Requirement Gathering and Analysis Phase
Solution Architecture

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Solution Architecture:

The components of the file storage system are as follows:
• **Clients (Users):** These are the people or programs that communicate with it to upload, download, manage, and view their data.
• **API Gateway:** Serves as a single point of entry for web applications or clients' API requests.
The Authentication Service manages user registration and login, and it issues tokens for safe access to storage features.
The Authorization Service is responsible for determining the permissions of users to access and manage files and folders on the storage system.
• **Metadata Store:** Holds details about files that have been uploaded, including names, sizes, timestamps, and sometimes user-defined tags or descriptions.
• **Cloud Storage:** The core mechanism for storing data that is actually saved on disk. This might be a distributed file system, an Azure Blob Storage account, or a cloud storage service (like Amazon S3).
Interactions: Using API requests, clients communicate with the web application or the API Gateway directly.
• Requests are routed to the relevant backend services (authentication, authorization) via the API Gateway.
• Tokens for allowed access are provided by the Authentication Service, which also checks user credentials.
• The Authorization Service establishes whether a user is authorized to carry out the specified file activity (such as upload, download, or deletion).
• File uploads and downloads between clients and the object storage system are managed by the File Transfer Service.
• The metadata related to uploaded files is stored and retrieved via the Metadata Store.

Solution Architecture Diagram:

User Service

Cloudinary

Register

Messaging

User

User Interface

Bcrypt

LOGIN

Search for House

API Gateway

Routing API Requests

Use Location

Authentication

Backend

Update and Retrieve

DATABASE