

CS 307 Team 34

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Project Name: OverDrive

Problem Statement

In large shared folders on Google Drive, it is very difficult to manage properties of a folder and all of its subfolders and files quickly and efficiently. Google provides a solution to this via their G Suite software, but this is a costly solution to which many smaller organizations or groups do not have access.

Background Information

Google Drive is a popular system for creating, editing, and sharing documents, sheets, and other files created using Google's services. Each file and folder has an owner, as well as a number of users who have access to share, edit, and/or view each folder and file. When managing large organizations, such as student organizations, the number of files and folders can become quite large, and the structure quite complex.

Unfortunately, while changing the sharing on one file is simple, when it comes to changing permissions on multiple files and folders at once, Google's default system is difficult to work with. This is especially complex when different people own different files and folders in a folder structure. Additionally, Google provides no way to view the entire directory structure in one place: you must manually search through each folder to find a file you want.

Google's solution to this problem is their "G-Suite" software, which allows all files of an organization to be owned by one account, and for that account to be able to share files and folders with other users. The problem with this software is that Google charges an organization \$50/year per user. This is an impractical cost for a student organization or other small business. While Google does offer G-Suite free for non-profits, Purdue student organizations are all under the same non-profit umbrella (Purdue). This means that while Purdue could use the service internally, all student organizations would have to be added to their shared folder under their account, which is impractical and not a service they offer. Our extension, while by no means a replacement for G-Suite, aims to make it easier for smaller organizations to manage permissions on their files and folders.

Requirements

Functional Requirements

1. As a user, I would like to install the OverDrive extension in Google Chrome.
2. As a user, I would like to install the OverDrive extension in Mozilla Firefox (if time allows)
3. As a user, I would like to be able to view my entire directory structure at once

4. As a user, I would like to visualize file permissions in that structure.
5. As a user, I would like to be able to see the number of files and subfolders in a folder
6. As a user, I would like to easily add a person to my files and folders.
7. As a user, I would like to easily remove a person from my files and folders.
8. As a user, I would like to easily change another user's permissions for a file or folder.
9. As a user, I would like to easily add multiple people to a file or folder at once.
10. As a user, I would like to easily remove multiple people from a file or folder at once.
11. As a user, I would like to easily change multiple people's permissions for a file or folder at once.
12. As a user, I would like to easily add a person to multiple files and folders at once.
13. As a user, I would like to easily remove a person from multiple files and folders at once.
14. As a user, I would like to easily change permissions of a person for multiple files and folders at once.
15. As a user, I would like to easily add multiple people to multiple files and folders at once.
16. As a user, I would like to easily remove multiple people from multiple files and folders at once.
17. As a user, I would like to easily change permissions for multiple people for multiple files and folders at once.
18. As a user, I would like to easily give ownership of a file or folder to another user.
19. As a user, I would like to easily give ownership of multiple files or folders to another user.
20. As a user, I would like to easily request ownership of a file or folder from other people.
21. As a user, I would like to easily request ownership of multiple files and folders from other people.
22. As a user, I would like to select whether editors can change permissions of a file or folder
23. As a user, I would like to select whether editors can change permissions of multiple files and folders at once.
24. As a user, I would like to choose which subfolders and files are affected by changes to a folder.
25. As a user, I would like a tutorial of the features the extension offers.
26. As a user, I would like to create groups of people with whom I can easily share files .
27. As a user, I would like to be able to change the color scheme of the extension (if time allows).
28. As a user, I would like to be able to give user feedback.
29. As a developer, I would like to receive user feedback.

Non-Functional

1. Performance: The user should not experience any noticeable lag (less than 500ms slower than if they had done the operation without the extension)
2. Usability: The interface should be intuitive, and someone not familiar with Google Drive should be able to figure it out quickly
3. Security: The extension should not affect the contents of any file, nor should it delete or create files or folders
4. Security: The extension should not collect any personal data from the user account or the contents of the user's drive
5. Security: The extension should use Google's login interface
6. Portability: Users should be able to download and install the extension in Windows, Mac, and Linux operating systems
7. Interoperability: Users should be able to run the extension on Chrome and Firefox (if time allows)
8. Scalability: The extension should support changing up to 500 files and managing the permissions of up to 50 users at once.