

## Network File System Using REST API

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The goal of the project is to build a file system that can provide REST web services (CRUD), that is the user can create, update, delete and retrieve files. The Communication protocol used for the architecture is HTTP.

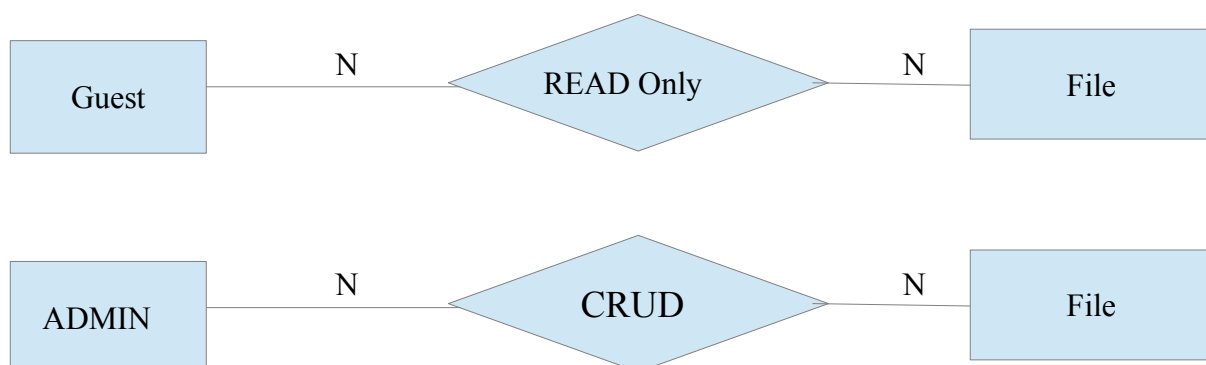
The server side of the system is developed using JavaEE that runs on Glassfish/Payara server, and the IDE used is Netbeans IDE. The server also consists of a database using MySQL and using JPA to interact with the database. The database consists of two tables. One table is used to store user information, such as login credentials, and the second table is used to store file metadata such as title of the file, while the files are stored in directories. A model of the tables and the ER diagram is shown in figure 1 and figure 2.

ID	Login Name	Password	Category
INT	VARCHAR	VARCHAR	VARCHAR
1	Username	abc123	Guest
2	Username2	xyz123	Admin

**Figure 1a. Table used to store user information**

ID	Title
INT	VARCHAR
1	Title of the File/Name of the File

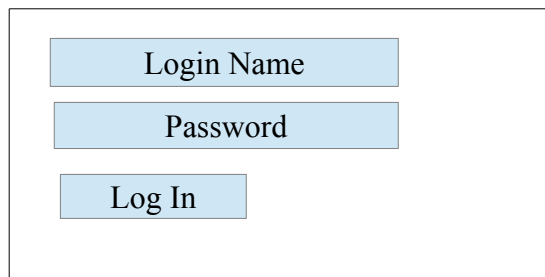
**Figure 1b. Table used to store file metadata**



**Figure 2. ER diagram**

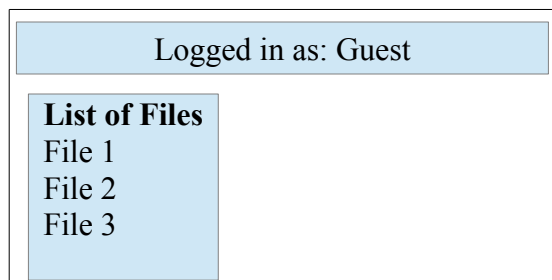
The client side is developed using HTML, JavaScript and CSS. The framework used is Angular with Typescript using Visual Studio Code editor. The client consists of a UI that can be used by the users to register and subscribe for the services. After successful login, the user is presented with the list of files stored on the server. Depending on the rights of the user, he/she can alter the files.

The users are divided into two categories. One category of users, named as guest, can only retrieve or read files, while second category of users, named as admin, can retrieve, update, delete and put files on the server. The client UI model is shown in figure 3.



A login form with three input fields stacked vertically. The first field is labeled 'Login Name', the second is labeled 'Password', and the third is a 'Log In' button.

**Figure 3a. Login UI**



A user interface showing the login status and a list of files. At the top, a box says 'Logged in as: Guest'. Below this, a box titled 'List of Files' contains a list of three items: 'File 1', 'File 2', and 'File 3'.

**Figure 3b. UI after successful log in.**