



Centurion
UNIVERSITY
*Shaping Lives...
Empowering Communities...*

School: Campus:

Academic Year: Subject Name: Subject Code:

Semester: Program: Branch: Specialization:

Date:

Applied and Action Learning

(Learning by Doing and Discovery)

Name of the Experiment : Store with IPFS – Decentralized File Upload

Coding Phase : Pseudo Code/Flow Chart/Algorithm

- Start
- Create a `.env` file with API credentials.
- Import required modules.
- Define an asynchronous `uploadToIPFS()` function.
- Inside the function:
 - Read the file using `fs.createReadStream`.
 - Append to `FormData`.
 - Post to Pinata endpoint.
- Handle response:
 - Display IPFS hash and gateway link.
- Handle errors.
- End

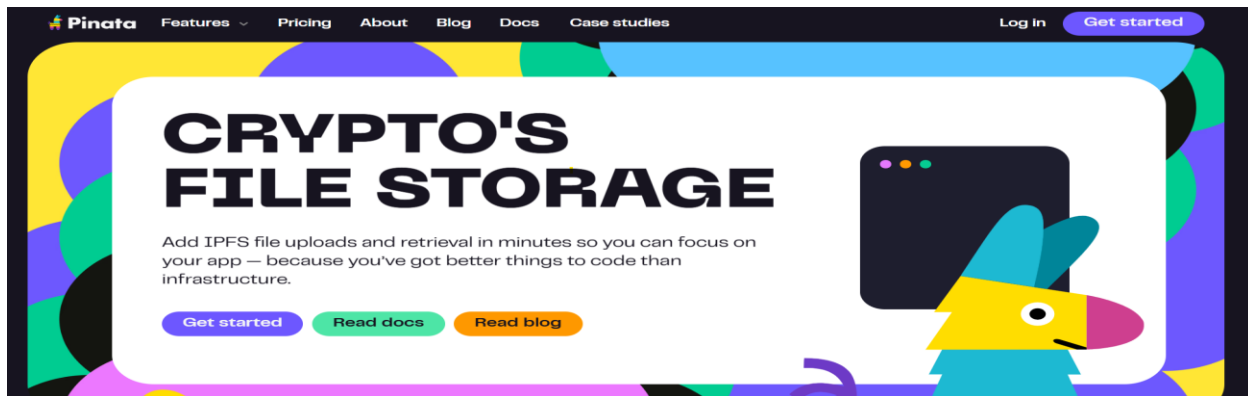
Apparatus/Software Used:

- Node.js
- Axios
- Dotenv
- Form-data
- Pinata

Testing Phase:

Step 1 : Open Pinata Website

- Visit pinata.cloud
- Login or sign up with your e-mail



Step2: Create api key

- Click api keys options
- Click new key
- Enter key name and click on admin option and click create

CREATE API KEY

Select admin or customize permissions.

Key name

Sworna



Admin

CUSTOMIZE PERMISSIONS

^ V3 RESOURCES

RESOURCE NAME

PERMISSIONS

Files

None

Read

Write

Groups

None

Read

Write

Gateways

None

Read

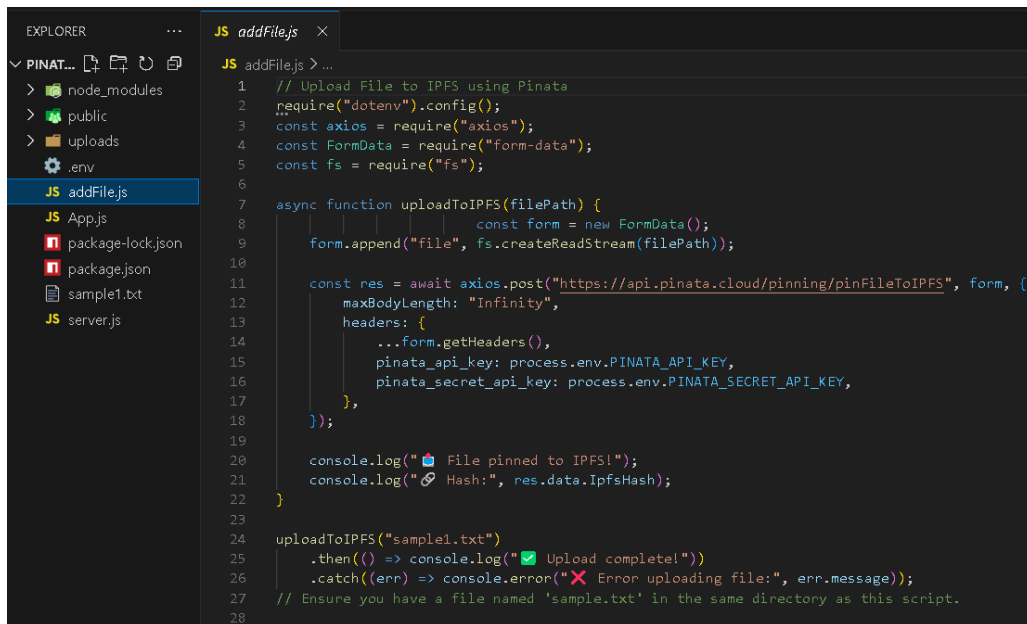
Write

Cancel

Create

Step3 : Open vs code

- Open vs code with a folder .
- Create a file name is addfile.js
- Write the code
- Create a other file .env and write the your
-PINATA_API_KEY
-PINATA_SECRET_API_KEY
-PINATA_JWT_TOKEN



```
1 // Upload File to IPFS using Pinata
2 require("dotenv").config();
3 const axios = require("axios");
4 const FormData = require("form-data");
5 const fs = require("fs");
6
7 async function uploadToIPFS(filePath) {
8     const form = new FormData();
9     form.append("file", fs.createReadStream(filePath));
10
11     const res = await axios.post("https://api.pinata.cloud/pinning/pinFileToIPFS", form, {
12         maxLength: "Infinity",
13         headers: {
14             ...form.getHeaders(),
15             pinata_api_key: process.env.PINATA_API_KEY,
16             pinata_secret_api_key: process.env.PINATA_SECRET_API_KEY,
17         },
18     });
19
20     console.log("📁 File pinned to IPFS!");
21     console.log("🔗 Hash:", res.data.IpfsHash);
22 }
23
24 uploadToIPFS("sample1.txt")
25     .then(() => console.log("✅ Upload complete!"))
26     .catch((err) => console.error("❌ Error uploading file:", err.message));
27 // Ensure you have a file named 'sample.txt' in the same directory as this script.
28
```

Implementation Phase: Final Output (no error)

1.Open terminal

•Write code

- Npm init -y

- npm install axios dotenv form-data

- node addfile.js

2.Out put

```
{
  IpfsHash: 'QmPzxMqJYPUJarnkEBrzsv9CbPabUMxTv8w7hhEeWuWRvS',
  PinSize: 31,
  Timestamp: '2025-07-31T17:40:45.189Z',
```

ID: 'f5b06438-2dd7-4dd0-ac96-194919100a97',

Name: 'sample.txt',

NumberOfFiles: 1,

MimeType: 'text/plain',

GroupId: null,

Keyvalues: null

}

```
PS C:\Users\abina\ss\OneDrive\Desktop\web development\PINATA IPFS> node addfile.js
[dotenv@17.2.1] injecting env (2) from .env -- tip: ⚙️ suppress all logs with { quiet: true }
📁 File pinned to IPFS!
🔗 Hash: QmbFMke1KXqnYyBBWxB74N4c5SBnJMVAiMNRcGu6x1AwQH
✅ Upload complete!
```

```
PS C:\Users\abina\ss\OneDrive\Desktop\web development\PINATA IPFS> npm start

> fff@1.0.0 start
> node server.js

[dotenv@17.2.1] injecting env (2) from .env -- tip: 🔒 prevent committing .env to code: https://dotenvx.com/precommit
🔥 Server running at http://localhost:3000
```



Upload File to IPFS

Choose File

No file chosen

Upload



Upload File to IPFS

Choose File

Greedy Appr... Coding.pptx

Upload

✅ Uploaded successfully!

<https://gateway.pinata.cloud/ipfs/Qma7oZEcYE4bXqMB6if8W9WveAssiWh2qWRoHif46UtBBm>

Observations

- File was uploaded successfully to IPFS using **Pinata's Web UI**
- A unique **CID** was assigned to the file
- Anyone with the **gateway link** can access the file
- No coding or local node was required — just browser + internet
- Very useful for storing and sharing decentralized files

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	50		

Signature of the Student:

Name :

Regn. No. :

Signature of the Faculty:

Page No.....

** As applicable according to the experiment.
Two sheets per experiment (10-20) to be used.*