Project Features list:

- User account creation COMPLETE
  - New users must be able to create an account that will be used to manipulate files later on.
- File upload IN PROGRESS
  - Being able to put compressed files into our cloud system.
- File download
  - Being able to download files from the cloud system that your user account has authorization to read.
- File permission modifications TODO
  - Allow users to provide other users authorization to their files, or to remove this access. This should enable file sharing with a file owner.
- File browsing TODO
  - Allow users to view files with which they have permission to view/download.
- File encryption TODO
  - Encrypt files that are in the cloud in order to protect them from other users who are not owners of them.
- File decryption
  - Be able to decrypt files when the owner or another user with permission to use it wants to use them.
- CLI access COMPLETE
  - Allow users to use their terminal interface in order to perform file manipulations (sharing, uploading, downloading, etc.). No user account manipulations may be performed on this interface.
- GUI Access IN PROGRESS
  - Allow users to have an in browser method to perform file manipulations which are the same as above. Also this will be the source of user account manipulations.
- Account deletion COMPLETE
  - Allow users to remove their accounts.
- File deletion IN PROGRESS
  - Allow users to be able to remove a file from the cloud interface.

Project Plan:

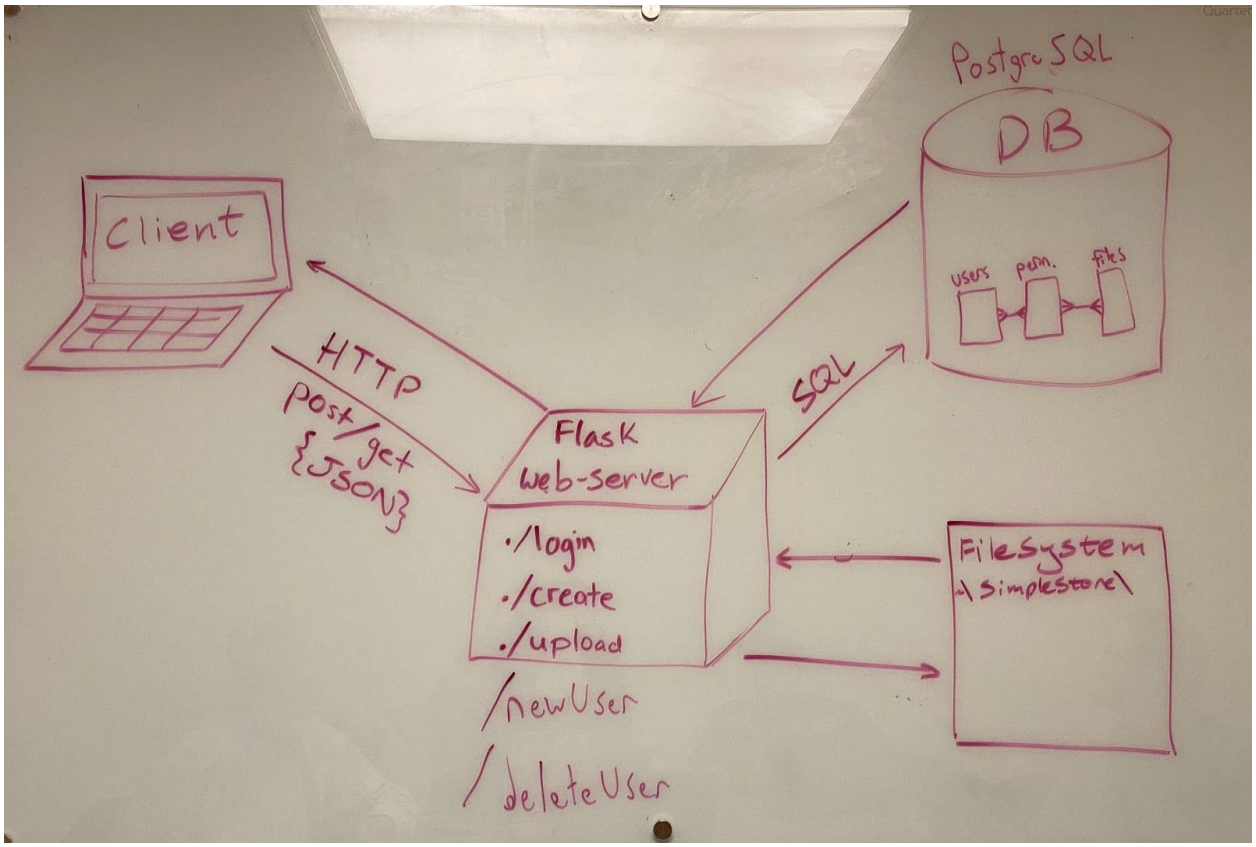
Can be found here. This is a kanban chart showing the current status of all of our features and who they are assigned to.

The order of development we are going to try and achieve is:

1. CLI (10/18/19 - 10/29/19)
2. User Account Creation and Account Deletion (10/29/19 - 11/4/19)
3. File Compression and File Upload (11/4/19 - 11/11/19)
4. File Permission Modification and File Download (11/11/19 - 11/18/19)
5. File Encryption (11/18/19 - 12/2/19)

The dates for completion of each of these tasks will be on mondays. The items listed in step 1 will be worked on now until 10/29/19 where they should be functional enough to move on. Step 2 will start once step 1 finishes so at the latest this will be 10/29/19 and run until the following week (11/4/19). Step 3 will follow the same pattern. At the latest it will start on the fourth and it will then be expected to be completed on the 11th. Step 4 will be the same, ending on the 18th. On the final step we will do a two week sprint. This means that work on encryption will start on the 18th and be completed no later than 12/2/19 which is the deadline.

Architecture Design:

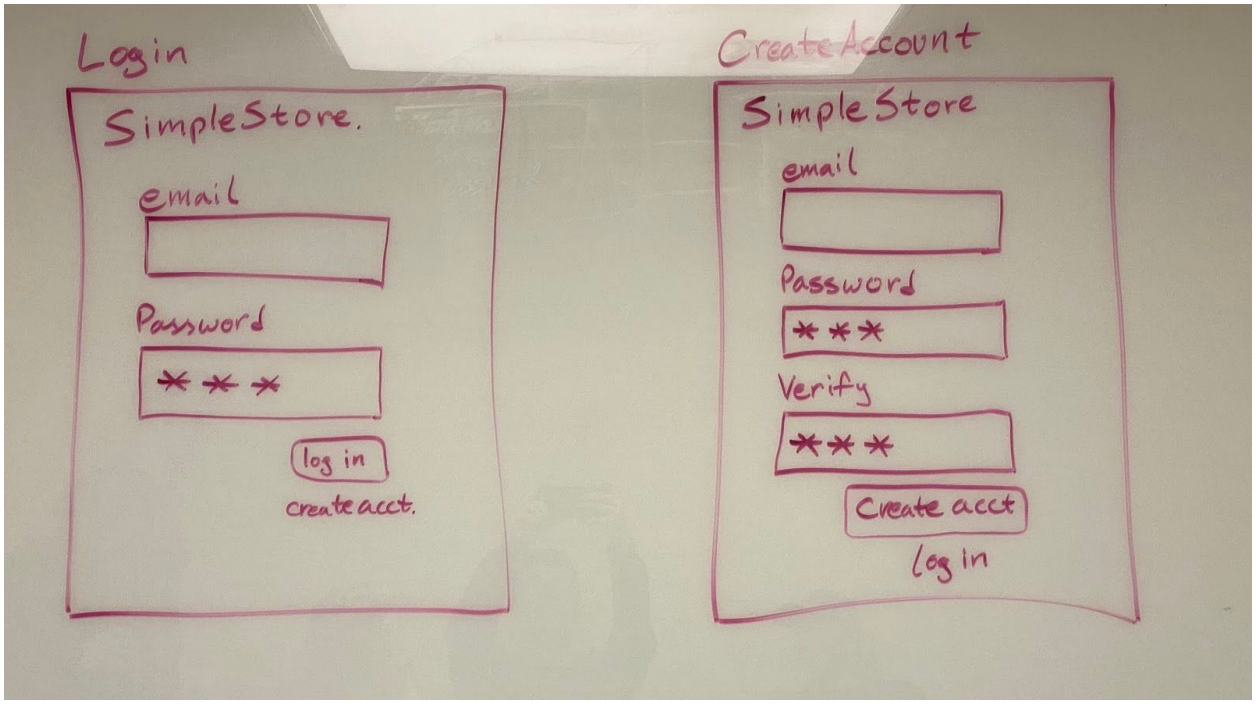


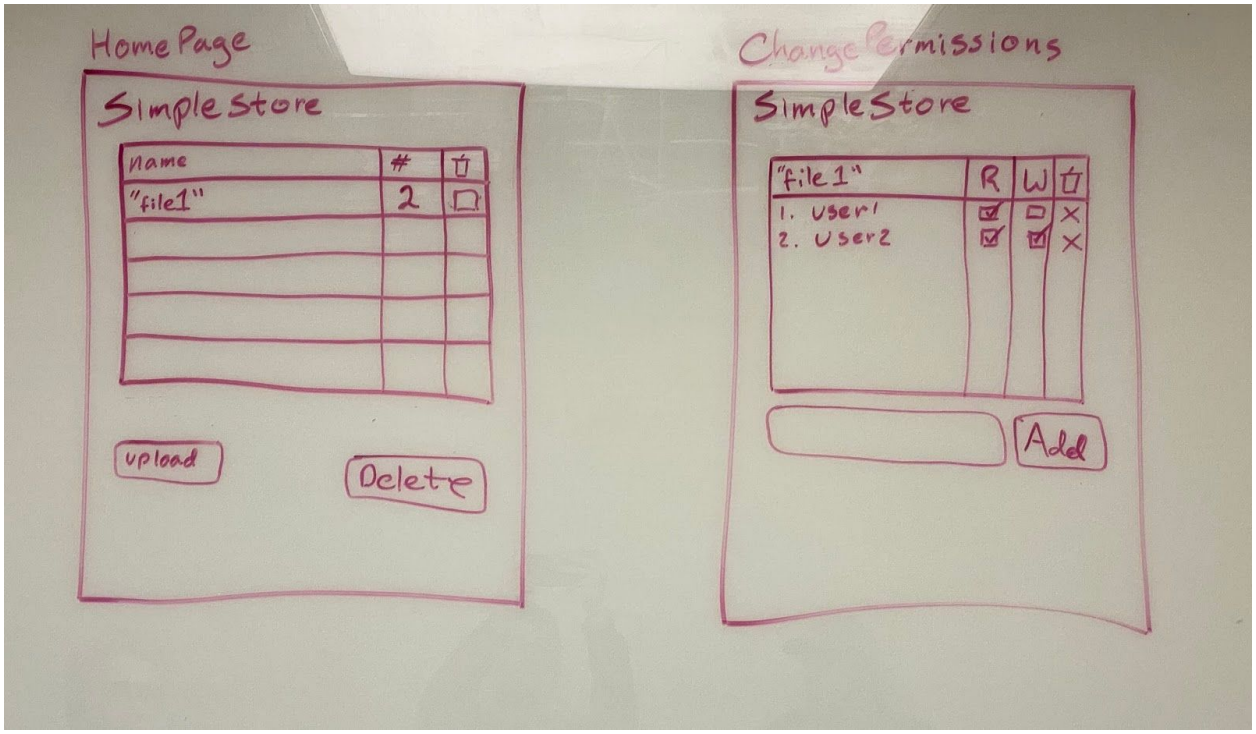
Frontend Design:

CLI - The design for the CLI is that there will be a term for every action that a user may want that will be in the form -term. For terms that need an argument the argument will simply

follow the term in the form ‘-term arg’. Multiple arguments can be accepted at one time by simply having repeated args in the form ‘-term arg1 arg2’. The CLI will only recognize the first instance of any term that is input so any repeated term will be ignored. All terms are defined from the features list with an additional help command that can accommodate up to 1 argument (a term).

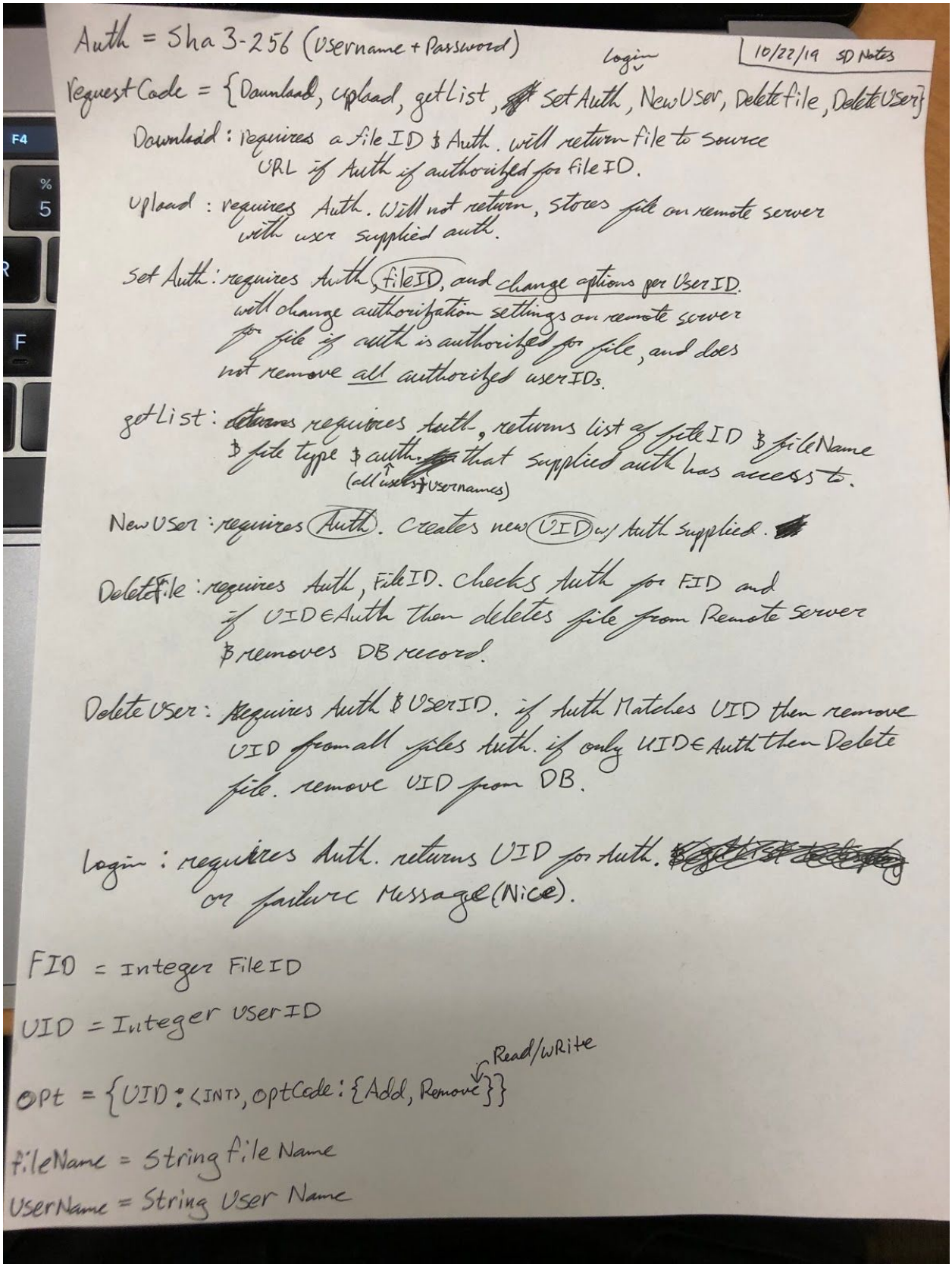
GUI -





Web Service Design:

We have defined an API between our client-side interfaces and our back-end web server. Here it is:



Database Design:

We will create three PostgreSQL tables called Users, Permissions, and Files. In the Users table we will store a uid as the primary key for each user, the user's username, and the user's password. In the permissions table we will store a primary key for each file permission called pid, the file id (fid), and the user id that has permission to access that file (uid). The files table will store the file id (fid), file name, path to the file, and the file type.