Cloudless

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A decentralized P2P file storage platform
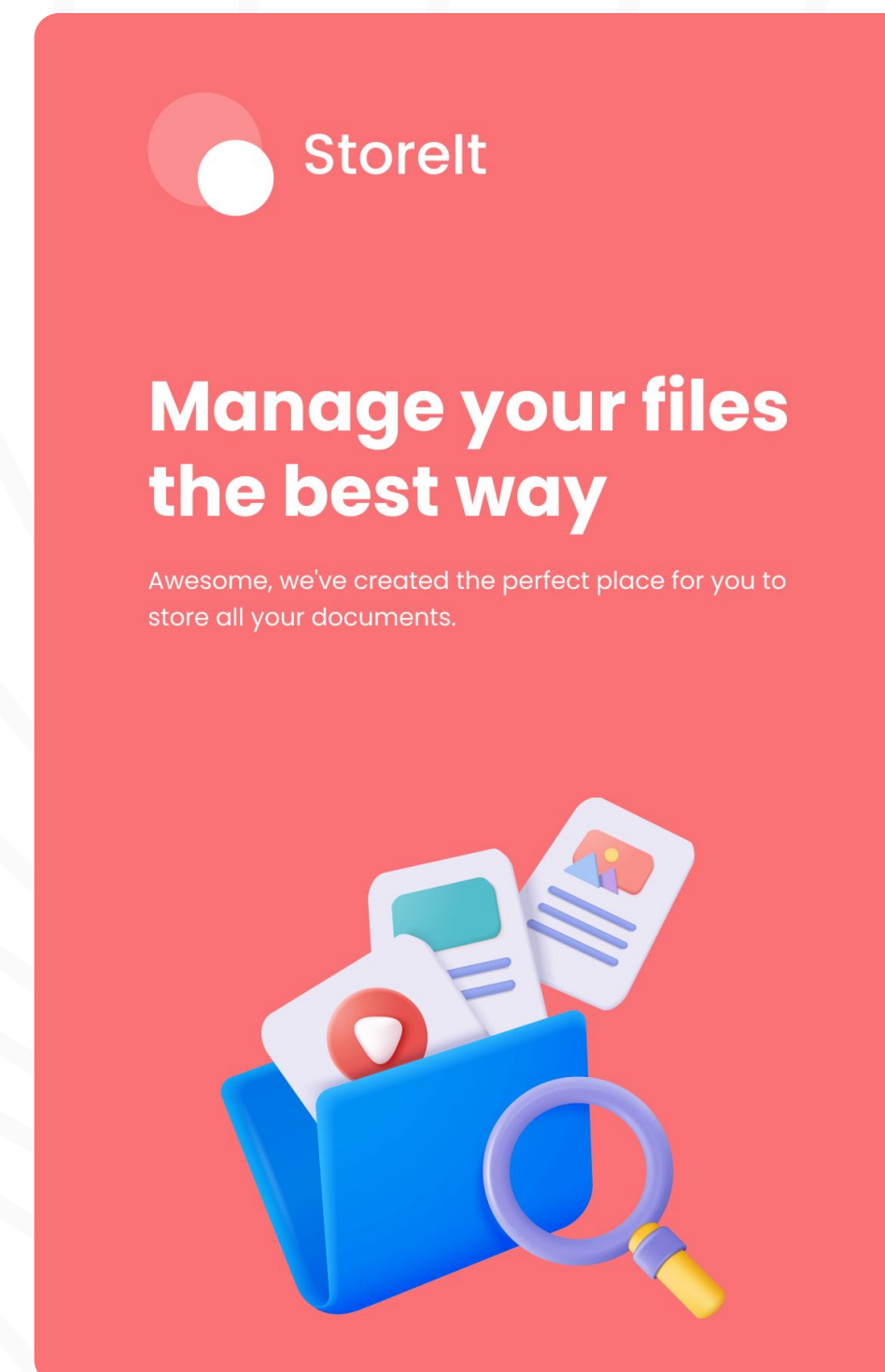
2024

The idea of the project

Create a P2P file storage platform where users:

They store their data.

Share files privately.

Features:

Decentralization.

Encryption and replication.

Data integrity checking.

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StoreIt

Manage your files the best way

Awesome, we've created the perfect place for you to store all your documents.

Login

Email
Enter your Email
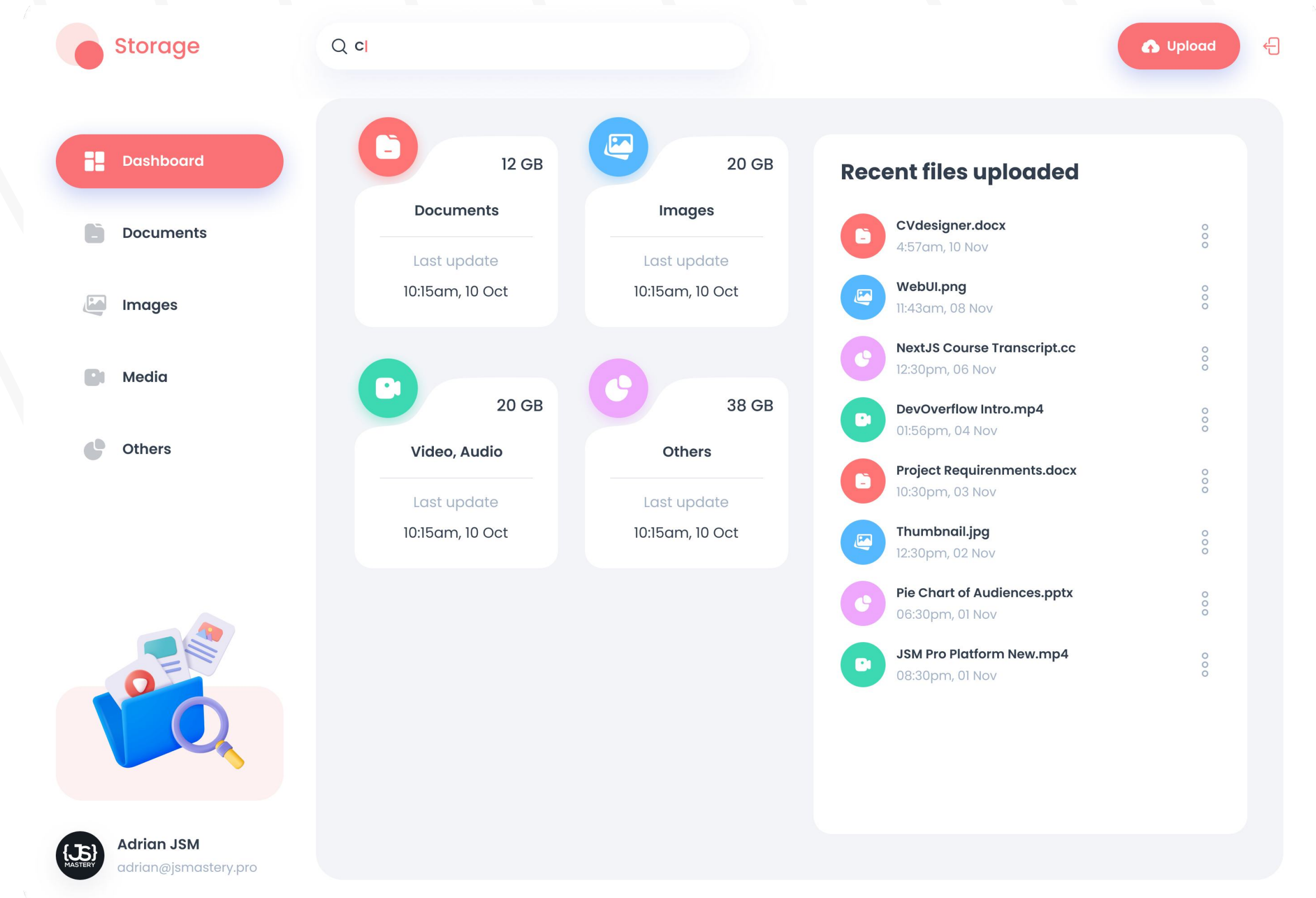
Login

How does it work?

1. Uploading:

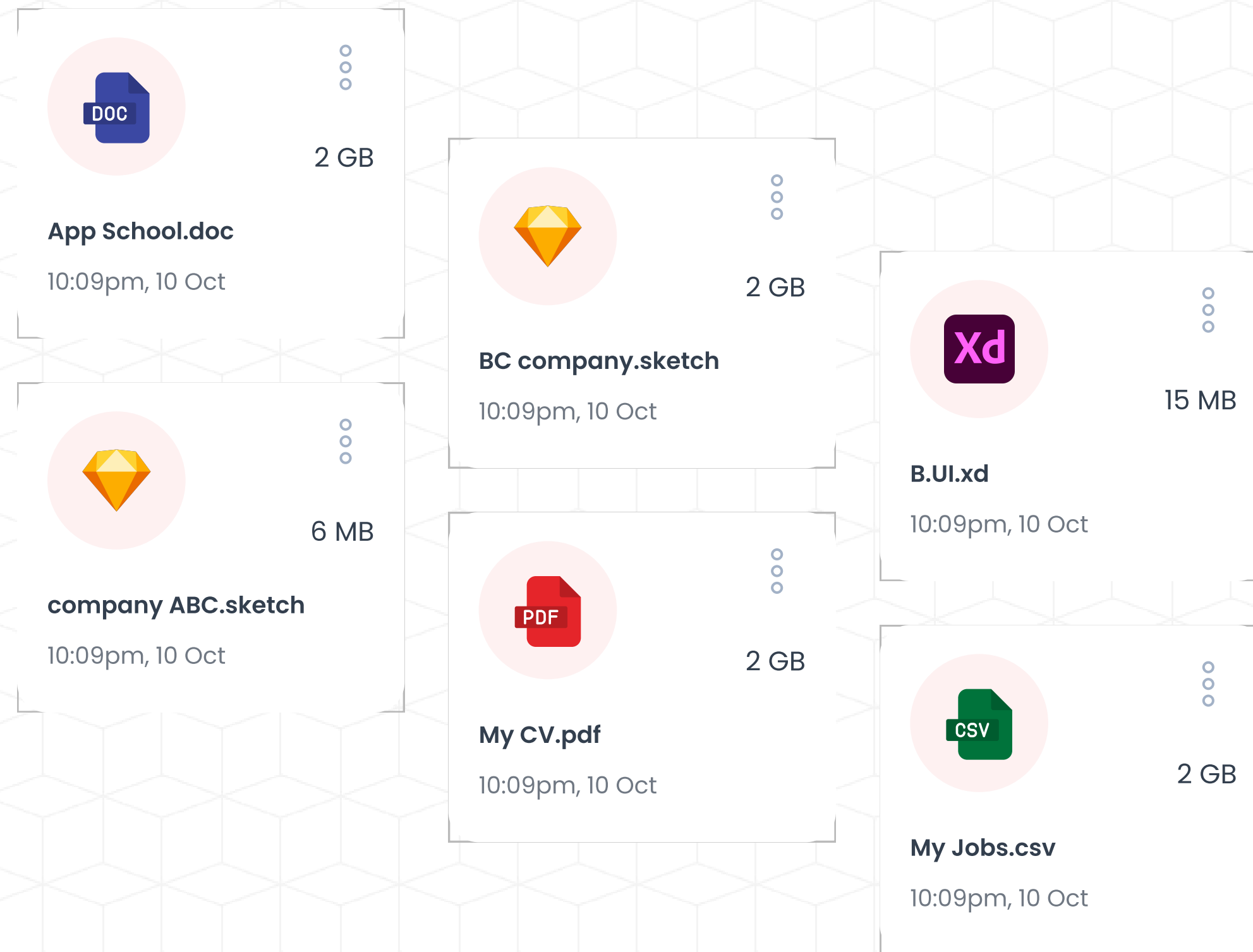- Files are split into chunks and encrypted (AES-256).

2. Storage:

- Chunks are distributed among the nodes.
- Replication is ensured (3-5 copies).

3. Request:

- Searching for chunks via DHT.
- Parallel file download and build.

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Key Features

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App School.doc
2 GB
10:09pm, 10 Oct

BC company.sketch
2 GB
10:09pm, 10 Oct

B.UI.xd
15 MB
10:09pm, 10 Oct

company ABC.sketch
6 MB
10:09pm, 10 Oct

My CV.pdf
2 GB
10:09pm, 10 Oct

My Jobs.csv
2 GB
10:09pm, 10 Oct

- **Decentralization:** No servers - data on nodes.
- **Resource Equity:** Store as much as you load.
- **Redundancy:** Data replicas for reliability.
- **Encryption:** Access only by owner.
- **Data Validation:** Proof of Storage.

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Problems and solutions

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Problems

Solutions

Offline nodes

Low speed

Deleting other people's files

Legal risks

Limited space

All data on the server

Replication to 3-5 nodes.

Parallel loading of chunks.

Proof of Storage.

Full data encryption.

Volume limitation on node resources.

Maximize data privacy.

Architecture

- **Network:**

  WebRTC/libp2p, distributed hash table (DHT).

- **Encryption:**

  AES-256 for data, RSA for keys.

- **Storage:**

  Replication and hash sums for integrity.

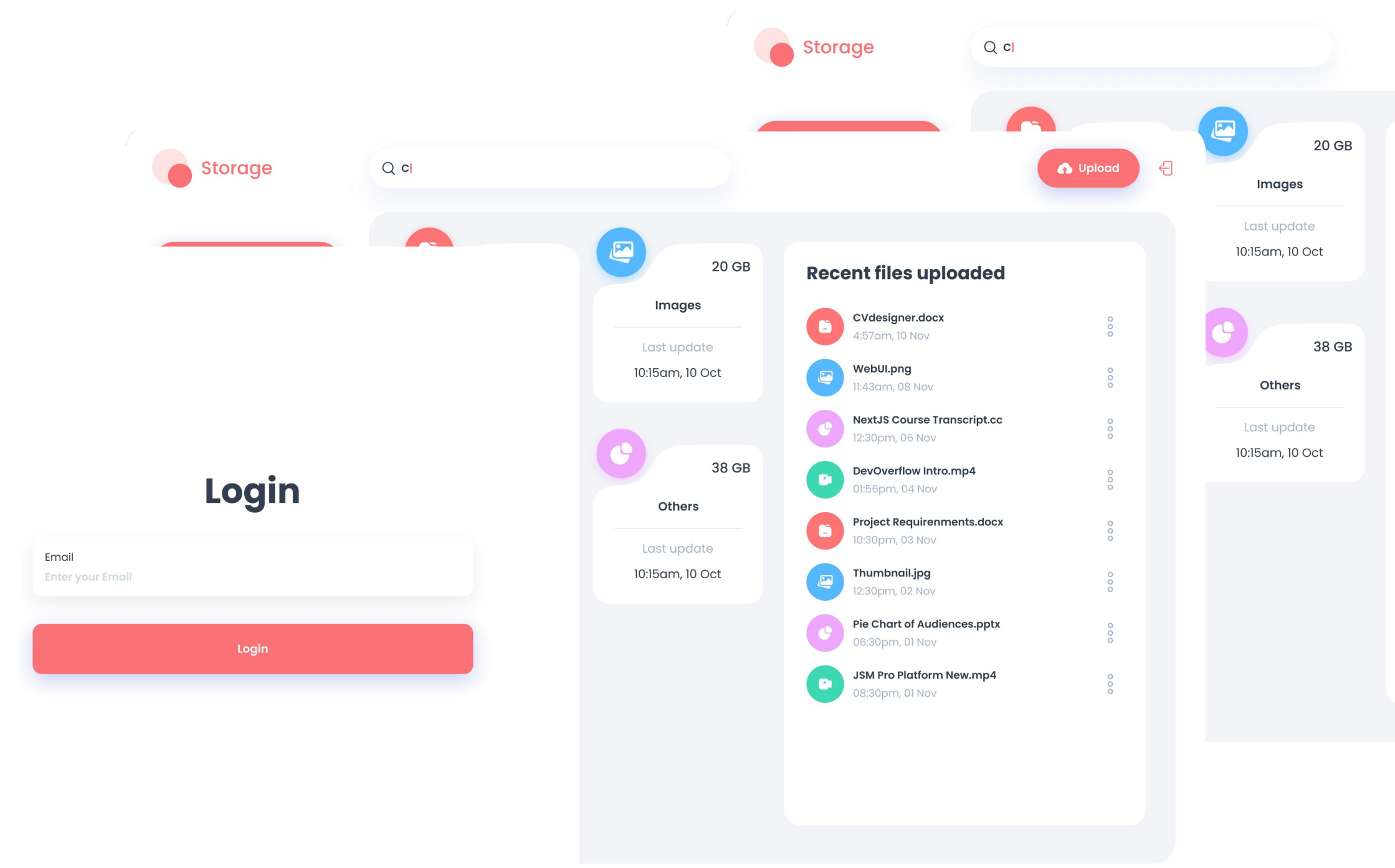- **Interface:**

  Pear runtime + UI (React) + Rest (FastApi)

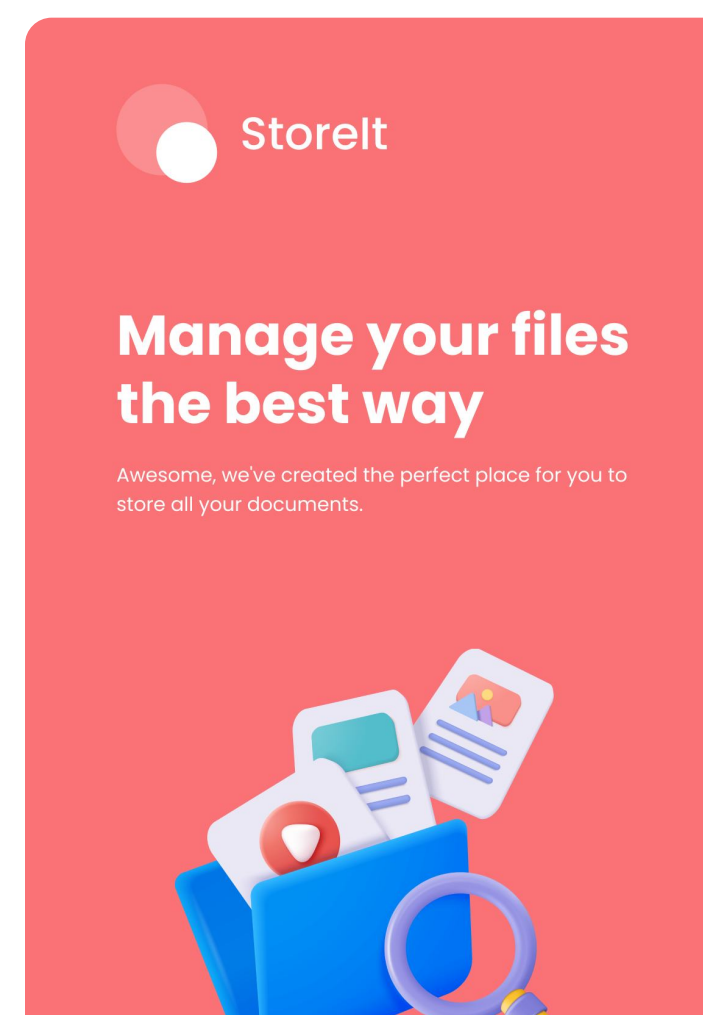2024

Advantages

Savings: No server costs.

Reliability: Replication and redundancy.

Privacy: Only the owner has access to the data.

Scalability: Easy to add nodes.

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Conclusion

P2P platform:

Privacy and Independence.

Equal opportunity for all.

Resilient, secure file storage.

Suitable for those who value
privacy and high reliability.

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Thank you for your attention!

Decentralized P2P file storage platform

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