SEFS:
Secured Encrypted File System

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ABSTRACT

SEFS is a Secured and Encrypted Distributed File System where users can perform multiple operations such as Store, read, write, create, delete, modify files. It helps in keeping the files and directories confidential and it prevents the malicious server from performing any kind of activity and keeps the Data stored peer to peer encrypted.

DESIGN

As we are trying to design a P2P file system because there is no central server for processing requests and it depends on the underlying architecture where it helps us to get to know all the peers which have requested the object/file and the transfer of file takes place directly between these two peers. There are three such underlying architectures but here we are going to apply the Centralized Directory.
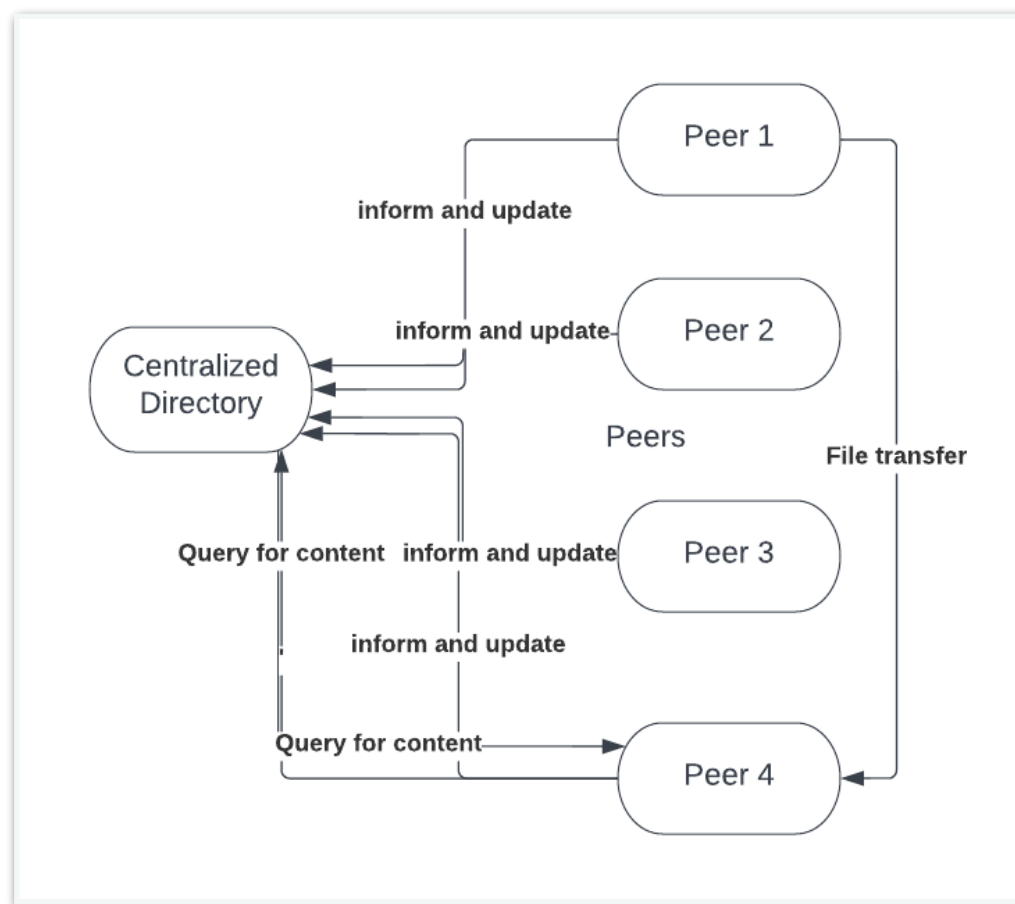
UML DIAGRAM
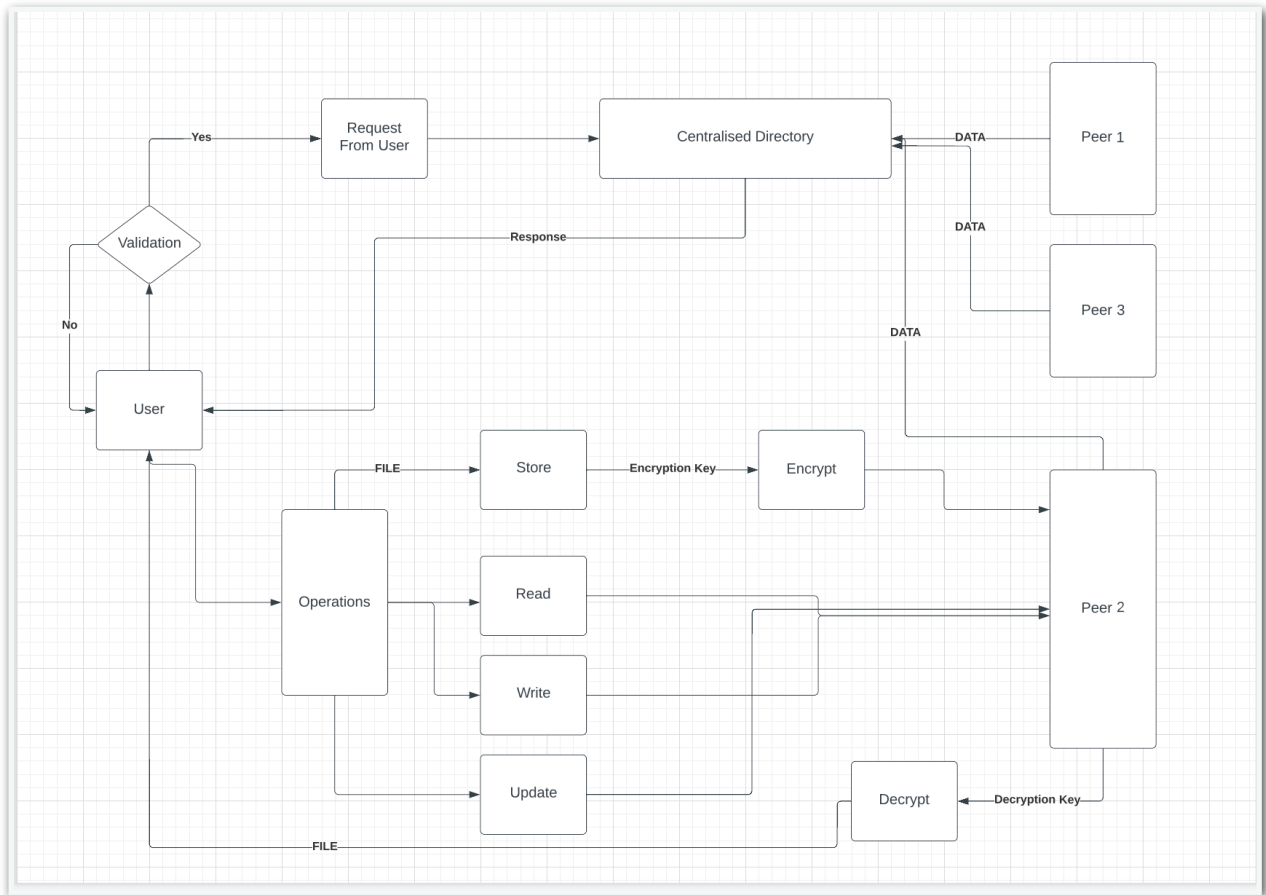
DESIGN PROCESS

Let us take an example where a user 1 is trying to read a file. Firstly the user logs into the file system then a unique key is generated after logging in with the password. If the user 1 unique key matches with the key stored in the centralized directory server which states that the user is valid to perform the particular activity it sends a query by using the file location stored in the directory to the particular peer which is user 4. The user 4 by using the unique file key decrypts the whole file and checks if it is present and sends the query back to the centralized directory that it has the file. Next the user 1 sends the unique file key to the user 4 by following the file path provided by the centralized directory and requests to read the respective file and gets access to it.