

# Data Drive - DFS

InterBatch

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# Over View

*Enabling  
users to  
create, share  
and store  
Data across  
the DFS  
ecosystem*

The Data Drive project aims to provide a dashboard for all the users of the DFS ecosystem to store, access and share their Datasets across the user base. The dashboard enables the user to upload, download, manage the data as well as share and moderate the shared data with different users with varying permissions of the resource that ensures privacy and protection of the shared resource.

# System Requirements

## Tech Stack:

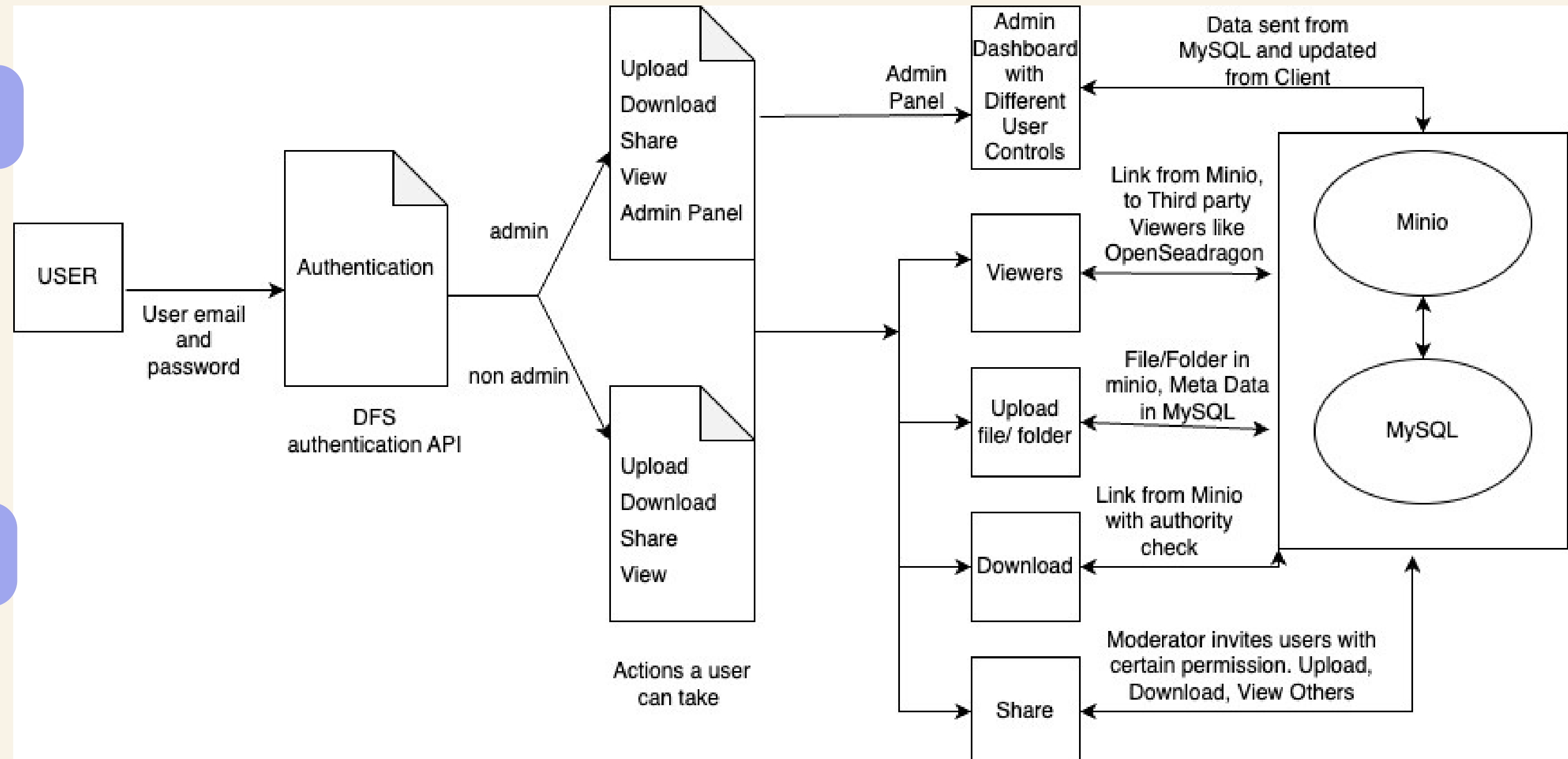
1. Frontend: ReactJS
2. Backend: NodeJS, expressJS
3. Database: MySQL
4. Cloud Storage: Minio
5. CSS frameworks: Bootstrap, MaterialUI, vanilla CSS
6. Testing: Postman, Mocha

The system requires DFS authentication APIs to access the user base. Also both the client and the server side requires package managers like npm to install the required dependencies

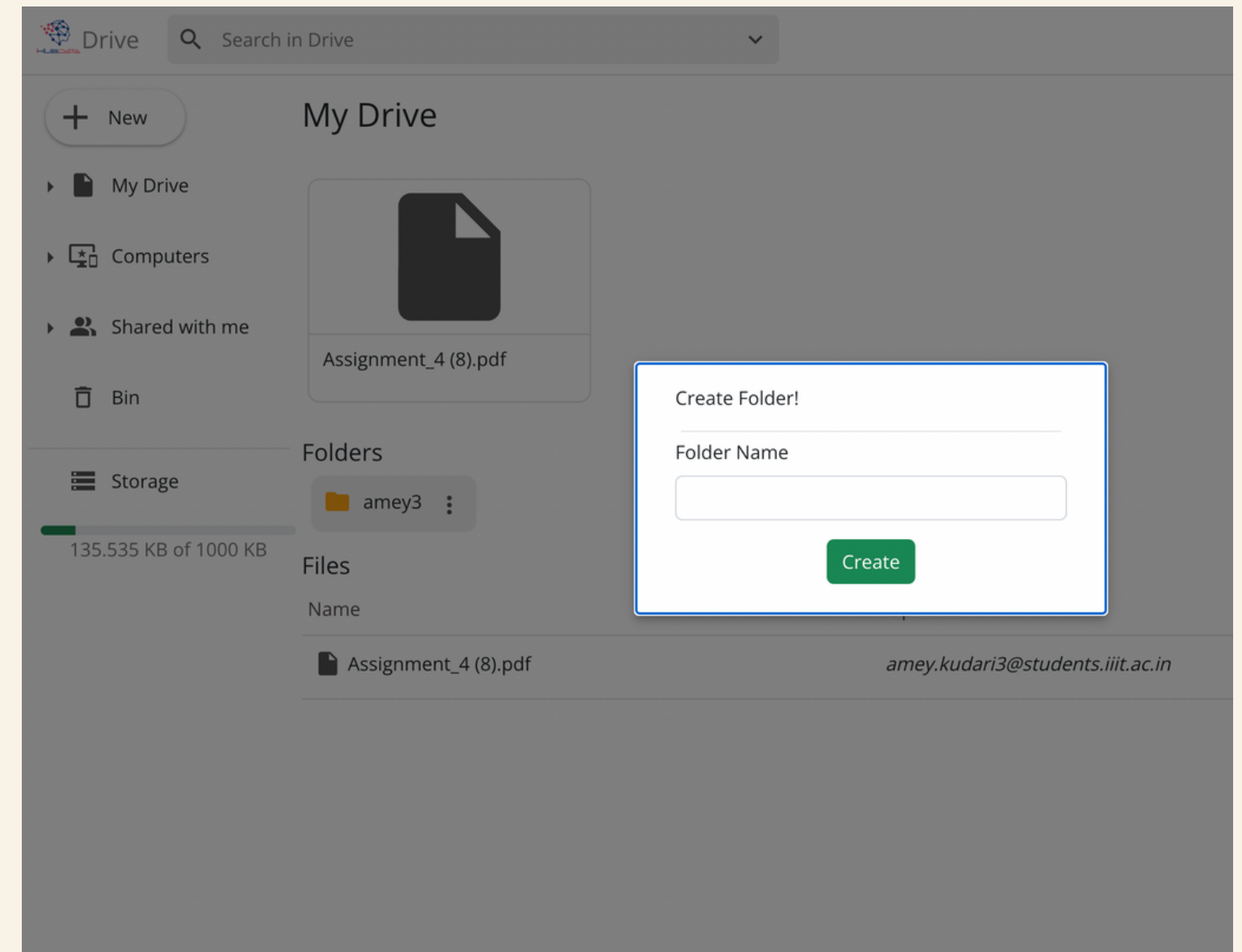
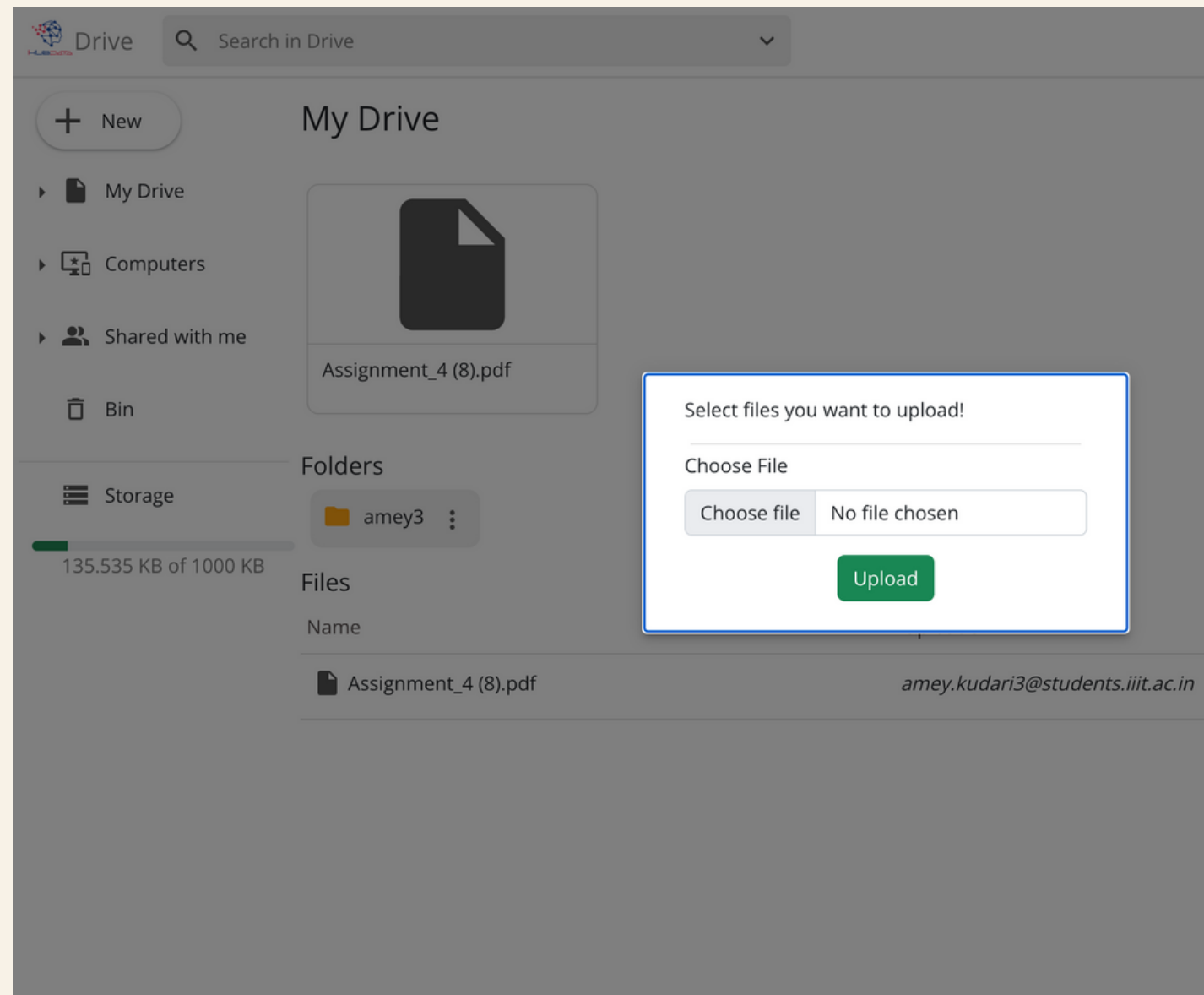


# USER FLOW

*The user has control over the flow and navigation of the app. Each component is requires authorization of the user.*



# Upload



*The Files can be Uploaded or the folders be created. Files stored in Minio in user buckets along a specified path. The folders and files metadata stored in mySQL.*

# Download

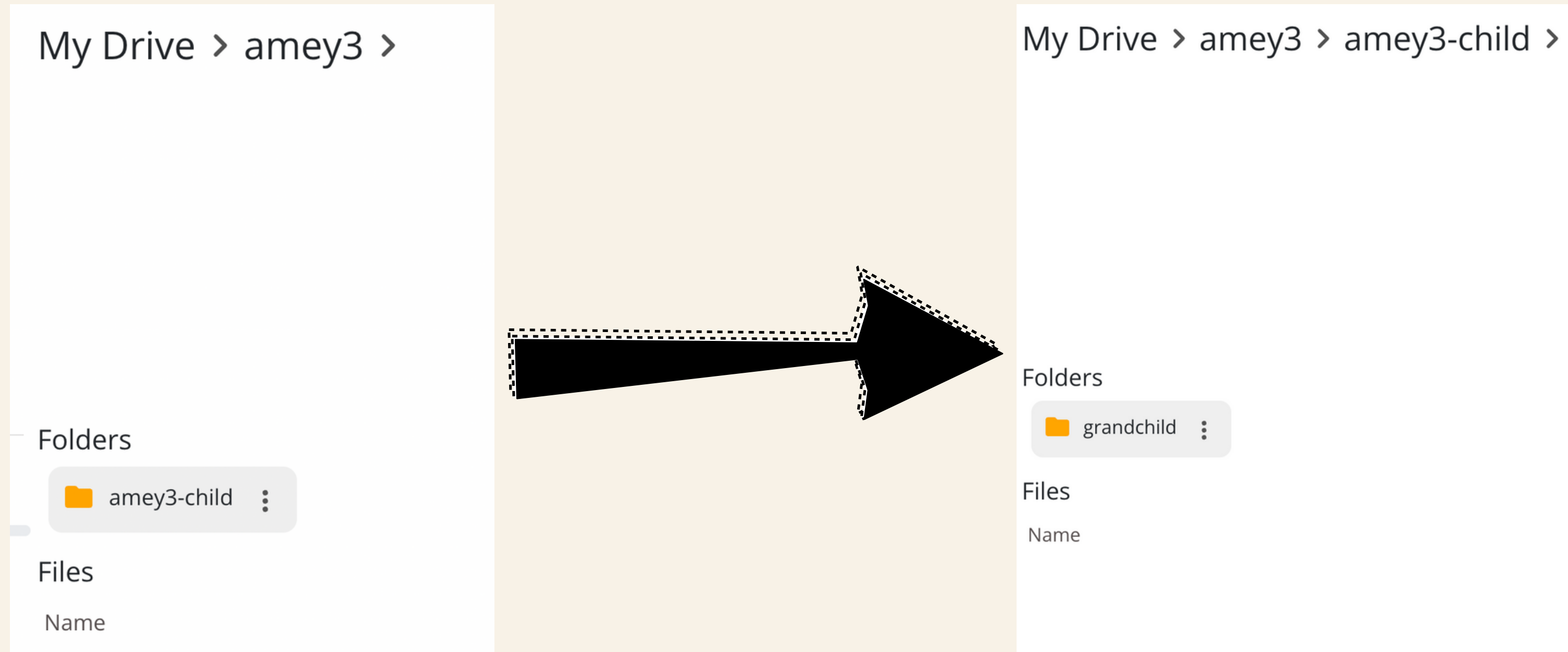
The screenshot displays the Google Drive web interface. On the left, the 'My Drive' section shows a file named 'Assignment\_4 (8).pdf'. Below this, the 'Files' section lists the same file. A hand-drawn circle and arrow point to the download icon (a cloud with a downward arrow) next to the file name in the 'Files' list. On the right, a 'Recent Download History' panel is open, showing a list of downloaded files with their names, sizes, and timestamps. The files listed are: 'Assignment\_4 (8) (1).pdf' (132 KB, 2 minutes ago), 'Flow.jpg' (Removed), 'Data-Stack-Hero-Census-Blog-1100x616.png' (111 KB, 1 hour ago), 'Top\_10\_Tools\_to\_have\_in\_your\_Marketing\_Tech\_Stack\_in\_2022-01.png' (126 KB, 1 hour ago), 'amey.kudari2@students.iiit.ac.in\_Lecture 8 (1) (1).pptx' (41.3 KB, 14 hours ago), 'amey.kudari2@students.iiit.ac.in\_Lecture 8 (1).pptx' (41.3 KB, 14 hours ago), and 'Screenshot 2023-11-23 at 5.29.49 PM'. At the bottom of this panel is a link to 'Full Download History'.

Name	Uploader	Last modified	File size
Assignment_4 (8).pdf	amey.kudari3@students.iiit.ac.in	31 Oct 2023	132.4 kB

*The Files can be downloaded from 'My Drive' directly. The link is access from Minio by the backend and sent to the Client end. For shared files, User needs download permission for downloading that file*

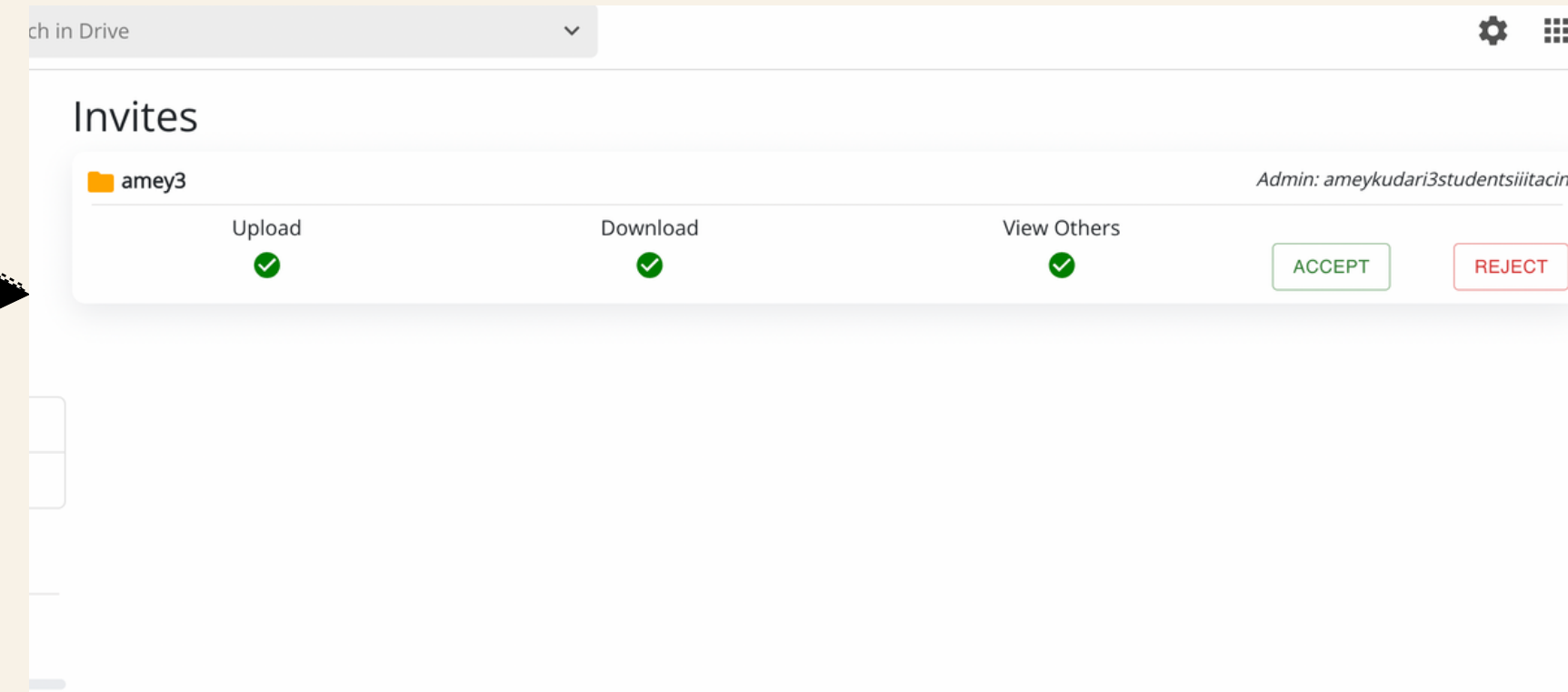
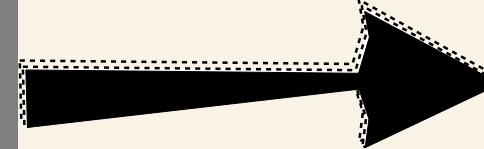
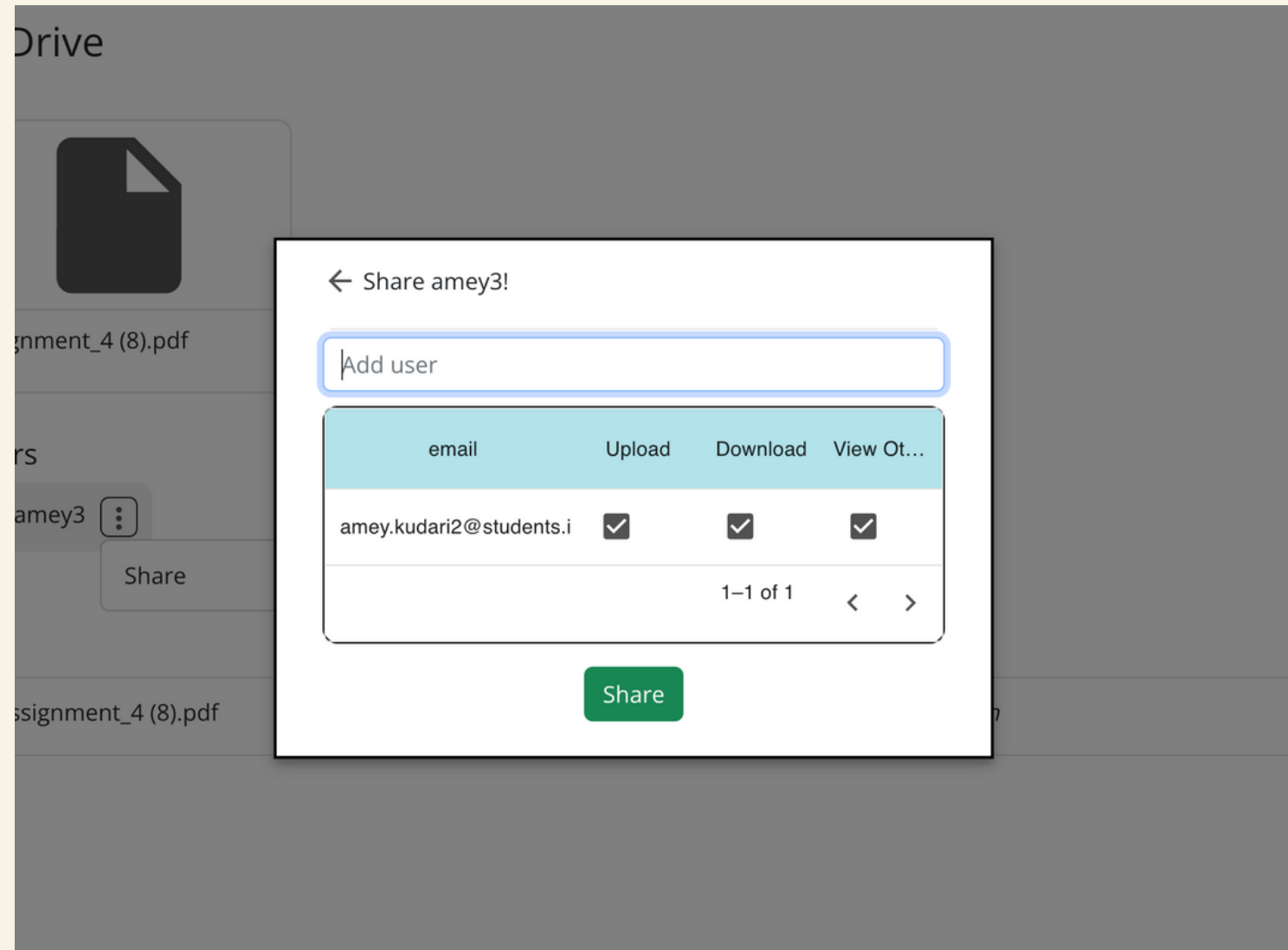


# Directory Navigation



*The directory structure can be easily navigated from any folder to any ancestor folder. Thus files can be organised and accessed effectively*

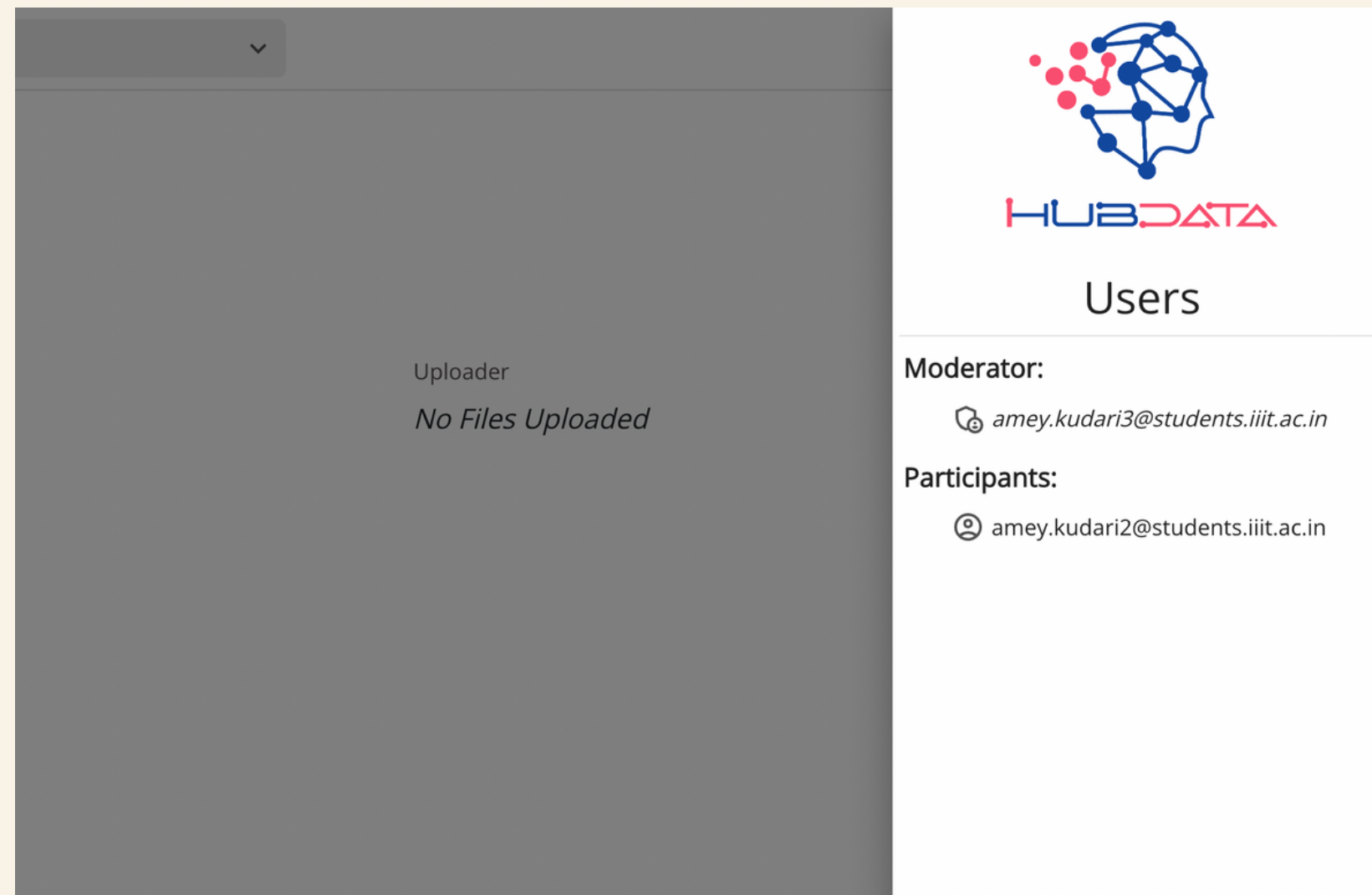
# Sharing: 1) Sending Invitations



*The Moderator adds users to the shared folder and sends them invites. The invited users view the invites, accepts/rejects them. Upon acceptance they can access the shared folder in 'My shared' section*



# Sharing: 2) Shared folders



My Shared > amey3 >

Folders

amey3-child

Files




Name

Uploader

Screenshot 2023-12-02 at 5.39.35 PM.png	amey.kudari2@students.iiit.ac.in
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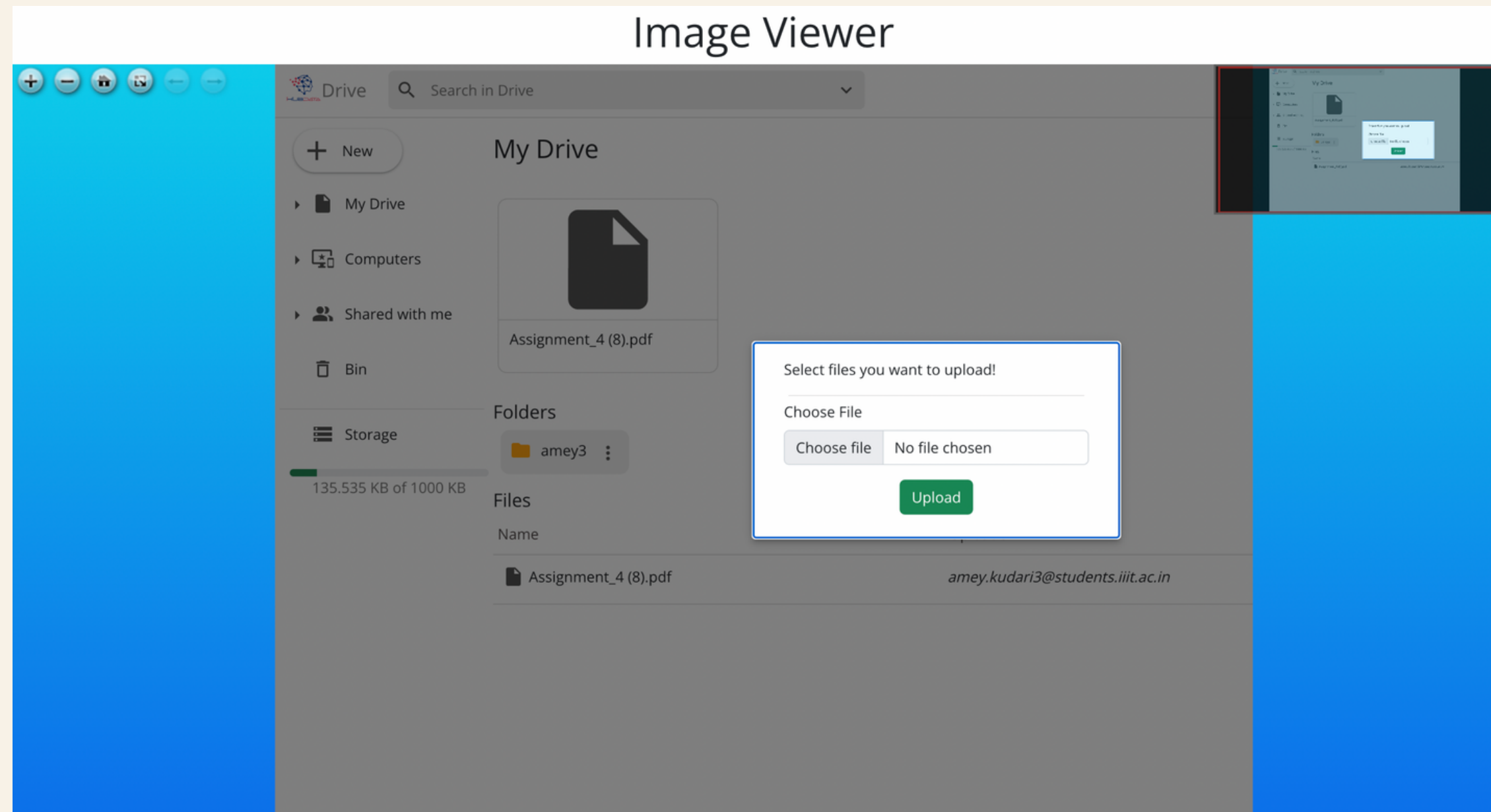
Files

Name

Screenshot 2023-12-02 at 5.39.35 PM.png	  
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Moderators set 3 permissions: Upload, Download and View others for each user. With these permissions, the user can upload files to the folder, download a file, view other users in the shared folder. This makes sharing possible securely

# File Viewers



*The app provides extensibility to include Third party apps for File viewing. The corresponding file viewers can be integrated from within the DFS ecosystem itself and used in the Data Drive*

# Admin Dashboard

The screenshot displays the Admin Dashboard interface. On the left, a sidebar contains the 'Admin Dashboard' title and two menu items: 'Users' (selected) and 'Computers'. The main content area is titled 'Users' and features a table with the following columns: ID, email, Current Storage(KB), and Max Storage(KB). The table lists three users, with the second user selected. Each row includes a progress bar for current storage and a control for maximum storage, consisting of a dropdown menu and an 'Upgrade' button. The footer of the table shows '1 row selected', 'Rows per page: 5', and '1-3 of 3' with navigation arrows.

ID	email	Current Storage(KB)	Max Storage(KB)
1	amey.kudari2@students.iiit.ac.in	198.105 KB	1000 KB Upgrade
2	amey.kudari3@students.iiit.ac.in	306.123 KB	2000 KB Upgrade
3	gokum1037@gmail.com	0 KB	1000 KB Upgrade

1 row selected Rows per page: 5 1-3 of 3

*The Admin Dashboard is accessible only to users with 'admin' role. The dashboard provides admins with ability to view and manage users and resources. Eg. in the current version, admins have access to update max storage allotted to each user.*

# Extending the Work

The data drive project is huge and numerous features can be explored and incorporated into the design. Some of the earliest in plans are:

- **Multiple File Uploads:** Given access to designated Minio Cloud Storage, larger and multiple file uploads needs to be explored
- **Invite through Links:** Taking Google drive as example, sharing can be extended through links as well.
- **Integration of more Viewers:** The app only has the Histopathology Image viewer as of now. We require more external apps connected

The app contains build scripts for deployment on the DFS servers. It can be run the same way any other dfs system is run and can be extended further with ease given the same tech stack.