on a paper. Companies basically need a platform where they can manage their product data efficiently from the nascent conceptual stage to design and manufacturing.

1.3 Objectives of the work

The main purpose of our application is to help companies, manage their products easily by offering a user-friendly platform which is meant to store details about a product along with its cad model or images as well as any kinds of documentation about the products. Our objective was to develop a cloud application where users can sign up or login and store the information about theirs products

1. Understand the pre-existing similar applications, study then extensively to understand their weakness and try to resolve those issues in our product.
2. Write the appealing and easy to understand and manage backend

1.4 Technologies used

GO

Go (also called Golang or Go language) is an open source programming language used for general purpose. Go was developed by Google engineers to create dependable and efficient software. Most similarly modeled after C, Go is statically typed and explicit.

SERVERLESS

A serverless architecture is a way to build and run applications and services without having to manage infrastructure. Your application still runs on servers, but all the server management is done by AWS.

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.

POSTMAN

Postman is the collaboration platform for API development. Postman simplifies each step of building an API and streamlines

collaboration so you can create better APIs—faster.

AWS CLOUDWATCH

Amazon CloudWatch is a monitoring and observability service built which provides you with data and actionable insights to monitor your applications, respond to system-wide performance changes, optimize resource utilization, and get a unified view of operational health.

Chapter 2

About the product

2.1 What is Knyo?

Knyo is a cloud PLM Saas for managing your product design and manufacturing data effectively. It has a Modern Intuitive UI and an easy learning curve without much clutter. We at Knyo understand the importance of simplicity, this is why we have a lot of features but this is not at the expense of ease of usability. Its Front-end has been written in JavaScript using ReactJS and Redux and Its back-end is using Go language. It is currently hosted on the Amazon web services.

2.1.1 How to use Our application?

As soon as you visit our website, you need to sign up to the website by providing your name and email address. After that you need to provide the few details about your company such as its name, number of employees etc. then you can create password for your account. Then you will be redirected to login page, where you need to provide email and password to login to your account. Then you need to create a site

which is basically a location which can be referred for the product. Then you can use our services.

2.1.2 Importance of our application

With the increase in the number of companies and amount of product, this application can help to store the information about the designs and components used in the product. It also provides capability to store images or CAD models as well which is used by almost every product based company. Apart from these, you can also store the documentation about the products as well as your suppliers and customers for the different components of the product. Since this is a cloud-based system, it is easily accessible from anywhere at any given time.

2.1.3 How Knyo can change the companies experience?

The rapid changes in the technology and digitalization is making companies shift to the digital documents instead of paper documents. Also as everyone wish to keep their all information related to a particular things at one place so that it becomes easy to find them for a person and use it whenever he wants. Similarly companies may wish to keep all the information related to their products at one place, so it becomes easy for a company to refer to it whenever required. We understand the need for Data Security and IP protection, that is why we've built the Knyo implementing every safety protocols and made no compromise to make it secure as well as cost effective. Making a good product is a challenge in itself but

what good will it be to anyone without a dedicated support system. That is why we have well documented user guide, 24X7 support backbone for enterprise customers. Knyo is fulfilling all these requirements for the companies and hence, this application can change the way they look about the storage of the products details.

Chapter 3

Work Done

3.1 Understanding Folderit and Google drive

I was given a task to design a micro-service for the document management system. I was briefly explained about the document management system, and its functionalities.

We first had to understand how folderit and Google drive works. We had to go through the functionalities and method provided by these applications and Think about how can we make more appealing which should be user-friendly as well. We had not to make the application complex, rather we had to keep it as simple as possible so that the application can be used easily by naive users

FIGURE 3.1: Google drive

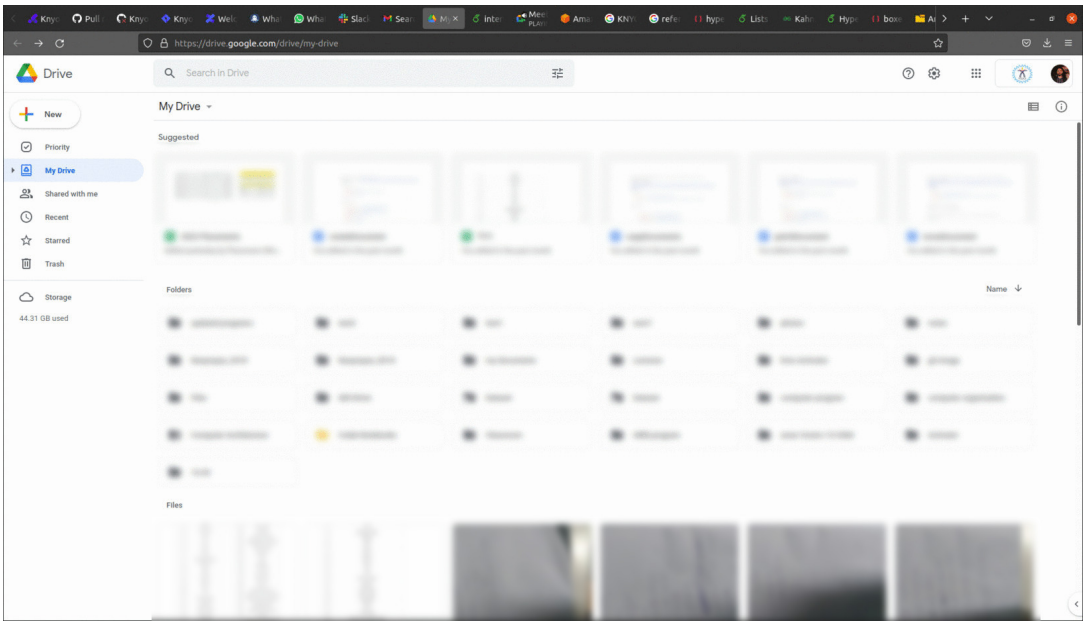
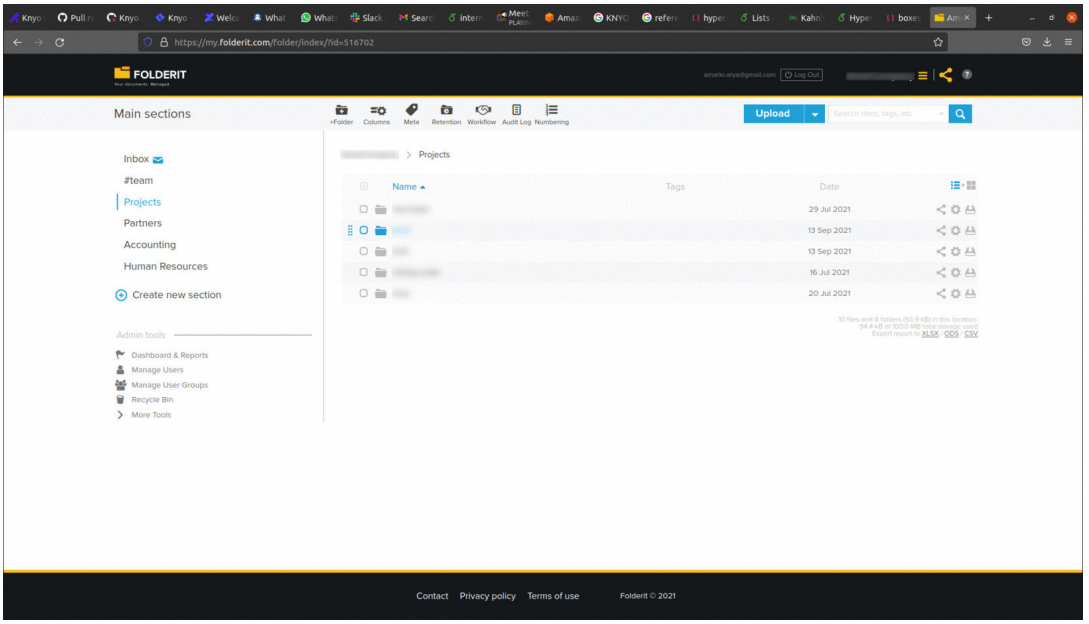


FIGURE 3.2: Folderit



3.2 Learnings

After the first phase of understanding Folderit and Google drive, some time was spent by us to learn the following technologies.

- Go language (For writing back-end)
- POSTMAN (For testing APIs)
- Serverless (To deploy APIs on the Amazon Web Services cloud)

3.3 Some of the pages just for reference of our application

Note - These pages were not created by me. It's just for good understanding of the application

FIGURE 3.3: Login Page

This is the login page of our website

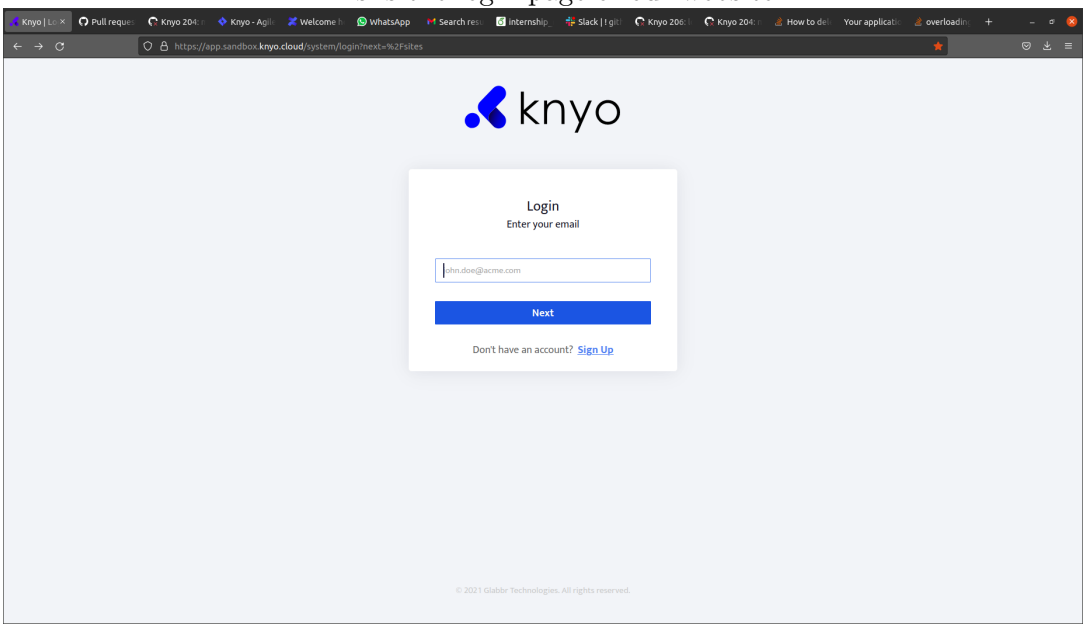


FIGURE 3.4: Site Page

This page shows site, site can be considered as location related to the product

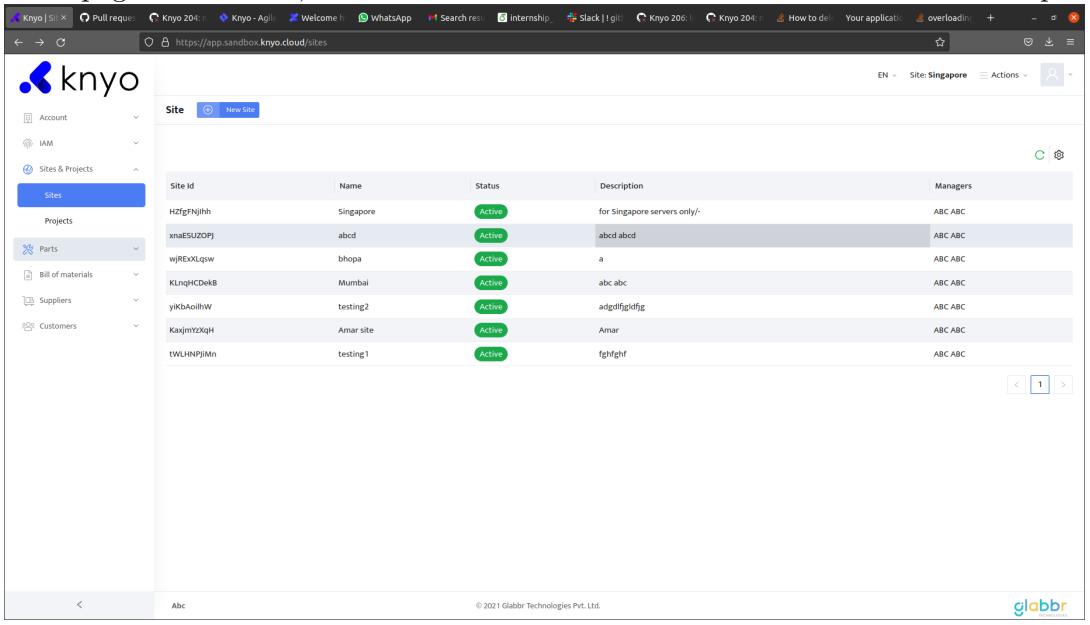
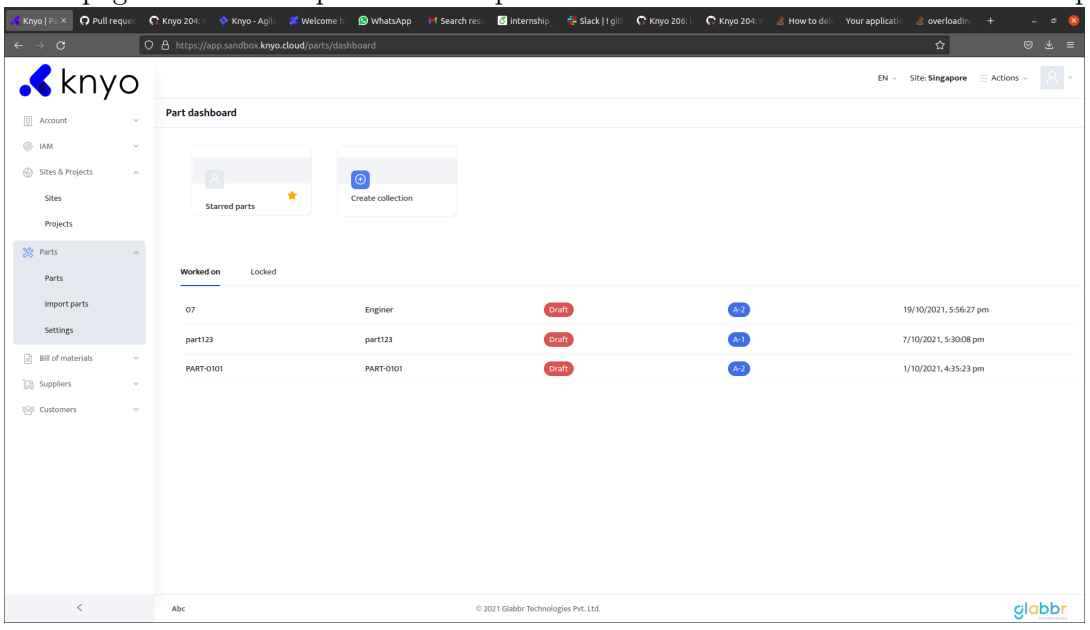


FIGURE 3.5: Part Dashboard Page

This page stores the part of the product as well as we can find starred parts



3.4 User Interfaces whose back-end was written by me

FIGURE 3.6: Document Page

This is the main page of the document. It contains the document inside the selected site. The site can be selected from the top right corner. Currently selected site is **abcd**

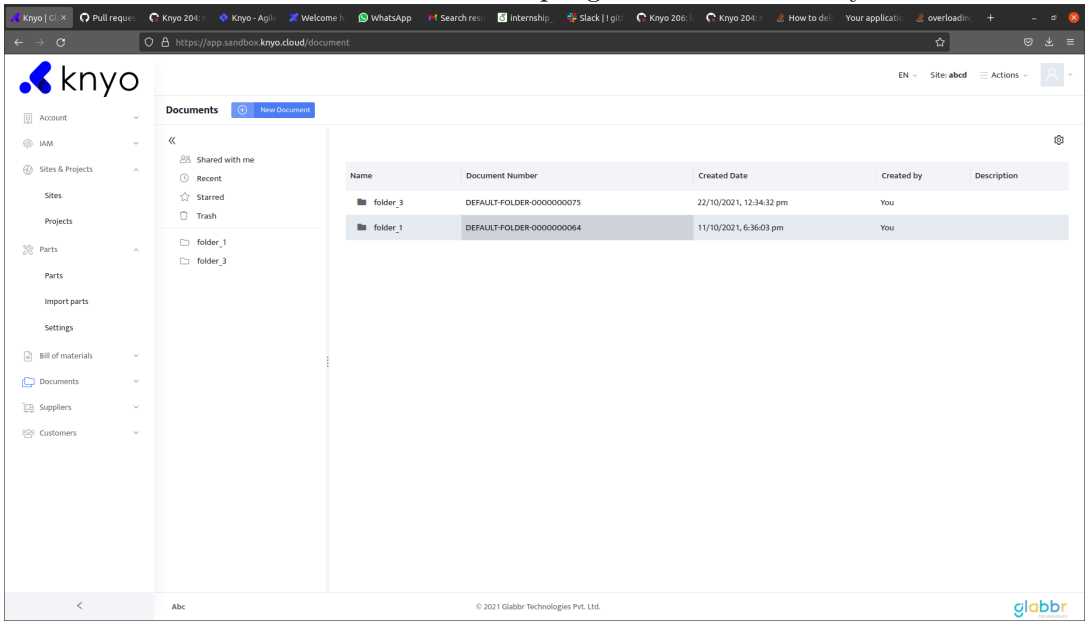


FIGURE 3.7: Opened Document Page

This page show an opened folder. we can see in 2nd column of figure that folder_3 is opened.

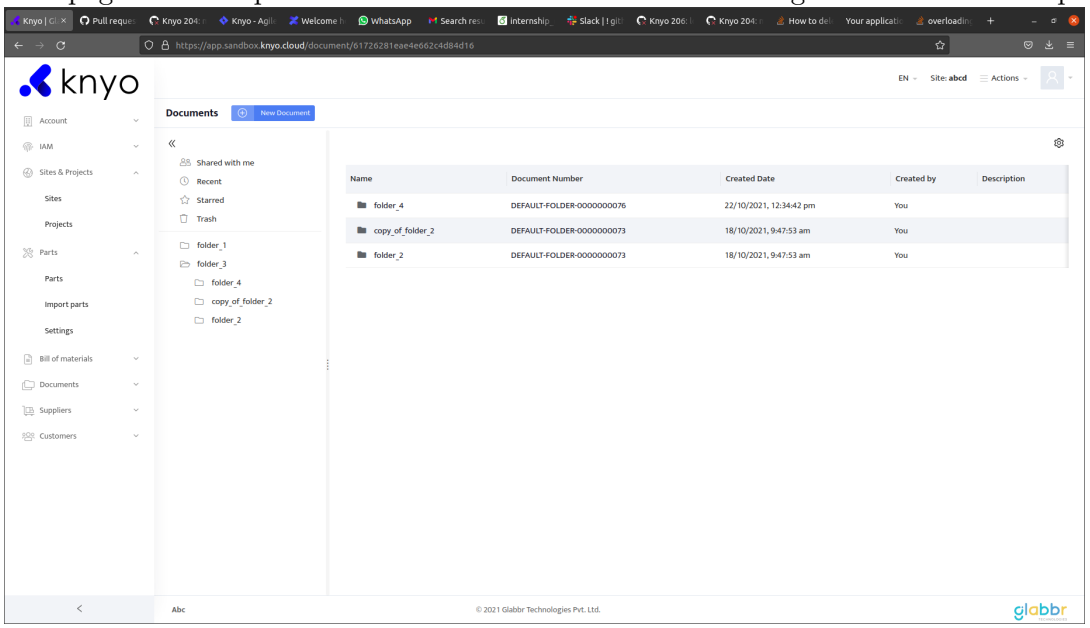


FIGURE 3.8: Document Details Page

This page shows the details of the selected document. Here selected document document is folder_3. we can see some of the information is shown in the right part of figure

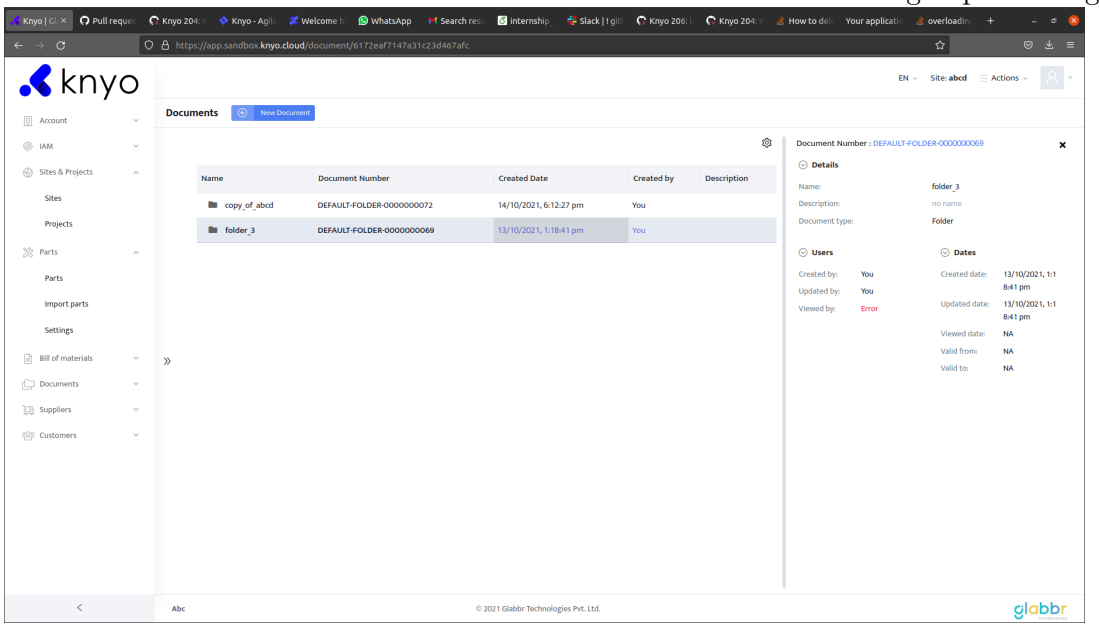


FIGURE 3.9: Create New document page

When we click the New document button in the background, This pops up which help to create folder

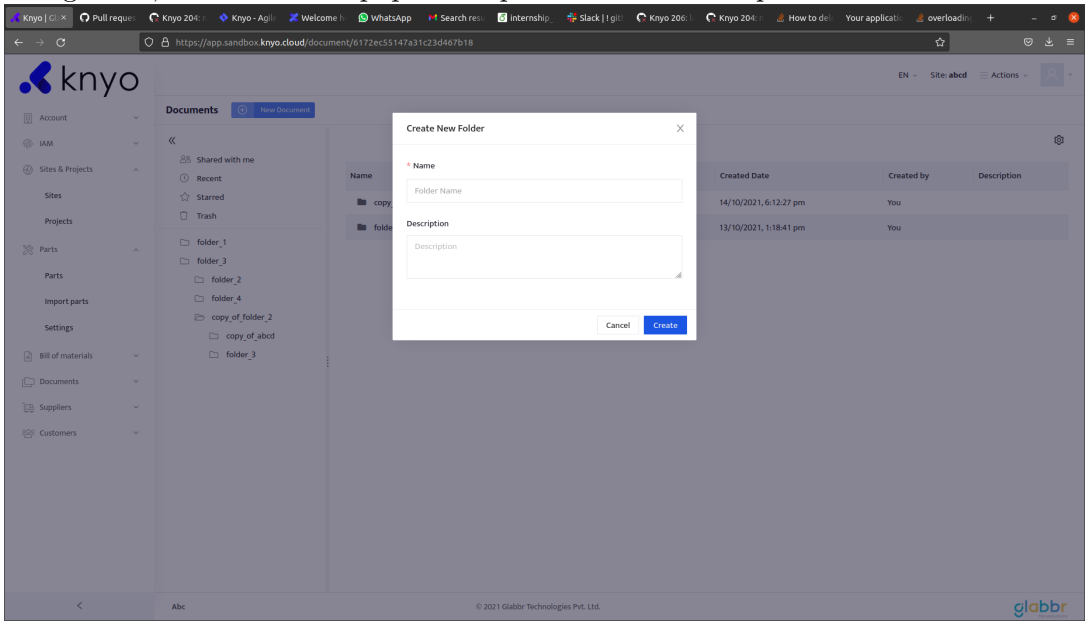


FIGURE 3.10: Document action Page

This page shows the different functionalities which can be used to take actions on the document. The first action is copy. Using this, the user can copy documents(file or folder) from one place to another. We can also select multiple documents to copy. This has not been implemented yet by Google drive or folder it. So this is one of the unique feature of our application. Second action is moving files. Similar to copy, we can move multiple files from one place to another place at once. Third action is deleting documents where one or more than one file can be deleted at once. Next action is share which has not been implemented yet. Then next action is Paste which gets highlighted when some documents is selected to copy or move. Then next action is new folder, which helps to create new folder in the selected file

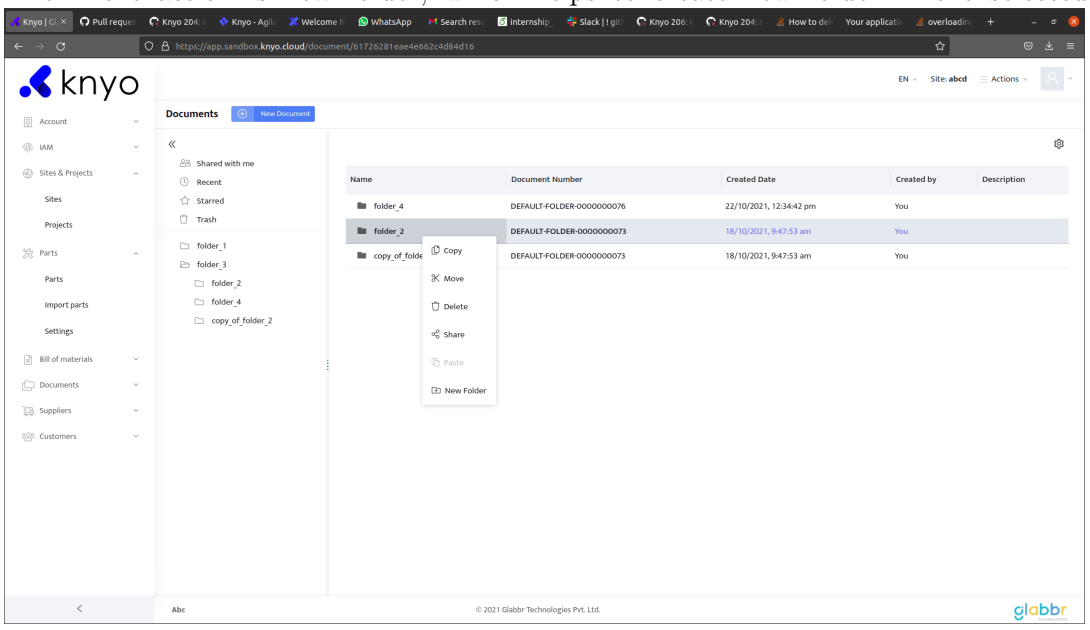


FIGURE 3.11: Part setting Page

These are some of the fields of part service which are to be implemented for document as well. Back-end for some of these feature has already been written, however front-end is not yet written. once you click on the buttons of the field, you will come to know how these should be added. This helps naive user to understand faster.

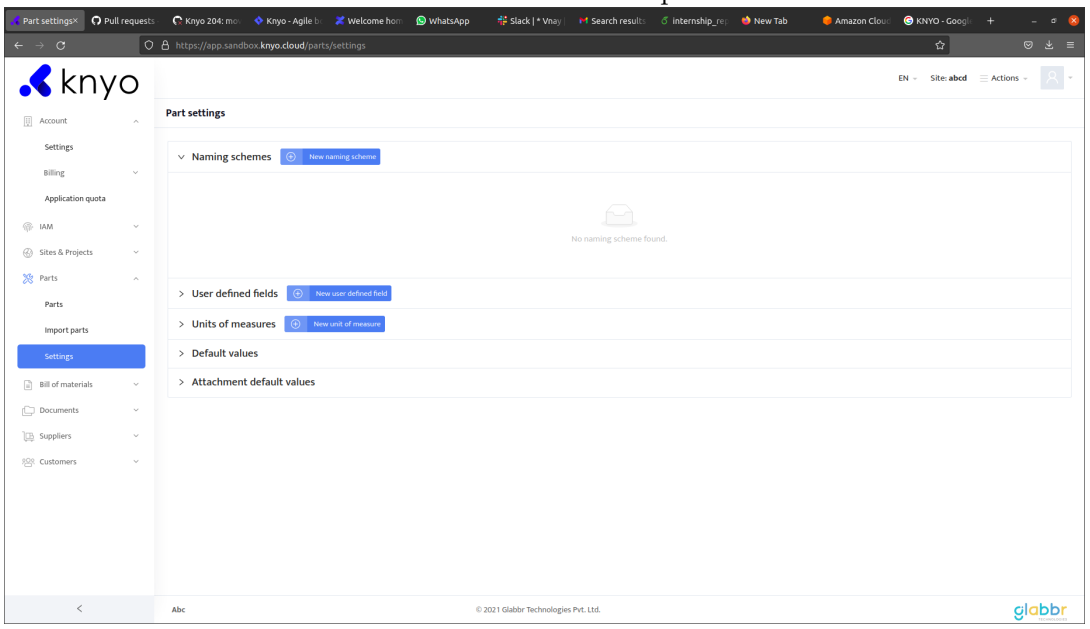
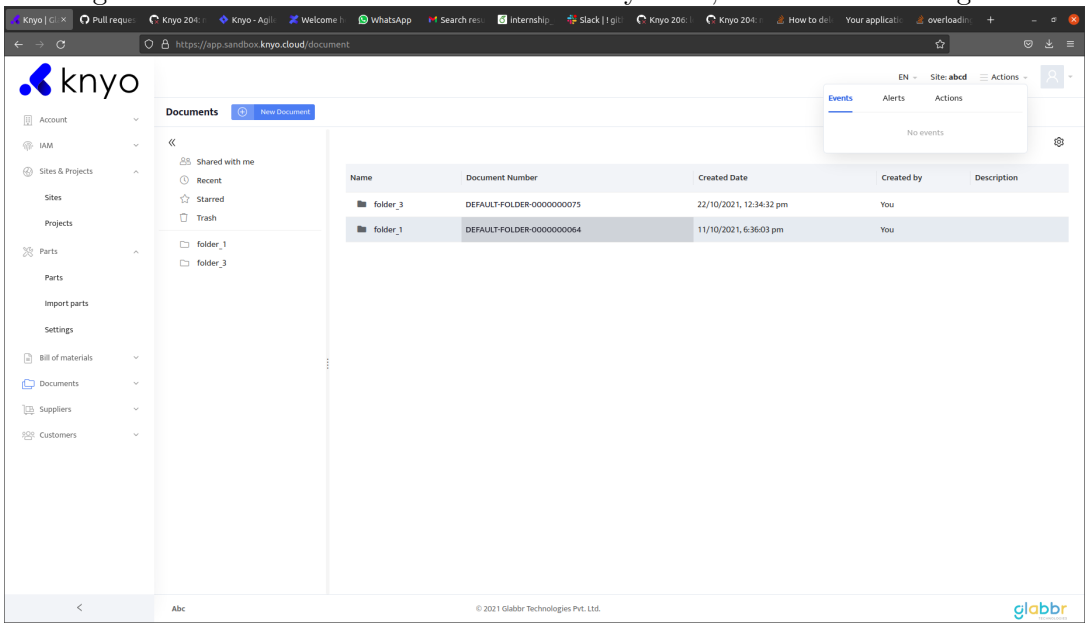


FIGURE 3.12: Events page

When a folder is being uploaded. this event section on the on the top of the page shows the percentage of file uploaded. Although this has not been written by me, but it's a good feature



3.5 APIs written by me

3.5.1 Create document(file/folder)

HTTP method - POST

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents?siteId=oOwDoPArmw

Request Body:
{
"name": "AmarCodes",
"parentId": "617659a83765154cdec6eb9d",
"isFolder": true,
"documentNumber": "doc-29",
"description": "This folder contains the codes written by Amar Kumar"
}

Response DTO:
{
"documentId": "6176a9eb0ec397394319556f",
"parentId": "617659a83765154cdec6eb9d",
"documentNumber": "doc-29",
"siteId": "oOwDoPArmw",
"name": "AmarCodes",
"description": "This folder contains the codes written by Amar Kumar",

”references”: [],
”needsReview”: false,
”isFolder”: true,
”isTrashed”: false,
”validFrom”: 0,
”validTo”: 0,
”createdBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”updatedBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”createdDate”: 1635166698571,
”updatedDate”: 1635166698571
}

HTTP Response Status: 201 Created

3.5.2 Get document by siteID

HTTP method - GET

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents?siteId=oOwDoPArmw

Request Body: No Request body

Response DTO:

{
”documentId”: ”617659a83765154cdec6eb9d”,
”siteId”: ”oOwDoPArmw”,
”name”: ”root”,

”children”: {
{
”documentId”: ”6176a9eb0ec397394319556f”,
”parentId”: ”617659a83765154cdec6eb9d”,
”documentNumber”: ”doc-29”,
”siteId”: ”oOwDoPArmw”,
”name”: ”AmarCodes”,
”description”: ”This folder contains the codes written by Amar Kumar”,
”references”: [],
”needsReview”: false,
”isFolder”: true,
”isTrashed”: false,
”validFrom”: 0,
”validTo”: 0,
”createdBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”updatedBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”createdDate”: 1635166698571,
”updatedDate”: 1635166698571
},
{
”documentId”: ”61765a6a7668cb2c59761470”,
”parentId”: ”617659a83765154cdec6eb9d”,
”documentNumber”: ”DEFAULT-DOC-0000000000”,
”siteId”: ”oOwDoPArmw”,
”name”: ”file1”,
”references”: [],
”status”: ”draft”,

”schemaVersion”: ”v1”,
”needsReview”: false,
”isFolder”: false,
”isTrashed”: false,
”validFrom”: 1635146244868,
”validTo”: 253402194600000,
”createdBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”updatedBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”createdDate”: 1635146344868,
”updatedDate”: 1635146786444
}
}
}

HTTP Response Status: 200 OK

3.5.3 Get document by documentID

HTTP method - GET

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents/
61765a6a7668cb2c59761470?siteId=oOwDoPArmw

Request Body: No Request Body

Response DTO:

{
”documentId”: ”61765a6a7668cb2c59761470”,

”parentId”: ”617659a83765154cdec6eb9d”,
”documentNumber”: ”DEFAULT-DOC-0000000000”,
”siteId”: ”oOwDoPArmw”,
”name”: ”file1”,
”status”: ”draft”,
”references”: [],
”schemaVersion”: ”v1”,
”needsReview”: false,
”isFolder”: false,
”isTrashed”: false,
”validFrom”: 1635146244868,
”validTo”: 253402194600000,
”createdBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”updatedBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”createdDate”: 1635146344868,
”updatedDate”: 1635146786444
}

HTTP Response Status: 200 OK

3.5.4 Lock document

HTTP method - PATCH

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents/
6176a9eb0ec397394319556f?siteId=oOwDoPArmw&lock=acquire

Request Body:

{
"reason": "for updating document"
}

Response DTO:

{
"documentId": "6176a9eb0ec397394319556f",
"parentId": "617659a83765154cdec6eb9d",
"documentNumber": "doc-29",
"siteId": "oOwDoPArmw",
"name": "AmarCodes",
"description": "This folder contains the codes written by Amar Kumar",
"lock": {
"lockedBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"reason": "for updating document",
"lockedDate": 1635170987237,
"autoReleaseAt": 0
},
"references": [],
"needsReview": false,
"isFolder": true,
"isTrashed": false,
"validFrom": 0,
"validTo": 0,
"createdBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"updatedBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",

”createdDate”: 1635166698571,
”updatedDate”: 1635166698571
}

HTTP Response Status: 200 OK

3.5.5 UnLock document

HTTP method - PATCH

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents/
6176a9eb0ec397394319556f?siteId=oOwDoPArmw&lock=release

Request Body: No Request Body

Response DTO:

{
”documentId”: ”6176a9eb0ec397394319556f”,
”parentId”: ”617659a83765154cdec6eb9d”,
”documentNumber”: ”doc-29”,
”siteId”: ”oOwDoPArmw”,
”name”: ”AmarCodes”,
”description”: ”This folder contains the codes written by Amar Kumar”,
”references”: [],
”needsReview”: false,
”isFolder”: true,

”isTrashed”: false,
”validFrom”: 0,
”validTo”: 0,
”createdBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”updatedBy”: ”fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38”,
”createdDate”: 1635166698571,
”updatedDate”: 1635166698571
}

HTTP Response Status: 200 OK

3.5.6 Patch document

HTTP method - PATCH

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents/
6176a9eb0ec397394319556f?siteId=oOwDoPArmw

Request Body:
{
”name”: ”Amar Folder”,
”description”: ”This is a folder created by Amar”
}

Response DTO:
{
”documentId”: ”6176a9eb0ec397394319556f”,

"parentId": "617659a83765154cdec6eb9d",
"documentNumber": "doc-29",
"siteId": "oOwDoPArmw",
"name": "Amar Folder",
"description": "This is a folder created by Amar",
"lock": {
"lockedBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"reason": "",
"lockedDate": 1635171603699,
"autoReleaseAt": 0
},
"references": [],
"needsReview": false,
"isFolder": true,
"isTrashed": false,
"validFrom": 0,
"validTo": 0,
"createdBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"updatedBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"createdDate": 1635166698571,
"updatedDate": 1635171633779
}

HTTP Response Status: 200 OK

3.5.7 Move document

HTTP method - PATCH

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents/
617659a83765154cdec6eb9d?siteId=oOwDoPArmw&action=move

Request Body:
{
"moveTo": "6176a9eb0ec397394319556f",
"moveIds": ["61765a6a7668cb2c59761470"],
"action": "skip"
}

Response DTO:
{
"documentId": "61765a6a7668cb2c59761470",
"parentId": "6176a9eb0ec397394319556f",
"documentNumber": "DEFAULT-DOC-0000000000",
"siteId": "oOwDoPArmw",
"name": "file1",
"status": "draft",
"lock": {
"lockedBy": "",
"reason": "",
"lockedDate": 0,
"autoReleaseAt": 0

},
"references": [],
"schemaVersion": "v1",
"needsReview": false,
"isFolder": false,
"isTrashed": false,
"validFrom": 1635146244868,
"validTo": 253402194600000,
"createdBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"updatedBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"createdDate": 1635146344868,
"updatedDate": 1635146786444
}

HTTP Response Status: 200 OK

3.5.8 Copy document

HTTP method - PATCH

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents/6176a9eb0ec397394319556f?s

Request Body:
{
"copyTo": "6176a9eb0ec397394319556f",
"copyIds": ["61765a6a7668cb2c59761470"]
}

Response DTO:

{
"documentId": "6176c11732d934cf10fa41ff",
"parentId": "6176a9eb0ec397394319556f",
"documentNumber": "DEFAULT-DOC-0000000000",
"siteId": "oOwDoPArmw",
"name": "copy_of_file1",
"status": "draft",
"references": [],
"schemaVersion": "v1",
"needsReview": false,
"isFolder": false,
"isTrashed": false,
"validFrom": 1635146244868,
"validTo": 253402194600000,
"createdBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"updatedBy": "fcdad0d5-dc2d-4d72-acb1-7cacc37a8b38",
"createdDate": 1635146344868,
"updatedDate": 1635146786444
}

HTTP Response Status: 201 Created

3.5.9 Delete document

HTTP method - DELETE

Request URL:
https://api.sandbox.knyo.cloud/api/v1/documents?
siteId=oOwDoPArmw&forceDelete=true

Request Body:
{
"documentIds": ["6176a9eb0ec397394319556f"]
}

Response DTO: No Response DTO

HTTP Response Status: 204 No Content

3.6 Features to be implemented from UI side

Some more feature whose back-end has been written by me, however they are yet to be produced on front-end.

These are starring documents. This feature helps to star any important document so that whenever needed, it can be found easily. Other feature is recycle bin. when we delete documents, they can be moved to recycle bin instead of deleting from the database.
One more feature is locking and unlocking the document. This prevents accidental changes in the document. So if you want change some information for the document, you need to lock it first, hence it provides safe modification of documents.

Chapter 4

Results and Conclusions

4.1 Results

A final Design for our website which is more appealing and user friendly has been developed. A front end for our cloud application "Knyo" where users or Companies can store the design and manufacturing details about its product and Easy to understand and manageable back-end has been written. Although, our product is in development process as some features are yet to be added, still it is appealing and user-friendly cloud application.

4.2 Conclusions

A more appealing UI can draw more users and also make their experience pleasant. The user experience with the cloud app has to be good and easy so that the users who visit for the first time do not have any problem trying out different things and the expert users should not wait for trivial task, all these have been taken care of in our product.

Chapter 5

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